



हिंदुस्तान ऑर्गेनिक केमिकल्स लिमिटेड
HINDUSTAN ORGANIC CHEMICALS LIMITED
(भारत सरकार का एक उद्यम)
(A Government of India Enterprise)
अंबालामुगल, एर्नाकुलम जिला, पिन - 682 302
AMBALAMUGAL, Ernakulam District, PIN – 682 302.
फोन: (0484) 2720911, फैक्स नंबर (0484) 2720893
Phone: (0484) 2720911, FAX No. (0484) 2720893

ई-निविदा सूचना
OPEN E- TENDER NOTICE

HOCL निम्न लिखित कार्य के लिए दो बोली प्रणाली के तहत ई-बोली आमंत्रित करता है:
HOCL Invites e-Bids under the **Two Bid system** for the following work:

Sl. No.	Description of Item and Tender No.
1	<p>कार्यकानाम : क्यूमॉक्स प्लांट (K2501 D) के लिए प्रोसेस एयर कंप्रेसर की आपूर्ति, निर्माण और कमीशनिंग और एएमसी HOCL निविदासंदर्भ : HOCL/Proj/K 2501 D/23 (R)</p> <p>Name of Work : SUPPLY, ERECTION AND COMMISSIONING AND AMC OF PROCESS AIR COMPRESSOR FOR CUMOX PLANT (K2501 D) HOCL Tender Ref : HOCL/Proj/K 2501 D/23 (R)</p>

निविदा दस्तावेज www.hoclkochi.com या www.eprocure.gov.in से डाउनलोड किए जा सकते हैं।

Tender documents may be downloaded from www.hoclkochi.com, <https://mkp.gem.gov.in/market> & <https://eprocure.gov.in/eprocure/app>

इच्छुक पार्टियां निविदा में भाग लेने के लिए कृपया एन आई सी ई प्रोक्योरमेंट पोर्टल (यूआरएल: <https://eprocure.gov.in/eprocure/app>. & <https://mkp.gem.gov.in/market>) पर पंजीकृत हो सकती हैं। निर्दिष्ट ऑनलाइन प्रक्रिया के अलावा अन्य प्रस्तुत निविदाएं स्वीकार नहीं की जाएंगी। कृपया प्रस्ताव जमा करने से पहले किसी भी परिशिष्ट/शुद्धिपत्र/विस्तार के लिए नियमित रूप से उपरोक्त साइटों पर जाएं।

Interested parties may please get registered with NIC e procurement portal ([URL: https://eprocure.gov.in/eprocure/app](https://eprocure.gov.in/eprocure/app). & <https://mkp.gem.gov.in/market>) to participate in the tender. Tenders submitted other than through online procedure specified will not be accepted. Please visit the above sites regularly for any addendum/ corrigendum/ extension before submitting the offers.

कृपया विशिष्टताओं और नियमों और शर्तों की पुष्टि करते हुए **दो बोली प्रणाली** के तहत अपनी ई-बोली जमा करें।

Please submit your E-bids under the **Two Bid system** confirming to the specifications and the terms and conditions.

हिंदुस्तान ऑर्गेनिक केमिकल्स लिमिटेड के लिए और उनकी ओर से

For and on behalf of Hindustan Organic Chemicals Limited (GSTN:32AAACH2663P1ZG),(CIN: L99999KL1960GOI082753)

पी रविकुमार P. RAVIKUMAR

मुख्य महाप्रबंधक (पी/परियोजनाएं/सि एल आर पी) CGM (P/Projects/CLRP)



हिंदुस्तान ऑर्गेनिक केमिकल्स लिमिटेड
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(भारत सरकार का एक उद्यम)
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Phone: (0484) 2720911, FAX No. (0484) 2720893

Ref.No. HOCL/PROJ/K 2501 D/2023 (R)

Date :

Dear Sir,

हिंदुस्तान ऑर्गेनिक केमिकल्स लिमिटेड भारत सरकार का उपक्रम है जो कोच्चि, केरल, भारत में अपने संयंत्र में फिनोल, एसीटोन और हाइड्रोजन पेरोक्साइड का निर्माण करता है। एच ओ सी एल ने **क्यूमोक्स प्लांट के लिए प्रोसेस एयर कंप्रेसर (K2501 D) की आपूर्ति, निर्माण और कमीशनिंग और एएमसी** के लिए ई-निविदाएं आमंत्रित की हैं। एच ओ सी एल ने मैसर्स एनआईसी के साथ एक समझौता किया है। अपने पोर्टल <https://eprocure.gov.in/eprocure/app> के माध्यम से ई-खरीद के लिए। आप कृपया इस निविदा में भाग लेने के लिए एन आई सी के साथ एक विक्रेता के रूप में पंजीकृत हो सकते हैं।

Hindustan Organic Chemicals Limited is a Government of India Enterprises manufacturing Phenol, Acetone & Hydrogen Peroxide at its plant at Kochi, Kerala, India. HOCL invites e-tenders for **SUPPLY, ERECTION AND COMMISSIONING AND AMC OF PROCESS AIR COMPRESSOR FOR CUMOX PLANT (K2501 D)**. HOCL has entered into an agreement with M/s. NIC for e-procurement through their portal <https://eprocure.gov.in/eprocure/app>. You may please get registered as a vendor with NIC for participating in this tender.

निविदा दस्तावेज एच ओ सी एल की वेबसाइट www.hoclkochi.com, <https://बाजारऔरhttps://eprocure.gov.in/eprocure/app> पर अपलोड किए जाते हैं।

Tender documents are uploaded in HOCL website www.hoclkochi.com, <https://eprocure.gov.in/eprocure/app> & <https://mkp.gem.gov.in/market>

संलग्न दस्तावेजों का सूचकांक इसके साथ संलग्न है। आप से अनुरोध है कि कृपया अपनी निविदा तैयार करने / प्रस्तुत करने से पहले सभी दस्तावेजों को विस्तार से पढ़ लें।

Index of documents enclosed is attached herewith. You are requested to kindly go through all the documents in detail before preparing/submitting your tender.

आप अपना प्रस्तावदो-बोली प्रणाली पर निर्दिष्ट नियत तारीख और समय से पहले ऑनलाइन जमा कर सकते हैं।
You may submit your offer on **Two-bid system** online before the due date and time specified.

धन्यवाद, Thanking you,

आपका आभारी, Yours Faithfully,

हिंदुस्तान ऑर्गेनिक केमिकल्स लिमिटेड के लिए और उनकी ओर से
For and on behalf of Hindustan Organic Chemicals Limited (GSTN:32AAACH2663P1ZG),(
L99999KL1960GOI082753)

पी रविकुमार P. RAVIKUMAR
मुख्य महाप्रबंधक (पी/परियोजनाएं/सि एल आर पी) CGM (P/Projects/CLRP)

Signature Not Verified

Digitally signed by LAKSHMI DEVI K S
Date: 2023.11.28 11:57:16 IST
Location: eProcure-EPROC



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HINDUSTAN ORGANIC CHEMICALS LIMITED
(A Government of India Enterprise)
Ambalamugal P.O., Ernakulam District, Kerala – 682 302.

Tender Ref. No: HOCL/Proj/K 2501 D/23 (R). - (R)

**NAME OF WORK: SUPPLY, ERECTION AND COMMISSIONING AND AMC OF
PROCESS AIR COMPRESSOR FOR CUMOX PLANT (K2501 D)**

All Document to be Signed and Stamped by Bidder on All Pages and Submitted along with the E-Tender

GENERAL INSTRUCTIONS FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the Government E Market Place (GeM).

I. GENERAL INSTRUCTIONS

1. This NIT duly filled-in, stamped and signed shall be submitted along with the Bid.
2. Copies of Letter of Awards/ Order/ Work Orders and completion certificate (In case of Works/ services) and /or IRN/Proof of Delivery (In case of supplies) to be enclosed. If necessary, additional documents such as approved technical documents/drawings shall also be submitted to establish bidder meeting qualification criteria.

If bidder and Principal or the bidder & the group company, additional documents to be provided as listed below:

- i. General reference list of the Foreign Principal for the same product line, for the last ten years.
 - ii. Certificate of Incorporation of the Bidder and General reference list of the same product line
 - iii. Documents for establishing the bidder as **Subsidiary (Principal holding at least 51% shares) of a Foreign Principal or another 51% owned subsidiary of the Foreign Principal (called group company herein after) or the holding company of the Foreign Principal, if so**
 - iv. Scope/Activity Matrix
3. Letter from Foreign Principal or Group Company of foreign principal for duly approved engineering facility in India if applicable and satisfy above mentioned General Instructions Sl. No. 2 (i, ii, & iii)
 4. Letter from Foreign Principal or Group Company of foreign principal for duly approved service facility in India.



5. Certificate from Owner/PMC towards operation of business for a minimum period of 5 years in India. Alternatively, Certificate issued by CEO or CFO or Company Secretary of Bidder is also acceptable. Bidder also shall submit certificate/undertaking from CEO or CFO or Company Secretary of the bidder on their letter head indicating **“The referenced Model of the proposed items has been in the operation for a minimum period of one year as on bid due date.”**
6. The Supply/Work/Services completed beyond 10 years need not be indicated here.

Note: - The FIVE (5) years, time period mentioned shall be reckoned as on bid due date.
7. The list of Supply/Work/Services, not of similar nature shall not be indicated here. Failing to comply aforementioned instructions may lead to rejection of bid.
8. Since the information requested in this Tender shall be utilized to assess the Bidder’s capability, it is in the interest of the Bidder to pick those cases out of total list of references which most closely match with the Bid requirement. The Bidder shall also ensure that all information asked for is furnished and the same is correct and complete in all respects. **Tender with incomplete information is liable for rejection without any correspondence.**
9. Incorrect information furnished in this Tender shall render the bid/order liable for rejection at any stage of evaluation/ work execution, at the risk and cost of the bidder and the bidder shall be blacklisted.
10. For the referred installations, the bidder shall indicate the name of the User’s contact person (along with his address, telephone no., fax no., e-mail id etc.) who may be contacted by the Purchaser/his representative, if felt necessary.
11. The Bidder shall also furnish along with the bid his standard Reference list for the equipment/package.
12. For certification by Chartered Accountant/Statutory Auditor and other requirements, refer commercial part.
13. HOCL at their discretion reserves the right to inspect the vendor’s works to validate the credentials submitted by the vendor as part of the qualification documents.

II. SEARCHING FOR TENDER DOCUMENTS

1. There are various search options built in the GeM Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include GeM Bid ID, Organization Name etc.
2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules.
3. The bidder should make a note of the unique GeM Bid ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.



III. PREPARATION OF BID

1. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
3. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

IV. ON-LINE SUBMISSION OF BIDS

1. Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidder has to select the payment option as “offline” to pay the tender fee / as applicable and enter details of the instrument.
4. Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
5. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online. If the BOQ file is found to be modified by the bidder, the bid will be rejected.



V. ASSISTANCE TO BIDDERS

1. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
2. Any queries relating to the process of online bid submission or queries relating to GeM Portal in general may be directed to the 24x7 GeM Portal Helpdesk.

Contact Person (for online submission)

Mr. Midhun Babu
Assistant Manager (Systems)
Mobile No. 8921387812, 8547196394

HOCL Co-ordinator

Mr. Beno P Kurians
Technical Advisor
Mobile No. 9446741530/7907405825
Email - beno.kurians@hoclindia.com



ANNEXURE -II

DEFINITIONS & ABBREVIATIONS

I. Definitions

The following definitions which have been used in these documents shall have the meanings as indicated below:

Sl. No.	Name	Description
1	Purchaser/Owner	Hindustan Organic Chemicals Ltd, Ambalamugal, Kochi, Kerala (HOCL) purchasing goods and services as incorporated in the Tender Enquiry document.
2	Tender	Bids / Quotation received from a Firm / Tenderer / Bidder.
3	Tenderer/Bidder	The Individual or Firm submitting Bids / Quotation / Tender
4	Supplier/Contractor	The individual or the firm supplying the goods and services as incorporated in the contract.
5	Goods	the articles, material, commodities, livestock, furniture, fixtures, raw material, spares, instruments, machinery, equipment, medical equipment, industrial plant etc. which the supplier is required to supply to the purchaser under the contract.
6	Services	Services allied and incidental to the supply of goods, such as transportation, installation, commissioning, provision of technical assistance, training, after sales service, maintenance service and other such obligations of the supplier covered under the contract.
7	Earnest Money Deposit (EMD)	Bid Security/ monetary or financial guarantee to be furnished by a tenderer along with its tender.
8	Contract	The written agreement entered into between the purchaser and/or consignee and the supplier, together with all the documents mentioned therein and including all attachments, annexure etc. therein.
9	Performance Security Deposit / Security Deposit	Monetary or financial guarantee to be furnished by the successful tenderer for due performance of the contract placed on it.
10	Consignee	The organization/person to whom the goods are required to be delivered as specified in the Contract. If the goods are required to be delivered to a person as an interim consignee for the purpose of despatch to another person as provided in the Contract, then that "another" person is the consignee, also known as ultimate consignee.



Sl. No.	Name	Description
11	Specification	The document/standard that prescribes the requirement with which goods or service has to confirm.
12	Inspection	Activities such as measuring, examining, testing, gauging one or more characteristics of the product or service and comparing the same with the specified requirement to determine conformity.
13	Day/Date	Calendar day.
14	Site	The area(s) where the Work under this Purchase Order is to be executed or carried out ie. HOCL Ambalamugal, Kochi.
15	Purchase Order / work order	The Order issued by the Owner and accepted by the Supplier, and subsequent amendments agreed between the Owner and the contractor, in writing.
16	Contract Duration/Period of Contact	The completion period of the whole contract as specified in the Purchase order or extended thereafter in writing by the Owner.
17	Letter of Intent/LOI	The letter of acceptance of the bid of the supplier, as issued by the Owner to the supplier.
18	Purchase Order Value / Contract Value	The total amount payable to the Supplier for the supply, erection, commissioning, training, spares and AMC of Process Air Compressor under the purchase Order in accordance to all the provisions of the NIT HOCL/Proj/K 2501 D/23 (R)
19	Schedule of Rates/SOR	The schedule of rates annexed to LOI/Purchase Order.
20	Authorized representative/ Engineer-in-charge	The person to whom the owner authorizes to act on his behalf.



II. Abbreviations

Sl.No.	Name	Description
1	BDS	Bid Document Sheets
2	BG	Bank Guarantee
3	BL	Bill of Lading
4	BQC	Bidder Qualification Criteria
5	CD	Custom Duty
6	CENVAT	Central Value Added Tax
7	CEO	Chief Executive officer
8	CFO	Chief Finance Officer
9	CIF	Cost, Insurance and Freight
10	CPSU	Central Public Sector Undertaking
11	CST	Central Sales Tax
12	DP	Delivery Period
13	ED	Excise Duty
14	FOB	Free on Board
15	GCC	General Conditions of Contract
16	GIT	General Instructions to Tenderers
17	GTR	Guarantee Test Run
18	IRN	Instruction Release Note
19	LC	Local Content
20	LOI	Letter of Intent
21	LSI	Large Scale Industry
22	NIT	Notice Inviting Tenders.
23	NSIC	National Small Industries Corporation
24	PSU	Public Sector Undertaking
25	PTR	Proven Track Record
26	RR	Railway Receipt
27	RT	Re-Tender
28	SCC	Special Conditions of Contract
29	SIT	Special Instructions to Tenderers
30	SPRV	Single Point Responsibility Vendor
31	SSI	Small Scale Industry
32	TPI	Third Party Inspection Agency duly approved by HOCL.



ANNEXURE -III

GENERAL INFORMATION TO BIDDERS

1. INTRODUCTION

Hindustan Organic Chemicals Limited Kochi Unit (HOCL), a Govt. of India Enterprises under the Department of Fertilizers and Chemicals. HOCL Kochi Unit is situated 18 Kms east of Kochi City, Kerala and well connected with Sea Port/Air Port/National Highway and just opposite to BPCL-Kochi Refineries. HOCL Kochi Unit is manufacturing Phenol, Acetone and Hydrogen Peroxide.

As a part of process optimization HOCL is planning to procure a 100% Oil free, Integrally geared Centrifugal Air Compressor with a capacity of 10600NM³/hr. at a discharge pressure of 8.5 Kg/cm².

HOCL invites e-Bids under single stage two bid system for "**SUPPLY, ERECTION & COMMISSIONING AND AMC OF PROCESS AIR COMPRESSOR FOR CUMOX PLANT (K2501 D)**", from eligible bidders with sound technical and commercial capabilities meeting the Bidder Qualification Criteria.

2. BRIEF SCOPE OF WORK/SUPPLY

Design, engineering, manufacturing, packaging, testing, supply and supervision of erection & commissioning of fixed speed electric motor driven centrifugal compressor (Integrally Geared) as per API-672 (4th edition 2004) with lube oil system, accessories & auxiliaries, as per (HOCL/Projects/K 2501D/2023) with the following major operating parameters:

Centrifugal Air Compressor (Item No. K 2501 D)

a. Capacity in Nm ³ /hr	:	10600
b. Pressure (Suction/Discharge)	:	ATM/8.50 kg/cm ² G
c. Inlet temperature (Operating/Design)	:	Amb. - Minimum 37°C
d. Lube Oil System	:	Pressurized
e. Gas handled	:	Ambient Air (Molecular Weight= 29)

Vendor should take a pressure drop of minimum 20mm of water column across the suction filter while design the compressor package to arrive the discharge pressure quantity and temperature as per the technical specification in Annexure - VIII.

For complete details, refer bid document.

3. DELIVERY PERIOD

Supply, Erection, Commissioning and testing/guarantee run of compressor package has to be completed within **8 months** from the date of LOI/work order whichever is earlier.

4. TIME OF COMPLETION FOR AMC

Time of Completion of AMC shall be 5 days from the date of instruction to start the work.



PERIOD OF CONTRACT:

1. The period of the contract for supply, erection and commissioning of compressor shall be 32 Months (i.e. 8 months delivery + 24 months warrantee) from the date of issue of work order or instructions to start the work by the Engineer-In-Charge.
2. The period of the contract for AMC shall be 5 years after warrantee period

5. SALIENT DETAILS:

A	Bidding Document No.	HOCL/Proj/K 2501 D/23 (R).
B	Bidding Document availability on Website	The Detailed Tender along with Qualification Criteria and Bidding Document can be viewed/downloaded from Central Public Procurement Portal website https://eprocure.gov.in/eprocure/app & https://mkp.gem.gov.in/market A link is also available on HOCL website www.hoclkochi.com All amendments, time extension, clarifications, etc. will be uploaded in the web sites only and will not be published in News papers. Bidders should regularly visit website to keep themselves updated.
E	Last Date and time of submission of Bids (Bid Due Date)	19/12/2023 - 02.00 PM
F	Opening of Un-priced Bids	20/12/2023 - 04.00 PM
G	Opening of Priced Bids	To be intimated later, to the techno-commercial acceptable bidders.
H	e-Bid submission through e-tendering	Bidders are required to upload their e-Bid only on Government e-procurement Portal https://eprocure.gov.in/eprocure/app & GeM Portal - https://mkp.gem.gov.in/market E-bids uploaded in Government e-procurement portal and GeM Portal are only acceptable. Physical bids and bid submitted through any other mode shall not be acceptable.
I	Cost of Bidding Document	Not Applicable.
J	Bid Security/EMD Amount	₹5,30,000/- (Not applicable to MSME/SSI units/PSUs. EMD is not applicable in GeM Portal those who are having current financial turnover 500 Crores or above)

(#) If any of the dates identified above happen to be a declared/closed holiday, the next working day shall be considered. HOCL office working hours is 09:30 Hrs (IST) to 17:00 Hrs (IST) from Monday to Friday.

The Bidding Document is non-transferrable. Bidder shall download the Bidding Document in their own name and submit bid directly through NIC Portal & GeM Portal.



6. DUE DATE & TIME

Due date for submission of tender is (Closing date) **19/12/2023 at 02.00 PM**. Since the compressor assembly is urgently required by HOCL, request of extension of due date will not be entertained.

7. OPENING OF BIDS :

The Bids will be opened on **20/12/2023 at 02.00 PM** electronically. Technically acceptable bidders will be informed about the date and time of opening of the price bids by emails.

Techno-commercial part of the Bids shall be opened at 16.00 hrs. (IST) on due date for opening of bids. Time and date of opening of Price Bids shall be notified to the qualified and acceptable bidders at a later date.

Bidders may view the Bid opening statement through Government e-procurement portal <https://eprocure.gov.in/eprocure/app> & GeM Portal <https://mkp.gem.gov.in/market> after conclusion of Bid Opening by HOCL.



SCHEDULE OF FISCAL ASPECTS

Sl. No.	Particulars	Description
1	Submission of completed Tender	19/12/2023 at 02.00 PM
2	Opening of Bid	20/12/2023 at 02.00 PM
3	Date of Commencement	Date of LOI
4	Delivery Period	Supply, erection, commissioning and GTR of Compressor package has to be completed within 8 months from the date of LOI/Work Order whichever is earlier
5	Time of completion for AMC	Time of Completion shall be 5 days from the date of instruction to start the work.
6	Period of Contract	<ol style="list-style-type: none">1. The period of the contract for supply, erection and commissioning of compressor shall be 32 Months (i.e. 8 months delivery + 24 months warrantee) from the date of issue of work order or instructions to start the work by the Engineer-In-Charge.2. The period of the contract for AMC shall be 5 years after warrantee period
7	Payment terms for Purchase Order	As per Annexure - X - A
8	Performance Security Deposit	<ol style="list-style-type: none">1. Performance security for supply, erection and commissioning of the compressor shall be 10% of contract value of supply, erection and commissioning of the compressor. It shall be furnished within 21 days after notification of award and the same will be released after warrantee period and on submission of Performance Security of AMC contract.2. Performance Security for AMC contract shall be 10% of the AMC contract value and it shall be submitted within 21 days before expiring warrantee period and it shall be released after 60 days from the date of completion of AMC contract.



9	Security Deposit	<ul style="list-style-type: none">Total security deposit shall be 5% of total contract value. This shall be recovered through deductions at the rate of 5% (Five percent) of the value of each running account bill till the total security deposit amount is collected, after which no further deductions shall be made on this account.Security Deposit shall be refunded not later than 60 days to the contractor without any interest after the completion of contract period in all respects and completion of all such obligations under the contract.
10	Period of submitting Final bills	Within 30 days of completion of work. Payment shall be made within 30 days from the date of submission of the final bills.
11	Liquidated damages/per week	0.5 % per week inclusive of Sundays and Holidays upto a maximum of 5 % of contract value. Delay shall be accessed periodically based on the cumulative mile- stones
12	Defect Liability Period	The contractor shall guarantee the entire package for a period of 24 (twenty four) months from the date of commissioning of the compressor package
13	Earnest Money Deposit	₹5,30,000/-
14	Tender Fee	Nil
15	Refund of Earnest Money Deposit to unsuccessful bidders	On award of contract to successful bidder
16	Insurance	For supply, installation, testing and commissioning under the scope of supplier
17	Transportation	On account of supplier
18	B.G / DD in favour of	Hindustan Organic Chemicals Limited Ambalamugal
19	All queries / communication to be addressed to	beno.kurians@hoclindia.com



ANNEXURE -IV

GENERAL TERMS AND CONDITIONS OF THE TENDER

1. QUOTATIONS

Tenders should be free from CORRECTION AND ERASURES, Corrections if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in ENGLISH and accompanied by detailed technical literature, catalogue and detailed dimensional drawings in ENGLISH or otherwise, the offers will not be considered.

2. EARNEST MONEY DEPOSIT (EMD)/BID SECURITY :

EARNEST MONEY DEPOSIT - ₹5,30,000/- (NOT APPLICABLE TO MSME / SSI Units /PSUs) ₹5,30,000/- (Not applicable to MSME/SSI units/PSUs. EMD is not applicable in GeM Portal those who are having current financial turnover 500 Crores or above)

Bids must be accompanied with the Earnest Money Deposit (EMD) as mentioned above. EMD shall be submitted in the form of crossed Demand Draft or Bank Transfer in favour of "Hindustan Organic Chemicals." payable at Kochi. Earnest Money Deposit (EMD) shall be valid for a period of 180 days from the final due date of opening of Techno-commercial Bids and shall be submitted from any Indian Scheduled Commercial Bank.

Swift message/ Cheque/ Cash in lieu of EMD shall not be acceptable.

Bidder must upload the scanned copy of EMD (in the prescribed format) on e- Tendering website along with the e-bid. Original EMD shall be submitted in a sealed envelope titled "Earnest Money Deposit for Bidding Document No. HOCL/Proj/K 2501D/2023". Envelope shall be addressed to details given below:

Beno P Kurians
Technical Advisor
Hindustan Organic Chemicals Limited
Ambalamugal, Ernakulam , Kerala - 682 309

In case bidder fails to upload scanned copy of EMD on e-tendering website by the bid due date & time, such bid shall not be considered for evaluation. If the Bidder is unable to submit original EMD within the due date and time for Bid submission, he may submit the same within 7 calendar days from the date of un-priced bid opening, provided copy of the same have been uploaded on E- Tendering website. In case the Bidder fails to submit the EMD in original within 7 calendar days, his bid shall be rejected, irrespective of their status / ranking in tender and notwithstanding the fact that a copy of EMD was uploaded earlier by the Bidder.

EMD exemption will be applicable for Micro and Small Enterprises (MSMEs) registered with District Industries Centres (DIC) or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation (NSIC) or Directorate of Handicraft and Handloom or MSMEs who are having Udyog Aadhaar Memorandum or any other body specified by Ministry of



Micro, Small and Medium Enterprises. On opening the un-priced bid, the certificate will be verified for registration and validity. The certificate shall be valid as on date of opening of un-priced bid. If the bidder meets this requirement, their bid will be processed further. If not, the bidder will be asked to submit EMD. In case the bidder does not submit the EMD within 7 calendar days, then their bid shall be rejected.

Documents to be submitted by MSMEs along with un-priced bid

- a. Documentary evidence that the bidder is a Micro or Small Enterprises registered with District Industries Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or MSMEs who are having Udyog Aadhaar Memorandum or any other body specified by Ministry of Micro, Small and Medium Enterprises.
- b. The above document submitted by the bidder shall be duly certified (in original) by Notary or the Statutory Auditor of the bidder or a practicing Chartered Accountant (not being an employee or a Director or not having any interest in the bidder's company/ firm) where audited accounts are not mandatory as per law or duly notarized by any Notary Public in the bidder's country.
- c. If the bidder does not provide the appropriate document or any evidence to substantiate the above, then it will be presumed that they do not qualify for any preference admissible.

Details of beneficiary for issuance of bank guarantees

Client Name & Address : Hindustan Organic Chemicals Limited
Account Name : Hindustan Organic Chemicals Limited
Bank Name : Central Bank of India
Account Number : 3580607136
IFSC Code : CBIN0284515
Branch Name & Address : Tripunithura Branch
SN Junction
Tripunithura

3. PRE-QUALIFICATION CRITERIA (to be included in the Technical Bid)

The Tenderers shall submit the following in the Technical bid (Un-priced Bid) without which the tender will be rejected.

- Scope of Work, General Terms and Conditions (Annexure I to XXVII & Annexure A to S) (complete **set of Tender Documents**) to be signed and stamped on all pages, scanned and uploaded.
- Proforma of Declaration of Black Listing/ Holiday Listing (Annexure D) - duly filled, signed and stamped, scanned and uploaded.
- Bidder Information (Annexure - E) - put ✓ mark in front of your confirmation, signed and stamped, scanned and uploaded.
- Self Declaration of Local Content (Annexure F) - duly filled, signed and stamped, scanned and uploaded.



- Bid Security Declaration (Annexure H) - duly filled, signed and stamped, scanned and uploaded.
 - Declaration of Compliance of Order (Public Procurement No.1, 2 & 3) dt. 23 Jul 2020 & 24 Jul 2020 on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017 (Annexure R) - duly filled, signed and stamped, scanned and uploaded.
 - Instructions to the contractors for use of vehicles (Annexure - S) - duly signed and stamped, scanned and uploaded.
1. Complete set of Tender Document duly filled in and signed by the Tenderer as prescribed in different clauses of the Tender Document.
 2. GCC duly filled in the relevant portions, signed and stamped all the pages by the tenderer (The tenderers have to download the GCC)
 3. Information regarding tenderer
 4. Details of work of similar type and magnitude carried out by the tenderer
 5. In the case of MSME, necessary certificate (self attested) shall be submitted in the Technical Bid.
 6. Organogram of the bidder.
 7. Exceptions and deviations, if any, with reference to the Clause No. and page No. of Tender shall be submitted as a separate statement (Deviation Statement).
 8. A tentative programme for the execution and completion of work within the time specified.
 9. Proven Track Record as per Annexure - XVII.
 10. Average annual financial turnover of the bidder during the last 03 years ending 31st March 2023 should be at least **₹79.5 Lakhs** (Details of annual financial turnover to be submitted with Documentary proof).
 11. Experience of having successfully completed similar works during the last 5 years ending 31st March 2023 should be either of the following: (Documentary proof should be attached along with the Technical Bid).
 - Three similar completed works costing not less than the amount equal to **₹106 Lakhs** each.
OR
 - Two similar completed works costing lot less than the amount equal to **₹132.5 Lakhs** each.
OR
 - One similar completed work costing not less than the amount equal to **₹212 Lakhs** each.
 12. Details of current commitments with copies of Work Orders to be submitted along with Technical Bid.



4. BIDDER'S QUALIFICATION CRITERIA (BQC)

Bidder shall fulfill the following Bidder's Qualification Criteria:

4.1. Technical Criteria

- 4.1.a. The Bidder shall be the manufacturer of the offered packaged integrally geared centrifugal air compressor (as per API 672, 4th edition 2004) & shall be single point responsibility vendor (SPRV) for the complete Integrally Geared Centrifugal Compressor Package.
- 4.1.b. The Bidder shall have engineered, designed, manufactured, packaged, tested and supplied, in the last **FIVE (5) years**, from the proposed manufacturing plant, at least ONE (1) packaged integrally geared centrifugal air compressor set (As per API 672, 4th edition 2004) which has electric motor as driver and shall be from the same model series having 80% or higher driver power, Actual Flow rate (80% or higher) and equal or higher discharge pressure as offered. As a minimum, the reference compressor package shall have completed minimum ONE (1) Year of operation at site as on the bid due date.

Note: The **FIVE (5) year** time period mentioned above shall be reckoned from the bid due date.

ALTERNATIVELY, bidder may be a minimum **51%** owned Indian Subsidiary of a Foreign Principal and the qualification criteria is met by the foreign principal provided the following conditions are met.

- a. The Bidder must be a subsidiary of the Foreign Principal (Principal holding at least 51% shares) for at least last one year, reckoned from the bid due date.
- b. Scope/activity matrix between the Bidder and Principal shall be submitted to HOCL along with the bid. The bidder and the Principal shall ensure that scope/activity matrix shall delineate according to the experience and capability of the Indian subsidiary vis-à-vis the company whose Proven Track Record (PTR¹) is being considered.
- c. The Bidder shall have engineered, designed, manufactured, packaged, tested and supplied, in the last **FIVE (5) years**, from the proposed manufacturing plant, at least ONE (1) packaged integrally geared centrifugal air compressor set (As per API 672) which has electric motor as driver and shall be from the same model series having 80% or higher driver power, Actual Flow rate (80% or higher) and equal or higher discharge pressure as offered. As a minimum, the reference compressor package shall have completed minimum ONE (1) Year of operation at site as on the bid due date.

Note: The **FIVE (5) year** time period mentioned above shall be reckoned from the bid due date.

- d. The Bidder shall have engineering facility & service facility in India, corresponding to matrix cited above, duly approved by the Principal.
- e. As a minimum, the Principal shall carryout the following activities:



- Design/Application engineering
- Approval of Sourcing of components
- Approval of Quality Assurance Plans (QAP) identifying Hold, Check & Witness stages (by Principal)
- Responsibility Matrix

The Bidder shall either source critical components (i.e. impellers & diffusers (as applicable), complete rotor(s), casing (casing includes all pressure containing parts), guide vanes (as applicable), complete gear assembly & bearings) from the Principal or directly from the manufacturers supplying the same to the Principal, whose experience is being considered (a certificate to this effect shall be provided by the Principal) and source non critical components / auxiliary components supplies himself.

- 4.1.c. The Bidder shall have Manufacturing, Assembly and Testing facility for the proposed scope In India.
- 4.1.d. The Bidder shall have an established **service facility in India** (either his own or an approved service provider) which must be approved by Principal.

¹Proven Track Record (PTR): The essence of PTR is to accept equipment (i.e. Process Air Compressor) which is not prototype and is field proven for similar operating conditions.

4.2 Financial Criteria

Annual Turnover:

The average Annual Turnover of the bidder in last 3 (three) financial years and complete audited financial statement / annual report preceding the current financial year should be submitted in form **Annexure - XXIII**.

5. DOCUMENTS & DATA REQUIRED WITH BID

5.1 For Technical Criteria

Bidder shall submit the following documents in the un-priced technical bid to establish that the bidder meets the Qualification requirements as per **Clause No. 4.1** above of this document:

- Offer should contain complete scope of supply with all technical details, specifications, delivery and other commercial terms and conditions.
- Point by point confirmation for the Technical Specification enclosed is to be provided. If there are any deviations, the same should be clearly specified. Offers received without confirmation to our specification will be rejected.
- List of customers to whom same or similar equipment have been supplied along with performance certificates to be enclosed.



- d. List of spares parts (with part numbers & price) for operation and maintenance (after 2 year warranty period) as per the attached list. **(Annexure - XV - A & Annexure - XV - B)**
- e. Duly completed Bidder Proven Track Record Pro-forma as enclosed with the bid document, together with all back-up documents specified therein, duly authenticated as required.
- f. Documentary evidence like copies of Purchase Order and Inspection release note (IRN), towards meeting PTR requirements **{as per clause 4 above}**, based on which qualification is sought.
- g. Copy of scope / activity matrix between the bidder and Principal as per **Clause 4** above.
- h. Bidder shall also furnish certificate from Owner / PMC towards operation for a minimum period of one year. Alternatively, Certificate issued by CEO or CFO or Company Secretary of Bidder is also acceptable. In such a case, bidder shall submit certificate/undertaking from CEO or CFO or Company Secretary of the bidder on their letter head indicating "The referenced Model of the proposed item/s has been in operation for a minimum period of one year as on bid due date."
- i. General Reference List for the proposed equipment.
- j. Latest Product Catalogs of the manufacturer for the proposed equipment.
- k. Documents for establishing the bidder as a subsidiary of the Principal.
- l. Corporate Guarantee of the Principal (in the format provided in Bidding document)
- m. Compliance statement on bidder's letter head for guarantee period of 24 months.
- n. Compliance statement on bidder's letter head to furnish Performance Guarantee/ performance security deposit for an amount equivalent to **10%** of Order value.
- o. Information on shipping weight and cubage (length, width & height) to be provided

Note: For point no. g above, bidder may submit the audited annual report of parent company specifying the relationship OR a letter from their Statutory Auditor/ CEO/CFO/ Company Secretary clearly mentioning that relationship subsidiary or another owned subsidiary of the Foreign Principal between them OR any other authentic document.

5.2 For Un-Priced Commercial Criteria

Bidder shall submit the following documents along with un-priced Technical Bid:

- a. Station of despatch
- b. Terms of payment
- c. Taxes & duties including CESS applicable.
- d. Delivery Schedule



- e. Filled-in check list to be enclosed
- f. Offer validity
- g. Place of manufacture
- h. A copy of “Un-Priced Part II” i.e., a copy of the Price Bid without the price details to be enclosed.
- i. Bidder shall furnish the Complete Audited Financial Statements / Annual Report of the 3 (Three) financial years preceding current financial year.

6. REQUIREMENT OF AUTHENTICATION AND SUBMISSION OF DOCUMENTS:

6.1 Authentication

- a. Submission of authentic documents is the prime responsibility of the bidder. Wherever HOCL has concern or apprehensions regarding the authenticity/correctness of any document, HOCL reserve the right to get the documents cross-verified from the document issuing authority.
- b. All documents furnished by the bidder in support of meeting the Financial Criteria of BQC shall be:
 - Duly certified by Statutory Auditor of the Bidder or a practicing Chartered Accountant (not being an employee or a Director and not having any interest in the Bidder’s company) where audited accounts are not mandatory as per law.
- c. All documents furnished by the bidder in support of meeting the Technical Criteria of BQC shall be:
 - Bidder shall submit self-certified documents from any one out of CEO or Company Secretary of the Bidder (Limited company only) along with Self-Certification as per **Annexure - XIX** attached with NIT. This option shall not be applicable to Proprietorship/ Partnership firms.
- d. With regard to financial documents, in case Bidder submits bound original printed and published Annual Report, consisting of audited annual financial statements for the preceding three financial years, the same shall be considered without any certification as mentioned above.

However, in case the bidder submits either a photo copy of audited financial statement or a translated copy of the published financial statements, the same shall be certified as per 4.2 above.

6.2 **SUBMISSION OF DOCUMENTS**

- a. All documents furnished by the bidder in support of meeting the Technical and Financial criteria (4.1 & 4.2) of BQC as per above NIT shall be **Digitally Signed** authenticated copies and submitted in e-tendering website along with their offer.

In case of submission of digitally signed authenticated copies of documents for meeting BQC, bidder shall not be required to submit the original authenticated documents in physical form to HOCL subject to confirmation by bidder on **Annexure - XIX & XX** attached with NIT.



- b. In case bidder is not able to submit the authenticated documents through e-tendering website as per the requirement of bidding document, bidder shall submit the hard copy of authenticated copies of documents for meeting BQC, as above in a separate section/ booklet within **07 (Seven) calendar days** of unpriced-bid opening at the address mentioned below. This section/booklet shall be titled as **“Documentation against Bidder Qualification Criteria (Technical and Financial)”** with proper index and page numbering.

The address for submission of above documents including Earnest Money Deposit, Integrity Pact, Power of Attorney is given below:

Beno.P.Kurians
Technical Advisor
Hindustan Organic Chemicals Limited
Ambalamugal, Ernakulam, Kerala - 682 309

- c. Similar to BQC documents, Power of Attorney and other authenticated documents like proof of being MSMEs for availing preference under Public Procurement Policy-2012 for MSMEs can be submitted Digitally Signed as per the requirement specified in the Bidding Document.

Failure to meet the above Qualification Criteria will render the Bid to be summarily rejected. Therefore, the bidder shall in his own interest furnish complete documentary evidence in the first instance itself along with their bids, in support of their fulfilling the Qualification Criteria as given above.

Submission of any document / certificate by the Bidder shall be in English language. Metric measurement system shall be applied.

7. Taxes and Duties

The Contract will be awarded on fixed all-inclusive price unless otherwise specified. All rates in the tender shall cover applicable taxes, levies and duties. However applicable GST will be paid by HOCL subject to the successful tenderer having GST registration with Central Excise.

8. Liquidated damages

In case the contractor fails to complete the work within the stipulated period, contractor shall be liable to pay a LD of ½% (half percentage) of the contract value **per week** for the delay or part thereof subject to a maximum of 5% (Five percentages) of the contract value

9. Risk purchase

If the supplier fails to execute the work / deliver the goods within the delivery specified in the Purchase Order, HOCL will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or despatch within the delivery period mentioned in the Purchase Order.

10. Guarantee

The equipment shall be guaranteed for a period of 24 months from the date of commissioning and acceptance from its performance.



11. Performance Security

1. Performance security for supply, erection and commissioning of the compressor shall be 10% of contract value of supply, erection and commissioning of the compressor. It shall be furnished within 21 days after notification of award and the same will be released after warranty period and on submission of Performance Security of AMC contract.
2. Performance Security for AMC contract shall be 10% of the AMC contract value and it shall be submitted within 21 days before expiring warranty period and it shall be released after 60 days from the date of completion of AMC contract.

Performance Security shall be furnished in the form of Account Payee Demand Draft/ Bank Guarantee issued from any Commercial Bank in India/ on online payment in an acceptable form and should be valid till the end of defect liability period.

12. Security Deposit

Total security deposit shall be 5% of **each contract value**. This shall be recovered through deductions at the rate of 5% (Five percent) of the value of each bill till the total security deposit amount is collected, after which no further deductions shall be made on this account.

Security Deposit shall be refunded not later than 60 days to the contractor without any interest after the completion of contract period in all respects and completion of all such obligations under **each contract**.

13. Short shipment / Warranty replacement

In case of any short shipment in the main equipment / spares, customs duty levied on such supplies, shall be borne by the supplier. Any warranty replacement during the warranty period shall be supply at HOCL Kochi site.

14. Inspection & Testing

All goods shall be subject to inspection by HOCL or its authorized representatives at supplier's works or at HOCL. The machine would be inspected and proved at supplier's works prior to dispatch however; final inspection and acceptance of the machine will be carried after installation and guarantee run for 72 hrs. of the machine at HOCL, Kochi.

15. Operating and Maintenance manuals

The Bidders shall clearly mention in their offer that Operating Maintenance Manuals as mentioned in the Technical Specification, in 6 set of hard copies + 1 Soft copy shall be provided.

16. Packing

The Supplier shall arrange for packing suitably in all respects considering the peculiarity of the material involved for normal transport by sea / air / rail / road and suitably protected against effect of tropical salt laden atmosphere in the event of shipment being delayed at ports.



17. Delivery Period

The delivery period for the compressor package including accessories and spares & commissioning and guarantee test run should be maximum 8 (eight) months from the date of LOI.

18. Time of Completion for AMC

Time of Completion of AMC shall be 5 days from the date of instruction to start the work

19. Period of Contract

1. The period of the contract for supply, erection and commissioning of compressor shall be 32 Months (i.e. 8 months delivery + 24 months warrantee) from the date of issue of work order or instructions to start the work by the Engineer-In-Charge.
2. The period of the contract for AMC shall be 5 years after warrantee period

20. Validity of the Tender

The offers for main equipment and spares etc. as per NIT No. HOC/Proj/K 2501 D/23 (R) shall be valid for a period of **180 days (one hundred and Eighty days)** from the date of opening of the Techno Commercial un-priced Bid (Part I).

A Tenderer shall not be entitled during the said period of **180 days** without the consent in writing of the company to revoke or cancel his tender or to vary the tendered rate or any terms thereof.

21. Price

The Contract will be awarded on all inclusive price basis as per the schedule of rates. All rates in the tender shall cover applicable taxes, levies and duties. However, applicable GST will be paid by HOCL after filing GSTR 3 B by the Tenderer.

The price shall be quoted both in figures and words. In case a tenderer has quoted two different prices in words and figures the price in words will be considered valid and binding on the tenderer.

22. Payment Terms

As per Annexure - X - A

23. Contract Preference

Contract / Price Preference or any other concessions applicable for **MSME / SSI Units /PSUs** will be as per latest Government of India Directives. For availing this benefit, the bidder shall make their claim in the Bid itself and enclose necessary documentary evidence to prove their eligibility.



24. Defect Liability Period

The contractor shall guarantee the entire package for a period of 24 (twenty four) months from the date of commissioning and acceptance by HOCL of the compressor package.

25. Salient Points of HSE (Health Safety & Environment) That are to be Considered While Submission of Offer are:

- a. Consumption benchmarks related to output shall be provided wherever applicable for key input resources (energy/fuel/chemicals)
- b. Competency requirements for operation, maintenance and calibration, if any, shall be communicated
- c. If any hazardous chemicals as per MSIHC (Manufacturing, Storage and import of Hazardous Chemicals) Rules 1989/94/2000 are used, the MSDS shall be provided, along with On site & Off site emergency plan (as applicable)
- d. The noise level at operator level shall be within 90 dBA
- e. OH&S (Occupational Health and Safety) control measures for safe working of machine as applicable shall be specified.
- f. The machine / equipment shall be fitted with guard for rolling and moving parts and shall comply with applicable OH&S legislations and Factories Act 1948.
- g. The supplier shall submit the layout drawing of operating controls, displays etc. and operating instructions to enable ergonomics evaluation and approval.
- h. The recommended PPE (Personal Protective Equipment) for the equipment shall be furnished.
- i. Alarm system (both visual and audible) and Automatic switch off of the equipment shall be provided for any intrusion, overloading, short circuiting or any malfunctioning of the equipment.
- j. Details of all hazardous / harmful substances discharged as by-products / wastes during operations of the machine / equipment, such as fumes, gases, dust particles, aerosols UV./IR (Ultra violet / infra red) radiations, etc. shall be furnished, along with their concentrations and their TLV, (Threshold Limit Value).
- k. Appropriate pollution control measures shall be proposed to keep the emissions from the machinery / processes within the prescribed limit as stated in Environment Protection Rules 1986.
- l. Wherever industry specific standards are not available for control of pollutants, general emission standards shall be used.
- m. Chemicals banned due to their negative impact on the environment shall not be used in the process
- n. Primary materials used in the equipment shall be specified and they shall be eco – friendly.



Evaluation of offers shall be on the basis of delivered cost (Net cash outflow to HOCL).

- a. HOCL also reserve its right to allow to the Public Sector Enterprises ordering and price preference facilities as admissible under the existing policy.
- b. HOCL reserves its right to reject a tender due to unsatisfactory past performance in the execution of a contract at another project / unit.
- c. HOCL shall be at liberty to reject or accept any tender, part or in full, at their own discretion and any such action is not liable for any question or claim against HOCL.
- d. HOCL reserves the right to go for a Reverse Auction (RA) instead of Opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions governing RA are given below.

26. Submission of Bids

Bids are required to be submitted through Government e-procurement portal <https://eprocure.gov.in/eprocure/app> & GeM Portal - <https://mkp.gem.gov.in/market> only, on or before the Bid submission date and time. Bidders are required to register themselves at Government e-procurement portal <https://eprocure.gov.in/eprocure/app>. or GeM Portal- <https://mkp.gem.gov.in/market>. No registration fee would be charged from the bidders.

Manual Bids / Offers shall not be permitted. The Offers submitted through e-tendering system shall only be considered for evaluation and ordering. Fax/e-mail/Physical Bids shall be rejected.

Bidders to refer Instruction to Bidders for E-Tendering mentioned in the Bidding Document.

Techno-commercial part of the Bids shall be opened at 14:00 hrs. (IST) on due date for opening of bids. Time and date of opening of Price Bids shall be notified to the qualified and acceptable bidders at a later date.

Bidders may view the Bid opening statement through Government e-procurement portal <https://eprocure.gov.in/eprocure/app> & GeM Portal <https://mkp.gem.gov.in/market> after conclusion of Bid Opening by HOCL.

Earnest Money Deposit, Integrity Pact, Power of Attorney, BQC documents, MSME Certificate and any other document as required to be submitted in original shall be submitted in sealed envelopes to the below mentioned address within 7 calendar days from the date of opening of unpriced bids. Scanned copy of the same to be uploaded on e-procurement Portal:



27. PRICE BID SUBMISSION-BOQ

PRICE BID SUBMISSION-BOQ (NIC Portal) : Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the blue coloured (unprotected) cells with their respective financial quotes and other details Refer Instructions to Bidder for Online Bid Submission. (such as name of the bidder). No other cells should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

Those who are interested to participate the tender through GeM Portal may follow the procedure spelt in the same.

28. Other Terms and Conditions

28.1 General Conditions of Contract (GCC) of HOCL

The General Conditions of Contract of the company is applicable to, and forms part of the contract. The General Conditions of Contract of HOCL is available in the office of The Chief General Manager (HR) of HOCL, Ambalamugal or can be downloaded from our Web site www.hoclkochi.com.

28.2 Right to Issue Addendum

HOCL reserves the right to issue any addendum to the tender document to clarify/amend/supplement and/ or delete any of the conditions, clauses or terms stated in the tender documents. Each addendum issued shall be distributed to the tenderer or his authorized representative and each such addendum shall become part of the tender documents.

28.3 Right to Reject a Bid:

HOCL reserves the right to reject any bid due to reasons such as (a) Vendor not following above bidding procedures (b) Vendor not being technically acceptable to HOCL (c) Not enclosing EMD with the techno commercial bid or EMD paid being lesser than the stipulated amount (d) Vendor not agreeing with the general conditions of the tender. (e) Not enclosing any particular documents asked for (f) Any other valid reasons.

28.4 Signing & Stamping on all Pages of Bids:

The vendor shall sign and stamp on all the pages of the bids uploaded, failing which bids are liable to be rejected.

28.5 Agreement

The contractor has to execute an agreement with HOCL in the prescribed format on a non judicial stamp paper of ₹ 200/- in case of placement of work order.



28.6 General Information

- a. Incomplete offers will not be considered.
- b. **Fixed price:** Prices quoted by the bidder shall be firm and inclusive of but not limited to Supply, Erection & Commissioning, training, Supply of spares in Annexure XV -A and AMC of Process Air Compressor for Cumox Plant (K2501 D) and not subject to any escalation whatsoever during the period of bid validity and execution of the Purchase Order. A bid submitted with an adjustable price will be treated as non - responsive and rejected. Prices shall be written in words and figures. In the event of difference, the price in words shall be valid and binding. Unit prices shall be considered correct in the event of any discrepancy with regard to total price.
- c. Bid currency: Bidders should submit the prices only in Indian Rupees which should be clearly indicated in the un-priced commercial bid as well as in the price bid.
- d. Terms of Delivery: Bidders are required to quote their best delivery period but should not be later than 8 months. Delivery from the date of Letter of Intent to be mentioned in the offer.

Validity of bids shall be 6 (six) months from the final due date of opening of Techno - Commercial (Un-priced) Bids. For detailed specifications, terms and conditions and other details, refer complete Bidding Document.

Evaluation/ Ordering shall be done as defined in the Tender. All items of shall be ordered on one (1) bidder on overall L1 basis.

HOCL reserves the right to carryout capacity & capability assessment of the bidder using in-house information and past performance.

The bidders who are on Holiday/Negative list of OWNER or GOI or MOP & NG or other PSE on due date of submission of bid/ during the process of evaluation of the bids, the offers of such bidders shall not be considered for bid opening/evaluation/Award. If the bidding document were issued in advertently/downloaded from website, offers submitted by such bidders shall also be not considered for bid opening/evaluation/Award. In this regard, bidder shall submit an undertaking as per the format provided elsewhere in the bidding document.

A job executed by a bidder for its own plant/projects cannot be considered as experience for the purpose of meeting requirement of BQC of the tender. However, jobs executed for Subsidiary/Fellow subsidiary/Holding company will be considered as experience for the purpose of meeting BQC subject to submission of tax paid invoice(s) duly certified by Statutory auditor of the Bidder towards payments of statutory tax in support of the job executed for Subsidiary/Fellow subsidiary/Holding company. Such bidders shall submit these documents in addition to the documents specified in the bidding documents to meet BQC.

HOCL will not be responsible or liable for cost incurred in preparation & submission of bids, regardless of the conduct or outcome of the bidding process.

HOCL reserves the right to disqualify any bidder during the tendering process by evaluating their current financial conditions and performance in jobs under execution by them.



In case any Bidder is found to be involved in cartel formation, his Bid will not be considered for evaluation / placement of order. Such Bidder will also be debarred from bidding in future.

Canvassing in any form by the Bidder or by any other agency on their behalf may lead to disqualification of their Bid.

Unsolicited clarifications to the offer and / or change in the prices during the validity period would render the bid liable for rejection.

Bidder shall not be under liquidation, court receivership or similar proceeding. Bidder shall submit self-certificate in this regard.

Integrity Pact, duly signed & stamped on each page, shall be submitted with Techno-commercial bid, failing which the bid may not be considered for further evaluation.

Bids on Consortium or unincorporated Joint-Venture basis shall not be accepted.

HOCL reserves the right to reject any or all the bids received or annul the bidding process at any time without assigning any reason whatsoever.

HOCL reserves its right to allow Public Sector Enterprises (Central/State), purchase preference as admissible/applicable from time to time under the existing Indian Govt. policy and MSME bidders shall be allowed purchase preference as per **Public Procurement Policy, 2012**. Bidders are also allowed to avail the purchase preference linked with attaining the stipulated Local content as per provision mentioned in Bidding Document.

HOCL will evaluate the tender as per the provision in the policy for local content vide Government Order Manual for Procurement of Goods (Updated June, 2022)

Clarifications if any, can be obtained (on working days, between 09:30 Hrs to 17:00 Hrs IST) through: Telephone Nos: 0484 - 2727292 /09446741530 or through E-mail:beno.kurians@hoclindia.com.

Queries / Clarifications relating to the CPP portal / online bid submission process can be obtained from the 24 X 7 CPP Portal helpdesk at Contact No. 1800-3070-2232 or Mobile Nos.+91- 7503193242/ +91-7878007972/ + 91-7878007973

BENO P KURIANS
TECHNICAL ADVISOR



ANNEXURE -V

INSTRUCTIONS TO BIDDERS (ITB)

A. GENERAL

1. ELIGIBLE BIDDERS

- a. A bidder may be a firm or a company, who, have been issued the Enquiry / RFQ Document on Limited Competitive Basis.
- b. A bidder who is on Holiday/ Negative list of HOCL/Client/PMC on due date of submission of bid / during the process of evaluation of the bids, the offers of such bidders shall not be considered for bid opening/evaluation/award.
- c. The bidding is open only to the bidders to whom Enquiry Document has been issued.
- d. As Purchaser intends to contract directly with suppliers of the goods for which bids are invited, the bids should be prepared by the suppliers and submitted directly. Purchaser reserves the right to reject offers made by intermediaries.
- e. In case any bidder is found to be involved in cartel formation, his bid will not be considered for evaluation / placement of order. Such bidder will also be debarred from bidding in future.
- f. Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non consultancy services) or works (including turnkey projects) only if the bidder is registered with the competent authority vide Order No. F.No.6/18/2019-PPD dt. 23/07/2020 from Ministry of Finance Department of Expenditure, Public Procurement Division, Govt. of India.

2. FRAUDULENT PRACTICES

- a. The Owner requires that Bidders/ Vendors/ Supplier observe the highest standard of ethics during the award/ execution of Contract. "Fraudulent Practice" means a misrepresentation of facts in order to influence the award of a Contract to the detriment of the Owner, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the owner of the benefits of free and open competition.
- b. The Owner will reject a proposal for award if it determines that the bidder recommended for award has engaged in fraudulent practices in competing for the Contract in question. Bidder is required to furnish the complete and correct information/ documents required for evaluation of their bids. If the information/ documents forming basis of evaluation is found to be false/ forged, the same shall be considered adequate ground for rejection of bids.
- c. In case, the information/ document furnished by the Bidder/ Vendor/ Supplier forming basis of evaluation of his bid is found to be false/ forged after the award of the contract, Owner shall have full right to terminate the contract and get the remaining job executed at the risk & cost of such Bidder/ Vendor/ Supplier without any prejudice to other rights available to Owner under the contract such as forfeiture of Performance Security Deposit, withholding of payment etc.



- d. In case, this issue of submission of false documents comes to the notice after execution of supply/work, Owner shall have full right to forfeit any amount due to the Bidder/ Vendor/ Supplier along with forfeiture of CPBG furnished by the bidder/vendor/ Supplier.
- e. Further, such bidder/ vendor/ Supplier shall be put on Blacklist/ Holiday/ Negative List of owner debarring them from future business with Owner for a time period, as per the prevailing policy in HOCL.

B. CONTENTS OF ENQUIRY DOCUMENT

3. ENQUIRY DOCUMENT

- 3.1 The Enquiry Document shall in general consist of the following and should be read in conjunction with any amendment issued in accordance within the NIT.

1	General Instruction To Online Submission of Bidders
2	Definitions & Abbreviations
3	General Information To Bidders
4	General Terms And Conditions of Tender
5	Instructions to Bidders
6	General Terms and Conditions of Purchase
7	Technical Information and Scope of Work
8	Specification Sheet of Process Air Compressor
9	Annual Maintenance Contract
10	Price Schedule
11	Criteria For Bid Evaluation (Evaluation and Comparison of Bids)
12	Vendor Confirmation on Bid
13	Vendor's Confirmation on Specifications of Process Air Compressor
14	List of local indication required
15	Spares and consumables for operation and Service
16	No Deviation Statement
17	Bidders Proven Track Record
18	Letter of Authority
19	Details of Tenderer
20	Documents on Authority By CEO/CFO/Company Secretary
21	Authorization Affidavit
22	Tender Affirmment
23	Financial Details
24	Performance Certificate
25	Technical Compliance Statement
26	Checklist:(General Conditions)
27	Commercial Summary of Bid
28	Price Break-up
29	Any other document specified as per NIT - HOC/PROJ/K 2501 D/23



- 3.2 Although all the details presented in this Enquiry Document have been compiled with reasonable care, the bidder is expected to examine the Enquiry Document, including all instructions, forms, terms, specifications and drawings in the Enquiry Document and it includes all the documents as per Table of Contents. In case of any ambiguity or incompleteness, the bidder must bring it to the attention of HOCL immediately and prior to submission of Bid.
- 3.3 Enquiry Document once issued in case of limited competitive bidding is non-transferable.
- 3.4 Order of precedence

The documents forming the Purchase Order are to be taken as mutually explanatory of one another. If there is an ambiguity or discrepancy in the Term & Conditions defined in the various documents, the order of Precedence shall be as follows:

- a. Purchase Order and its enclosures along with Purchase Requisition
- b. Amendment to Bidding Document, if any
- c. RFQ letter along with Bid Data Sheet
- d. Job Specifications Drawings
- e. Special Purchase Conditions (SPC)
- f. Technical specifications
- g. Instructions to Bidders (ITB)
- h. General Purchase Conditions (GPC) & the GCC etc. as a part of this NIT.
- i. Any other document spelt in NIT.

A variation or amendment issued after the execution of the formal contract shall take precedence over respective clauses of the formal contract and its Annexure.

4. SITE VISIT

- a. For Scope involving Site Work, bidder, if required, may visit and examine the HOCL Site and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid. All costs towards the same including the cost of visiting the Site shall be at the bidder's own expense.
- b. Bidder and any of its personnel will be granted permission by HOCL to enter upon its premises for the purpose of such visit, but only upon the express condition that the bidder and its personnel will relieve and indemnify HOCL and its personnel from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection. Bidder shall refer BDS for schedule and contact details related to site visit.

5. CLARIFICATION OF ENQUIRY DOCUMENT

- a. The enquiry is issued on "Zero Deviation Bidding" basis wherein no post bid correspondence of any nature shall be entertained.
- b. No-deviation form/techno-commercial compliance shall be submitted by the bidders as part of their offer. No deviation shall be accepted and if any deviation is found in the bid of such bidder, their offer shall be liable to be rejected without raising any technical/ commercial queries.



6. AMENDMENT OF ENQUIRY DOCUMENT

- a. At any time prior to the deadline for submission of bids, HOCL may, for any reason whether at his own initiative or in response to the clarification requested by the prospective bidder(s), issue amendment in the form of Amendment/ Addendum.
- b. Any addendum issued shall be part of the Enquiry Documents and shall be uploaded on Tender portal.
- c. To give bidders reasonable time in which to take an addendum into account in preparing their bids, HOCL may extend the deadline for the submission of bids, pursuant to Clauses NIT.
- d. HOCL may also for any reason issue amendment subsequent to receiving the bids. Any amendment thus issued shall become part of Enquiry Document. Bidder shall follow the instructions issued along with Amendment with regard to submission of impact on quoted price / revised price, if any

7. ACKNOWLEDGEMENT & CONFIRMATION

- a. Within 3 days of downloading of Enquiry Document, bidder shall acknowledge and confirm his intention to bid for the requested item/work on HOCL website <http://tenders.HOCL.co.in>.
- b. Bidders should respond to this enquiry either by submitting their bids or by explaining the reason for non-submission of the offer. In case there is no response either way continuously, the bidder shall be liable even after attending pre-bid meeting.

C. PREPARATION OF BIDS

8. COST OF BIDDING

- a. Bidder shall bear all costs associated with the preparation and submission of its Bid and HOCL shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

9. LANGUAGE OF BID

- a. The Bid, as well as all correspondence and documents relating to the bid exchanged by the bidder and HOCL, shall be in the English language.

10. DOCUMENTS COMPRISING THE BID

Electronic Bids (e-bid) in two parts i.e. PART-I (Techno-commercial part) & PART-II (Priced part) as detailed below shall be submitted in e-tendering portal in accordance with the instructions and terms & conditions enclosed with the Enquiry Document.

PART - I -TECHNO-COMMERCIAL/ UNPRICED BID

- a. Offer Covering letter (in bidder's letter head)
- b. Techno-commercial compliance to the RFQ terms & Conditions.
- c. Salient Features of offer giving basic details on Despatch Point, taxes/ duties etc.



- d. Unpriced copy of Price Schedule (Excel file) (available in the RAR format which is uploaded on Tender portal) indicating 'Q' in place of price and 'NQ' for not quoted.
- e. Latest Complete Audited Annual Financial Year Report including auditor report, Balance Sheet, Profit & Loss Account Statement and all other schedules or Financial details duly filled in Financial details as per Proposal.
- f. Integrity Pact in accordance with NIT.
- g. Addendum / Amendment (if any) duly signed & stamped.
- h. Technical Compliance/ datasheets/ documents, required as per Material Requisition.
- i. Declaration by bidder regarding Black listing/ Holiday listing etc.
- j. Compliance to requirement of pan no., tax residency certificate and form no.10F as per relevant forms provided in Bidding Forms (applicable for foreign bidder in case of services in India is required as per scope of Enquiry Document);
- k. Any other document required as per Technical Specifications; and
- l. Any other document required as per NIT.

Note: The above shall be uploaded in "PREQUAL/ TECHNICAL" folder in e-tendering portal

PART-II (Priced Bid)

Containing only prices filled in the prescribed price schedule excel format and other formats provided in the RFQ Document, consisting of the following:

Prices in Price Schedule Format (BoQ) only as per Excel file available in the uploaded Tender portal.

The rate for each item in the **Annexure XV-B** shall be submitted on or before the due date in a separate sealed and stamped envelope to the following address. The same will be opened physically in presence of Technically qualified bidders as the price bid opening date. Bidders shall submit their offer for Spares and consumables in Annexure XV - B in one sealed envelope to the following address and super-scribed with Enquiry No., due date and Offer for Spares for servicing of Process Air Compressor for Cumox Plant (K2501 D) so as to reach on or before the due date of the bid submission

Address:

**Chief General Manager (HR/Engg.) & FM
Hindustan Organic Chemicals Limited
Ambalamugal
Kochi , Kerala - 682 302**

HOCL will place Purchase Order for the Spares and consumables in Annexure - XV - B only as and when required and under sole discretion of HOCL.



Note:

1. Part-II shall be uploaded in “FINANCE” folder in e-tendering portal
2. Deviation to terms & conditions, presumptions etc. shall not be stipulated in Priced part of bid and price bids shall not contains any stapled slips. In case of any conditions stipulated in price bid and bid containing any stapled slips, the bids of such bidders shall be summarily rejected and shall not be considered for further evaluation. Evaluation shall be carried out excluding such bidder(s).

11. INTEGRITY PACT

- a. Bidder shall submit, the scanned copy of the Integrity Pact duly signed and stamped in token of compliance, wherever required as per Bid Data Sheet. Non submission of Integrity pact shall lead to rejection of the bid. Copy of the Integrity Pact is provided in Bidding Forms.
- b. The detail of Independent External Monitors (IEMs), appointed by HOCL, in terms of Integrity Pact (IP) is specified in the BDS.

12. MULTIPLE/ALTERNATIVE BIDS

- a. A bidder (i.e., the bidding entity) shall, on no account submit more than one bid either directly (as a single bidder or as a member of consortium) or indirectly (as a subcontractor) failing which following actions shall be initiated: i) All bids submitted by such bidder (say ‘A’) directly or indirectly, shall stand rejected and EMD, if any, in case of direct bid submitted by bidder ‘A’ shall be forfeited.
- b. If another bidder (say ‘B’) has proposed bidder ‘A’ as a sub-contractor then bidder ‘B’’s bid shall also be rejected. However, in case the bidder ‘B’ has also proposed an alternative sub-contractor who is other than the bidder ‘A’, then bidder ‘B’’s bid shall be evaluated with the proposed alternative sub-contractor only. Hence, every bidder shall ensure in his own interest that his proposed sub-contractor is not submitting alternative/ multiple bids.

13. BID PRICES AND DISCOUNTS

- a. The prices must be quoted strictly in the format provided in the Enquiry Document. Conditional discount, if offered, shall not be considered for evaluation.
- b. Rates/ prices quoted by the bidder, shall remain firm, fixed and valid till the completion of the scope of supply/Works and will not be subject to variation on any account except as otherwise specifically provided in the Enquiry Documents.
- c. All duties, taxes, and other levies payable shall be as per Special Purchase Conditions.

14. CURRENCIES OF BID AND PAYMENT

- a. Bidder shall submit Bid in Indian Rupees and payment shall be made in Indian currency only.



15. DOCUMENTATION FOR MSME BIDDER

- a. MSME bidder shall submit the following:
 - i. Documentary evidence that the Bidder is a Micro or Small Enterprises registered with District Industries Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or Udyog Aadhar Memorandum or any other body specified by Ministry of Micro, Small and Medium Enterprises.
 - ii. If the MSME is owned by SC/ST Entrepreneurs, the bidder shall furnish appropriate documentary evidence in this regard.
- b. Definition of MSMEs owned by SC/ST Entrepreneurs shall be specified as follows:
 - i. In case of proprietary MSME, proprietor should be SC/ST.
 - ii. In case of partnership MSME, the SC/ST partner(s) should be holding at least 51% shares in the unit.
 - iii. In case of Private Limited Companies, at least 51% share shall be held by SC/ST promoters.
- c. In order for MSME owned by SC/ST Entrepreneurs to qualify for benefits available under Public Procurement Policy for MSMEs order 2012, the MSME shall additionally submit a relevant SC/ ST certificate in the name of SC/ ST proprietor or partner(s) holding minimum 51% shares in case of partnership or person(s) holding minimum 51% shares in Private limited companies, issued by any of the following:
 1. District Magistrate/ Additional District Magistrate/ Collector/ Deputy Commissioner/ Deputy Collector/ 1st Class Stipendiary Magistrate/ City Magistrate/ Sub-Divisional Magistrate/ Taluka Magistrate/ Executive Magistrate/ Extra Assistant Commissioner (not below the rank of 1st Class Stipendiary Magistrate).
 2. Chief Presidency Magistrate/ Additional Chief Presidency Magistrate/ Presidency Magistrate.
 3. Revenue Officers not below the rank of Tehsildar
 4. Sub-Divisional Officer of the area where the candidate and/ or his family normally resides.
 5. Administrator/ Secretary to Administrator/ Development Officer (Lakshdweep Islands)
- d. If the MSME bidder does not provide the appropriate document or any evidence to substantiate the above, then it will be presumed that he does not qualify for any preference admissible in the Public Procurement Policy, 2012.
- e. The scanned copy of the above shall be uploaded by the Bidder in e-tendering website and hard copies, certified in original, shall be submitted.



16. PERIOD OF VALIDITY OF BIDS

- a. Bids shall remain valid for the period of 180 days from the date of opening of the Techno Commercial Bid. A bid with shorter validity shall be rejected by HOCL as non-responsive. Bidders shall not be entitled during the above period, without the consent of HOCL in writing, to revoke or cancel their Bid or to vary the Bid given or any term thereof. In case of bidders revoking or cancelling their Bid or varying any terms in regard thereof without the consent of HOCL in writing, HOCL shall reject their bids. Such Bidder may also be put on Holiday list/ Negative List.
- b. In exceptional circumstances, prior to the expiration of the bid validity period, HOCL may request bidders to extend the period of validity of their bids. The request and the responses shall be made in writing or e-mail. A bidder may refuse the request after which their offer will not be considered for further evaluation. A bidder granting the request shall not be permitted to modify its bid.

17. FORMAT AND SIGNING OF BID

- a. The e-bid shall be uploaded duly digitally signed (e-signed) using the digital signature of a person duly authorized to sign on behalf of the bidder. The digital signature used for signing the bid shall be issued in the name of such authorized person and the certificate details, available from the signed documents, should indicate the details of the signatories.

D. SUBMISSION AND OPENING OF BIDS

18. SEALING AND MARKING OF BIDS

- a. Bidders shall submit bids (Part-I & Part-II) electronically and shall follow the electronic bid submission procedures enclosed.
- b. Documents pertaining to avail Preference for MSMEs as per BDS, must be received by HOCL in original, at the address specified in the BDS.

19. DEADLINE FOR SUBMISSION OF BIDS

- a. Bidders shall submit their bids electronically in the e-tendering portal, NIC or GeM Portal, within the date and time specified in the BDS. Bidders submitting bids electronically shall follow the electronic bid submission procedures enclosed to this NIT.
- b. HOCL may, at its discretion, extend the deadline for the submission of bids by amending the Enquiry Documents in accordance with Clause of ITB, in which case all rights and obligations of HOCL and bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

20. LATE BIDS

- a. E-tendering system shall be close immediately for submission of bid, after the deadline for submission of bid. Any bids being submitted in physical form shall not be considered for opening / evaluation / award.



21. WITHDRAWAL, SUBSTITUTION, AND MODIFICATION OF BIDS

- a. The bidder may modify, re-submit or withdraw its e-bid after the bid submission, but, before the due date and time for submission of Bid following the electronic bid submission procedures.
- b. No bid shall be withdrawn, substituted, or modified till the expiration of the period of bid validity or any extension thereof.

22. BID OPENING

- a. HOCL shall open all bids received in the e-tendering portal except bidders who are on holiday/negative list.
- b. The order of part wise opening of bids shall be as follows;
 - i. On scheduled date and time of UNPRICED bid opening,
 - a. Opening of documents of part-I, submitted in electronic form shall be processed on the e-Procurement module of the e-tendering portal.
 - b. The bidders who have submitted their bid will be able to view online the name & status of all the bidders at their respective windows, after un-priced bid opening by HOCL.
 - ii. Part-II of bid of only those bidders whose bids is determined to be technically and commercially acceptable by HOCL shall be opened. Bidders selected for opening of their priced bids shall be informed about the date, time and place of price bid opening. Aforesaid Bidders, will be able to view online the price sheets of other techno commercially acceptable bidders at their respective windows, after priced bid opening by HOCL.

E. EVALUATION AND COMPARISON OF BIDS

23. CONFIDENTIALITY

- a. A bidder may seek clarification regarding the Enquiry Document provisions, bidding process and / or rejection of his bid. HOCL shall respond to such requests within a reasonable time. However, such information relating to the evaluation of bids and recommendation of award shall not be disclosed to any other persons not officially concerned with the bidding process.
- b. Any attempt by a bidder to influence HOCL in the evaluation of the bids or award decisions shall render their Bid liable for rejection.
- c. Notwithstanding from the time of bid opening to the time of placement of order, if a bidder wishes to contact HOCL on any matter related to the bidding process, it shall done so in writing only.

24. ZERO DEVIATION



- a. Bid shall be submitted as “Zero deviation Basis”. Accordingly offer is to be submitted in complete compliance to RFQ Terms & Conditions without any deviation. Offer with deviation shall be liable for rejection without any further correspondence. In view of this Bidder shall ensure submission of complete bid without any deviation as per requirement of Enquiry document in first instance itself.

25. DETERMINATION OF RESPONSIVENESS

- a. HOCL’s determination of a bid’s responsiveness is to be based on the contents of the bid itself.
- b. A substantially responsive bid is one that meets the requirements of the Enquiry Documents without deviation.
- c. Bidder should not be under liquidation, court receivership or similar proceedings. Bidder shall submit self-certificate in this regard.

Bidder who is found to be under court receivership or similar proceeding as per above declaration, then their offer shall not be considered for further evaluation.

26. CLARIFICATION OF BIDS

- a. Bidders should ensure that the Bid submitted is substantially responsive Bid in the first instance itself. Evaluation may be completed based on the content of the Bid itself without seeking any subsequent additional information which may result in rejection of Bid. However, HOCL may, at its discretion, may request bidder to submit the necessary information or documentation, within a reasonable period of time, to withdraw deviation, reservation, or rectify omission in the bid related to documentation requirements. Requesting information or documentation on such account shall not be related to any aspect of the price of the Bid. HOCL’s request for clarification and the response shall be in writing.
- b. No change, including any voluntary increase or decrease, in the prices or substance of the bid shall be sought, offered, or permitted. Bidder shall not be allowed to submit any price implication or revised price after submission of Bid unless the same is called for by HOCL in writing.
- c. Any clarification submitted by a bidder that is not in response to a request by HOCL shall not be considered. Failure of the bidder to comply with the request may result in the rejection of its Bid.
- d. If a bidder does not provide clarifications of its bid by the date and time set in HOCL’s request for clarification, its bid shall be evaluated with available information which may result in rejection of their bid.

27. EVALUATION OF TECHNO-COMMERCIAL BIDS

- a. Prior to price opening of bids, HOCL will determine whether each bid is accompanied with requisite documents;
 - i. Fulfils the technical, financial and other requirements as specified in the Enquiry Document;
 - ii. Bid’s responsiveness, in accordance with Clauses in NIT;



- iii. Any other relevant factor, if any that HOCL deems necessary or prudent to be taken into consideration.
- b. HOCL reserves the right to use in-house information for assessment of capability of bidder and their performance on jobs completed/ in progress for evaluation purpose.
- c. Bidders who are enlisted with HOCL are required to quote as per their capabilities registered with HOCL.

28. PREFERENCE TO MICRO OR SMALL ENTERPRISES

- a. Preference, if applicable to MSMEs, shall be as per BDS.
- b. In RFQs, participating Micro and Small Enterprises having evaluated price within price band of L1 (evaluated price) + 15% shall also be allowed to supply a portion of requirement by bringing down their prices to L1 (evaluated) price in a situation where L1 price is from someone other than a micro and small enterprises and such micro and small enterprises shall be allowed to supply up to 20% of the total tendered value. In case of more than one such Micro and Small Enterprises, the supply shall be shared proportionately (to tendered quantity). Further, out of above 20%, 4% (20% of 20%) shall be from MSMEs owned by SC/ST entrepreneurs. This quota is to be transferred to other MSMEs in case of non-availability of MSMEs owned by SC/ST entrepreneurs. It is clarified that in case, 20% quantity works out to a fraction of quantity, MSMEs shall be considered for next higher quantity. Accordingly, the quoted prices against various items of MR shall remain valid in case of splitting of quantities of the items in view of the same. However, in case where quantity against a line item cannot be split (i.e. minimum 20% to MSMEs) or items with single quantity or in group item, the complete line item/group shall be awarded on MSME bidder within the price range of L1 bidder's evaluated price+15% subject to their matching L1 bidder's price. First, the MSME bidder next to the price of L1 Bidder shall be considered for price preference. In case that MSME bidder, does not match the price, next MSME bidder (within the price range of L1 Bidder + 15%) shall be considered for matching the L1 Bidder prices and so on. Accordingly, the MSME bidder who matches the price of L1 Bidder, shall be considered for award of contract.
- c. Above preference to MSMEs shall not be applicable to MRs where Site Work is also included in the scope.
- d. For facilitating promotion and development of micro and small enterprises, HOCL is committed to promote the procurement of supplies/ services from MSMEs in Orders/ contracts awarded by HOCL. Accordingly, bidders are also encouraged to promote the same by considering MSME sub-suppliers/Contractors to the extent possible under the Orders/ Contracts awarded on them by HOCL. After award of item/work, Supplier/Contractor shall furnish a statement along with copies of orders/ FOAs placed by them on their sub suppliers/ sub-Supplier/Contractors who are MSMEs, to HOCL Project Manager/ RCM, as applicable.

29. PROVISION REGARDING POLICY TO PROVIDE PURCHASE PREFERENCE (LINKED WITH LOCAL CONTENT) (PP-LC):

HOCL will evaluate the tender as per the provision in the policy for local content vide Government Order Manual for Procurement of Goods (Updated June, 2022)



30. OPENING OF PRICE BID

- a. Priced Bid (Part-II) of only those bidders whose bids is determined to be technically and commercially acceptable by HOCL shall be opened. Bidders selected for opening of their priced bids shall be informed about the date, time and place of price bid opening.

31. CORRECTION OF ARITHMETICAL ERRORS

- a. HOCL shall correct arithmetical errors on the following basis:

The prices quoted by bidders shall be checked for arithmetic correction, if any, based on rate and amount filled by the bidder in the price schedule formats. If some discrepancies are found between the Unit rate and Total amount, the total amount shall be corrected as per the following procedure, which shall be binding upon the bidder:

Where there is a discrepancy between the unit rate of line Item and total amount of the line item resulting from multiplying the unit rate by the quantity, the unit rate as quoted shall prevail and the total amount shall be corrected.

- b. Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB, shall result in the rejection of the Bid.

32. EVALUATION AND COMPARISON OF PRICE BIDS

- a. HOCL shall compare the price bids based on the evaluation methodology and loading criteria, provided in NIT to determine the lowest evaluated bid.
- b. Conditional discount, if offered, shall not be considered for evaluation. However the same shall be considered for ordering.
- c. Any uncalled for lump-sum/ percentage or adhoc reduction/ increase in prices, offered by the Bidders after opening of the prices, shall not be considered. However, if reduction is from the L1 Bidder, such reduction shall be taken into account for arriving at the order value and not for evaluation purpose.
- d. SHIFTING OF ORDER

Based on the lowest evaluated item wise prices out of the techno-commercial acceptable bidders, the shifting of order shall not be carried out.

- e. Preference to MSMEs & PP-LC, if applicable as per NIT, shall be carried out by HOCL.
- f. HOCL will evaluate the tender as per the provision in the policy for local content vide Government Order Manual for Procurement of Goods (Updated June, 2022)

33. HOCL'S RIGHT TO ACCEPT ANY BID, AND TO REJECT ANY OR ALL BIDS

- a. HOCL reserves the right to accept or reject any or all the bids at his discretion and may annul the Bidding process, without thereby incurring any liability to bidders.



F. AWARD OF CONTRACT

34. AWARD CRITERIA

- a. HOCL shall place Purchase order to the bidder(s) who has (have) been determined to be the lowest successful bidder, if in the opinion of HOCL, the total price or certain item rates quoted by the lowest evaluated bidder are considered high, HOCL may invite such bidder for price negotiation. Lowest quoted bidder shall attend such negotiation meetings and if requested by HOCL shall provide the analysis of rates/break-up of amount quoted by him for any or all items of Price Schedule Format to demonstrate the reasonability. As a result of negotiation, bidder may offer rebate on his earlier quoted Price(s).

35. NOTIFICATION OF AWARD

- a. Prior to the expiration of the period of bid validity, the HOCL shall notify the successful bidder, in writing, that its bid has been accepted. The notification letter [hereinafter and in Letter of Intent (LOI)/ Purchase Order (PO)] shall specify the sum that the HOCL will pay the Supplier in consideration of the execution and completion of the Supply/Works. The notification letter will constitute the formation of the contract.

36. CONTRACT PERFORMANCE BANK GUARANTEE/ PERFORMANCE SECURITY DEPOSIT

From the date of issue of notification of award from HOCL, the successful bidder shall comply with the requirement of Performance Bank Guarantee / Security of the contract as mentioned below:

- a. Performance security for supply, erection and commissioning of the compressor shall be 10% of contract value of supply, erection and commissioning of the compressor. It shall be furnished within 21 days after notification of award and the same will be released after warrantee period and on submission of Performance Security of AMC contract.
- b. Performance Security for AMC contract shall be 10% of the AMC contract value and it shall be submitted within 21 days before expiring warrantee period and it shall be released after 60 days from the date of completion of AMC contract.
- c. Failure of the successful bidder to submit the above-mentioned Performance Security shall constitute sufficient grounds for the annulment of the award.

37. List of document submitted along with Technical bid is tabulated and enclosed.



LIST OF DOCUMENTS TO BE ENCLOSED IN TECHNICAL BID - PART I

Sl. No.	Document	Annexure No.	Whether Submitted (Yes/No)
1	Complete set of Tender Document duly filled in and signed by the Tenderer as prescribed in different clauses of the Tender Document		
2	GCC duly filled in the relevant portions, signed and stamped all the pages by the tenderer (The tenderers have to download the GCC)		
3	Information regarding tenderer	ANNEXURE XIX	
4	Details of work of similar type and magnitude carried out by the tenderer		
5	In the case of MSME, necessary certificate shall be submitted in the Technical Bid.		
6	Organogram of the bidder		
7	Details of current commitments of Tenderer.		
8	Exceptions and deviations, if any, with reference to the Clause No. and page No. of Tender shall be submitted as a separate statement (Deviation Statement). But its acceptance is purely under the discretion of HOCL.	ANNEXURE XVI	
9	A tentative programme for the execution and completion of work within the time specified.		
10	Average annual financial turnover of the bidder during the last 03 years ending 31st March 2023 (Details of annual financial turnover to be submitted with Documentary proof).	ANNEXURE - XXIII	
11	Experience of having successfully completed similar works during the last 5 years ending 31st March 2023 as per Annexure - IV		
12	Proforma of Declaration of Black Listing/ Holiday Listing (Annexure - D)	ANNEXURE - D	
13	Bidder Information (Annexure - E)	ANNEXURE - E	
14	Self Declaration (Annexure - F)	ANNEXURE - F	
15	Instructions For Execution Of The Integrity Pact (ANNEXURE - K)	ANNEXURE - K	
16	Declaration on Code of Integrity for Public Procurement (COIPP) (ANNEXURE - L)	ANNEXURE - L	
17	Point by point confirmation for the Technical Specification enclosed in NIT	ANNEXURE XIII	
18	List of customers to whom same or similar equipment have been supplied along with performance certificates.		
19	Spares and Consumables for operation and maintenance as per the attached list. (Annexure - XV - A)	ANNEXURE - XV - A	
	List of spare parts (with part numbers & price) for operation / maintenance/AMC as per the attached list. (Annexure - XV - B)	ANNEXURE - XV - B	
20	Information on shipping weight and cubage (length, width & height)		



21	Scope/activity matrix between the bidder and principal shall be submitted to HOCL (if applicable).		
22	Confirmation that bidder shall have Manufacturing, Assembly and testing and servicing facility for the proposed scope in India		
27	Documents for establishing the bidder as a subsidiary of the Principle (if applicable).		
23	Duly completed Bidder Proven Track Record Pro-forma as enclosed with the bid document, together with all back-up documents specified therein.	ANNEXURE - XVII	
24	Certificate from Owner / PMC in bidder's Letter Head towards operation for a minimum period of one year. "The referenced Model of the proposed item/s has been in operation for a minimum period of one year as on bid due date."		
25	General Reference List for the proposed equipment.		
26	Latest Product Catalogues of the manufacturer for the proposed equipment.		
28	Corporate Guarantee Firm (in the format provided in Bidding document)		
29	Compliance statement on bidder's letter head for guarantee/warranty period of 24 months from the date of acceptance after guarantee run.		
30	Compliance statement on bidder's letter head to furnish Performance Security deposit for an amount equivalent to 10% of Order value		
31	Authentication of the bid as per Annexure - XVIII, XX, XXI and XXII.		
32	Vendor Confirmation on Bid (ANNEXURE -XII)	ANNEXURE -XII	
34	List of Local Indications required (ANNEXURE -XIV)	ANNEXURE -XIV	
37	Certificate in Bidder Letter head saying that they are not under liquidation, court receivership or similar proceeding. Bidder shall submit self-certificate in this regard.		
38	Life cycle cost analysis for 10 years		
39	P&I diagram showing all equipment, pipes, valves, pipe size, material of construction and pipe schedule/rating, insulation, instrumentation and control arrangement with clear demarcation of battery limit of supply (between vendor & HOCL).		
40	Complete list of equipment, instruments, etc. included in the scope of supply offered by Vendor, along with the specification and materials of construction. Bidder to submit relevant references along with proven performance record of the model offered indicating delivered flow, discharge pressure, motor rating and specific consumption.		
41	Compressor performance curves in detail.		
42	Delivery schedule		
43	List of proposed suppliers (sub-vendors) for major		



	bought out item. Owner reserves the right for rejection of any sub-vendor. Owner's approval shall be obtained for any inclusion of new vendor before the order.		
44	Layout of the unit including floor area and basic data for foundation required for Centrifugal Air Compressor		
45	Net guaranteed power consumption of air-compressor at rated capacity and 20% turn down, requirement of utilities, instrument air, control power, etc. The bidder shall furnish the guaranteed values for Shaft KW of compressor including all losses with zero percent positive tolerance including errors in instruments and measurements at the guaranteed (certified) point specified in the compressor data sheet.		
46	Description of the offered compressor model, description of control system, Anti-surge control system and interlocks		
47	Guarantees - The compressor package should deliver the guaranteed performance as per the technical specification given in Annexure -VIII		
48	Split of parts/items of the compressor supplied by their principal and the packager (if any).		
49	Procedure for Inspection offered at principle works and at packager's works		
50	Basis of calculation for the compressor capacity with conversion of NM ³ /hr with specified inlet condition of pressure temperature and RH given in specification sheet.		
51	List of recommended spares other than Annexure XV - A & Annexure XV - B		
52	The Inspection Test Plan and GTR procedure for supply of integrally gear type centrifugal air compressor package considering all the required tests as per the tender requirement.		
53	Duration for erection & commissioning		
54	Letter of Authority - To attend pre-bid meeting and subsequent Negotiation and Conferences (ANNEXURE -XVIII)	ANNEXURE -XVIII	
55	Details of Tenderer(ANNEXURE -XIX)	ANNEXURE -XIX	
56	Documents on Authority By CEO/CFO/Company Secretary(ANNEXURE -XX)	ANNEXURE -XX	
57	Authorization Affidavit (ANNEXURE -XXI)	ANNEXURE -XXI	
58	Tender Affirmation (ANNEXURE -XXII)	ANNEXURE -XXII	
59	Financial Details (ANNEXURE -XXIII)	ANNEXURE -XXIII	
60	Performance Certificate (ANNEXURE -XXIV)	ANNEXURE -XXIV	
61	Technical Compliance Statement (ANNEXURE -XXV)	ANNEXURE -XXV	
62	Checklist: (General Conditions) (ANNEXURE -XXVI)	ANNEXURE -XXVI	
63	Commercial Summary of Bid (ANNEXURE -XXVII)	ANNEXURE -XXVII	
64	Format for Corporate Guarantee	ANNEXURE - XVIII	
65	ESI, PF, Labour Law etc. – Requirements	ANNEXURE - A	



	(Annexure - A)		
66	Labour Laws (Annexure - B)	ANNEXURE - B	
67	Safety, Health & Environment (SHE) Conditions (Annexure - C)	ANNEXURE - C	
68	Bid Security Declaration (Annexure - H)	ANNEXURE - H	
69	Declaration of Compliance of Order (Public Procurement No.1, 2 & 3) dt. 23 Jul 2020 & 24 Jul 2020 on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017 (Annexure - R)	ANNEXURE -R	
70	Instructions to the Contractors for use of Vehicles (Annexure - S)	ANNEXURE -S	
71	Price break-up	ANNEXURE - X - A	
72	Any other documents as specified in the tender HOCL/Proj/K2501D/23 (R)		



ANNEXURE -VI

GENERAL TERMS AND CONDITIONS OF PURCHASE

1. **Acceptance of Purchase Order**

Supplier shall furnish to HOCL, an unconditional acceptance of the Purchase Order and Performance Security Deposit. Purchase Order is expressly conditioned on Supplier's acceptance of all the terms and conditions hereof. The Supplier shall return one copy of the order duly signed and accepted within 7 days of the receipt of the Purchase Order by him. Performance Security Deposit shall be submitted within 21 days of PO acceptance.

2. **Deviations**

This Order shall be subject to these General terms and conditions and any additional/ Specific conditions referred to in the order, and no deviation shall be made from the requirements of the Order or from the General Terms and conditions unless such deviations are approved in writing by the Owner.

3. **Assignment and Subletting**

Except with the prior permission of the Owner, the supplier shall not assign or sublet this Order or any part thereof or any money due hereunder to any other manufacturer/Vendor. Such permission if granted by the Owner will not, in any way relieve the contractual obligations of the Supplier on whom the order has been placed.

4. **Bank Guarantee for Performance**

The Supplier shall furnish a Bank Guarantee for Performance of value of 10% (Ten percent) of total order value (excluding taxes) for the due and faithful performance of the Purchase Order and Guarantee parameter as defined in the NIT. Bank Guarantee for Performance shall be issued by Nationalized / Scheduled Bank (other than Gramin / Co-operative Scheduled / Co-operative Bank), or any Indian Branch of Foreign Bank valid up to the date of the expiry of Guarantee Period plus a claim period of Six Months thereafter. The supplier shall submit the BG within twenty one days of issuance of the LOI/PO. In case of any default on the part of the supplier, in terms of the Purchase Order, the Bank guarantee for Performance shall be encashed. The Bank Guarantee for Performance will be released only after the completion of Guarantee Period and on recommendation of the Executing Department in the format attached.

5. **Supplier's Guarantee**

All the materials supplied, should be guaranteed for a minimum period of 24 months from the date of commissioning, GTR and acceptance of compressor package at HOCL, Kochi. This guarantee should protect the supplied items against faulty / defective materials, design and workmanship to meet the technical specifications and other conditions stipulated in NIT HOCL/Proj/K 2501 D/23 (R).



6. Damages

For Delay in Supply

If for reasons not attributable to the Owner or due to conditions constituting Force Majeure, as defined in this Purchase Order, the supply of equipment, and/or materials is not completed in accordance with the provisions hereof and in accordance with the delivery period as indicated in the body of the Purchase Order, it is agreed that the Owner shall be entitled to and the Supplier shall pay to the Owner the following as mutually agreed damages, which are a genuine pre-estimate made by the parties of the loss and damages which the Owner would have suffered on account of such delay in delivery and as by way of mutually determined reasonable compensation to the Owner therefore after taking into consideration all circumstances and not as liquidated damages or penalty and without the Owner being required to establish and prove the actual loss/ damage suffered by the Owner on account of such delay

a. The pre-estimated mutually agreed damages pursuant thereto shall be payable at the rate of 0.5% (one percent) per week or part thereof subject to maximum 5% (Five percent) of total order value.

b. For the purpose of sub-clause (a) above.

The Purchase Order Value shall include all contingencies and escalations, if any, payable by the Owner to the Supplier hereunder and

c. Save and except as provided in this Purchase Order and subject to the provisions of sub-clause and without prejudice to the right of the Purchase Order and its entitlement to the said pre-estimated mutually agreed damages and in addition and not in derogation or substitution thereof the purchaser shall be entitled to terminate the Purchase Order in whole or in part without being liable to the seller in any manner whatsoever or to have the undelivered portion of the equipment and / or materials to be supplied pursuant hereto by seller supplied and delivered at the risk and cost of the seller and without being liable to the seller in any manner whatsoever if at the end of despite 30 (thirty) days notice in writing the seller fails to deliver all or any part of the equipments and or materials to be supplied pursuant hereto by the seller within and in accordance with the delivery schedule, (the time for completion) including such extended period as may have been allowed by the purchaser.

d. Save and except as provided in this contract and subject to the provisions of clauses below and without prejudice to the purchaser right of termination hereunder, the pre-estimated mutually agreed damages payable pursuant to this article shall constitute the sole and exclusive remedy of the purchaser for the Seller's delay/failure to deliver the goods, complete/execute/perform the work or to meet the guarantees of output given hereunder by the Seller for reasons other than those attributable to the purchaser or due to conditions constituting force majeure as defined in this contract.

e. Notwithstanding anything to the contrary contained in this contract and without prejudice to the rights of the purchaser under this contract and its entitlement to the said pre-estimated mutually agreed damages and in addition and not in derogation or substitution thereof the purchaser shall be entitled to terminate this contract in whole or in part without being liable to the, Seller in any manner whatsoever or to have the undelivered portion of the goods supplied and delivered, unexpected/delayed portion of the work to be completed/executive/performed or to have the defect or deficiency resulting in or because of which there is shortfall in daily/hourly output of the product, all at the risk and cost of the Seller and without being liable to the Seller in any manner whatsoever in the event of and despite 30 (thirty) days notice in writing the Seller failing to supply/delivery/complete execute/perform/remedy/rectify all or any part of the same.



Damages in Shortfall in Performance Guarantee:

Following damages / penalties shall be applicable in case of short fall in performance observed during GTR:

Compressor

Negative tolerances are not accepted for flow, pressure and discharge capacity. Sound level shall not exceed 90dB measured at the distance of 1 Mtr from the compressor without sound-proof enclosure during performance test at HOCL, Kochi.

Motor

Deviation in guaranteed motor power performance during GTR at HOCL site, upto 1% is permitted. (Relaxation given to compensate the overall accuracy of the instruments.)

Sl. No	Shortfall from guaranteed power consumption	
1	Upto 2%	1% of contract value
2	Beyond 2% upto 3%	5% of contract value
3	Beyond 3% upto 6%	10% of contract value
4	Beyond 6%	Make good

Make Good Clause

If short fall beyond 6% is observed in anyone parameter the entire supply shall be treated as rejected and make good clause shall be applicable.

7. Payment Terms

As per Annexure - X - A

The payment shall be made to the supplier through Electronic Fund Transfer (EFT) wherever feasible. For making "EFT Payment"(Electronic Fund Transfer), following Bank A/C details may be furnished:

BankName :
IFSCCode :
Address :
MICR No. :
Title of A/C :
E Mail :
A/C No. :
Mobile No. :

- **Bank Charges**

Bidder's bank charges to Bidder's account & HOCL's bank charges to HOCL's account.

8. Mode of Despatch

Vendors will dispatch the material by road/rail/ship and the dispatch documents along with a copy of the invoice will be mailed directly to the Owner for the attention of the authority signing the order.



9. Inspection

The Purchase Order specifically requires Owner's inspection/third party inspection agency duly appointed by HOCL, the Supplier shall advise the Owner in writing at least 8 days in advance of the date when the materials will be ready for inspection. However the Inspection or its being dispensed with by the Owner or TPI will in no manner absolve the Supplier of his responsibility of performance, quality and workmanship of the materials covered under the order.

10. Patent Rights

The Supplier shall fully indemnify the Owner, its customers and users, against any action, claim or demand, costs of expenses, arising from or incurred by reason of any infringement or alleged infringement of letters, patent, trade mark or name, copyright or other protected rights in respect of any materials supplied. All royalties and the like payment shall be the liability of and be paid directly by the Supplier.

11. Specifications

All materials or equipments shall be supplied strictly in accordance with the specifications; drawings data sheets other attachments and conditions stated on the order. No deviations from such specifications or alterations of these conditions shall be made without the Owner's agreement in writing, which must be obtained before material is placed on manufacture, or any work commenced.

12. Taxes, Duties etc.

Unless otherwise specified in the Purchase Order, all taxes, duties and octroi will be borne by the Vendor/Supplier. TDS shall be deducted from the invoice of supplier for services / manpower deployment.

The bidder has to ensure to upload GST invoice on the GST portal, while filing the GSTR within the prescribed time limit.

If bidder fails to do the so without assigning any reason, the owner has the right to claim the GST paid or the same can be recovered from the subsequent bill or any amount liable to pay by owner from the bidder.

13. Transit Risk Insurance

Transit risk insurance from the Supplier's workshop or place up to the time of delivery to the owner shall be comprehensively covered by the supplier.

14. Correspondence

All correspondence concerning the Order shall state the Order Number and shall be addressed to

Mr. Beno P Kurians
Technical Advisor
Hindustan Organic Chemicals Limited
Ambalamugal, Ernakulam - 682 302
Ph No. +91-9446741530/7025510002
Email: beno.kurians@hoclindia.com



15. Documentation

Documentation shall be submitted as called for in the NIT.

16. Origin and Test Certificate

The Supplier will supply copies of Test Certificates for materials and equipments as called for in the order. Such certificate shall clearly state the Owner Order Number, Item and Equipment Number. All items to be supplied should be accompanied with manufacturer' test report/ test certificate and inspection certificate.

17. Fixed PRICE

All prices shall be fixed for the duration of the order including the period of any extension thereof and shall not be subject to escalation of any description during the said duration, including any extension thereof notwithstanding any change in the cost of materials and / or labour, which may take place while the order is being executed, even though it might be necessary for the Supplier for any reason whatsoever to take longer delivery periods than indicated in the order.

18. Packing and Despatch

Export suited packing is to be provided by the supplier. In case of air-freighted consignment, suitable packing is to be provided. Packing should be as per international standard rules and regulations. The packing should have all required markings such as name and address of consignee and consignor, purchase order number, gross/net weight, total number of packages, type of storage, warning marks (fragile, top, Keep dry etc). Any damage due to faulty packing shall be to the accounts of Supplier. Supplier is to note that a proper packing and marking will prevent rough and incorrect handling. In case of over-dimension consignment, Supplier will furnish shipping diagram prior to shipment, indicating length-width- weight. It will also indicate centre of gravity and location of Sling mark for lifting points. All packing, boxing, crating and protection shall conform to the specifications or requirements of the order. The Supplier shall be held liable for damage or breakage to the goods due to defective or insufficient packaging. Marking as specifically advised in the Order or Dispatch Instruction shall be done by Supplier in indelible paint and in such manner to ensure that the same is clearly visible.

Prior to shipment, all the surfaces will be cleaned of debris and dirt. Protection from water & water vapour shall be provided by the Supplier. Anti-corrosive treatment shall also be applied, wherever required.

19. Despatch/Delivery

On shipment of the material covered under the purchase order, Supplier shall immediately inform by email, the shipment details to HOCL and your Insurance Company. All goods shall be dispatched by rail/road/Sea/air and the Railway Receipt / Lorry Receipt / Air Consignment note/ Bill of lading shall be posted to the concerned authority as detailed in the order. All local deliveries shall be made to the Consignee for his order at Owner's office / factory site / city go-down etc. as detailed in the order.

20. Shipping/Despatch Documents/ Invoices

The Shipping/ dispatch documents will consist of

- Chalan (3copies)
- Packing list (3 Copies)
- Test Certificates (3Copies)
- Invoice (3copies)
- Railway/ Lorry Receipt in Original (4copies)
- Guarantee Certificate



21. Force Majeure

Neither party here to shall be responsible for any delay or failure to perform any or all of the obligations imposed upon such part caused by Force Majeure. Force Majeure, shall mean events outside the control of the Party which impede the performance of obligations of the party and includes, but is not limited to the following:

- Any war or hostilities
- Any riot or civil commotion;
- Any earthquake, flood, tempest, lightning or other natural physical disaster, act of god, impossibility of the use of any Railway, Port, Airport, Shipping services or other means of transport;
- Any official strike or lock-out (only those exceeding 10 continuous days in duration) affecting the performance of SUPPLIER's/ Owner's obligations.

In such case, the time for performance of such obligations and the obligations of the other party to the extent that they are directly affected by such occurrence will be extended by a period equal to that duly justified. Notification of circumstances of Force Majeure shall be given by email within Three (3) working days of its occurrence. This email shall be confirmed by a letter dispatched within one (1) week along with a certificate of the circumstance of the Force Majeure. However, should such a delay, even if due to reasons of Force Majeure, be protracted for more than Three (3) months, the parties shall meet and mutually agree on the path forward.

22. Governing Law and Jurisdiction

The Purchase Order would be deemed to have been issued by the Owner and accepted by the Supplier in India at Ambalamugal and therefore, shall be under the jurisdiction of the competent Court at Kochi, Kerala, India. All actions at law or suits arising out of, or in connection with this order or the subject matter thereof and whether as to construction or otherwise shall be instituted in a count of competent jurisdiction in Kochi, India under law of India.

23. Resolution of Disputes/ Arbitration

The owner and supplier shall make every effort to resolve amicably by direct informal negotiations any difference or dispute arising between them under or in connection with the Purchase Order.

If after thirty (30) days from the commencement of such informal negotiations, the owner and supplier have been unable to resolve amicably the dispute. Either party may require that the dispute be referred for resolution to the formal mechanisms as specified hereunder.

24. Arbitration

All disputes, differences, questions and claims arising of or under or touching this Agreement that may arise at any time between the parties hereto shall be settled amicably between the parties through mutual discussion and failing that, such disputes, difference, questions or claims shall be referred to arbitration of a sole arbitrator to be appointed by the Chairman-cum-Managing Director of Purchaser and the award



passed by the Arbitrator shall be final and binding on the parties. The seat of the arbitration shall be at Kochi and the proceedings of the arbitration shall be held at Kochi in accordance with **the Indian Arbitration and Conciliation Act 1996** or any statutory modification or re-enactment of the same for the time being in force.

25. Default

In the event of any default of supplier to comply with any of the provisions or requirements hereof, Owner shall have the right to terminate and cancel purchase order with or without notice and without prejudice to any other rights, elections, or remedies Owner may have and Owner shall be relieved from any further obligations to supplier hereunder. In the event of such cancellation of purchase order, Owner shall be entitled to arrange for the procurement of equipment, materials and services from alternate suppliers at the risk and cost of the supplier. The waiver of one default shall not be considered and automatic waiver of any other default.

26. Termination of Contract

26.1 Termination for Default

26.1.1. The owner may without prejudice to any other remedy for breach of Contract terms & conditions, by written notice of default send to the supplier, terminate / cancel the Contract in whole or in part:

- a. If the Supplier fails to complete any or all the jobs within the time period (s) specified in the Contract, or
- b. If the Supplier fails to perform any other obligation (s) under the Contract.
- c. If supplier, in either of the above circumstances does not rectify his failure within a period of 30 days (or such longer period as the owner may authorize in writing) after receipt of the default notice from the owner.

26.1.2. In the event the owner terminates the Contract in whole or in part, pursuant to clause in NIT the Owner may procure, upon such terms and in such manner as it deems appropriate Goods similar to those undelivered and the Supplier shall be liable to the Owner for any excess costs for such similar Goods. However, the supplier shall continue performance of the Contract to the extent not terminated.

26.2 Termination for Insolvency

The owner may at any time terminate the Contract by giving written notice to supplier, without compensation to supplier, if supplier becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has occurred or will occur thereafter to the owner.

26.3 Termination of Convenience

The Owner may, by written notice send to the supplier, terminate the contract, in whole or in part, at any time for his convenience. The notice of termination shall specify that termination is



for the owner convenience, the extent to which performance of work under the contract is termination and the date upon which such termination becomes effective.

The jobs that are completed and ready for handover within 20 days after the Supplier's receipt of notice of termination shall be purchased by owner at the Contract terms and Price. For the remaining jobs, the Owner may opt:

- To have any portion completed and delivered at the contract terms and Price; and/or.
- To cancel the remainder and pay to the Supplier and agreed amount for partially completed Goods and for materials/ equipment and parts previously procured by the supplier, in which event such goods shall be the property of the Owner.

27. Spare Parts

For proprietary spares, the bidder must give declaration stating that the spares quoted, will be interchangeable with the existing spares for the machines for which they are required. The weights & dimensions should be given in SI System.

28. Prices

The prices quoted shall remain firm till final execution of the order and shall not be subject to any escalation whatsoever.

29. Change Order

HOCL may issue or agree to change orders, which provide for change within, the scope of work required under purchase order and for equitable adjustment in the prices.

30. Vendor's Data

Vendor should give the complete data required for installation, erection and commissioning of ordered items, along with the technical catalogue, manuals, drawings, reproducible etc. Vendor should also furnish the list of his sub-vendors for bought-out items.

31. Indemnification

Supplier to indemnify HOCL from all the claims of patent's infringement, Supplier will indemnify and hold harmless HOCL from all claims, losses, damages, etc. arising out of services, labour, equipment and materials furnished by Supplier.

32. Measures and Language:

All measures shall be given in the SI System and the language to be used shall be ENGLISH.



ANNEXURE -VII

TECHNICAL INFORMATION AND SCOPE OF WORK

Supply, Erection and Commissioning of Centrifugal Air Compressor unit for – HOCL.

1.1.0 HOCL intends to install an energy efficient, oil free, water cooled integral gear type, skid mounted, multistage centrifugal air compressor conforming to API 672 (4th edition, 2004) with continuous operations requirement. The compressor is to be installed Outdoor, Non Hazardous Area, near the compressor house and integrate the new “Process Air Compressor Unit” with the existing facility.

1.2.0 Process Air Compressor Unit

The Centrifugal Air Compressor shall comprise of complete package of one number 100 % oil free, Integrally Geared Centrifugal Air Compressor with a capacity of 10,600 Nm³/hr air at outlet of after cooler compressor having discharge pressure of 8.50 kg/cm²(g). Procurement, fabrication and supply of all piping, valves and fittings etc for the complete air compressors package shall be in the bidder’s scope.

The bidder shall offer most proven & reliable machines for air compressor, meeting the specifications indicated in the bid. It shall be based on proven technology and having proven & reliable performance records supplied for the **continuous process industries**. Compressor shall be designed most energy efficient.

Bidder shall submit credentials and back up references to establish proven and reliable record of performance for supply of same or higher capacity Integrally gear type oil free centrifugal air compressor with almost similar operating conditions (flow capacity & discharge pressure) with minimum 5 years of satisfactory operation of the compressor at the site. Bidder shall submit details like client’s name, compressor model, year of supply, operating conditions (flow, discharge pressure etc), motor power rating etc along with client’s signed acknowledgement of commissioning or handing over. Bidder’s offer shall be considered for acceptance based on submitted back up credentials. HOCL may visit or contact the referenced plants compressor installation to verify the performance.

Vendor should take a pressure drop of minimum 20mm of water column across the suction filter while design the compressor package to arrive the discharge pressure quantity and temperature as per the technical specification.

Utilities Input:

Utilities like Electric Power and Cooling water shall be available at one point at battery limit. Normal & maximum requirement of all the utilities at Battery Limit, as mentioned below, shall be supplied by OWNER. The BIDDER shall indicate the normal & maximum quantity of utilities required.



Power

Type	:	AC 3 Phase, 3 Wire system
Voltage	:	6.6 ± 10% KV
Frequency	:	50 ± 5% Hz
Control Panel Supply UPS	:	110 V AC
Instrument Air	:	6 Kg/cm ² g
Cooling Water		
Cooling Water supply pressure maximum/ normal (Kg/cm ² g)	:	5.5/3.5
Cooling Water return header pressure	:	2.5 Kg/cm ² g
Cooling water supply temperature	:	34 °C
Cooling water return temperature	:	42 °C

1.3.0 Location

The **Centrifugal Air Compressor** unit will be installed at the existing premises of HOCL complex at Ambalamugal, Kochi, Kerala, India.

HOCL Kochi Unit is situated 18 Kms east of Kochi City, Kerala and well connected with Sea Port/Air Port/National Highway and just opposite to BPCL-Kochi Refineries.

1.4.0 The scope of work in brief is as follows:

SL.No.	Description
1	Basic Design, Detailed Engineering and Supply of Equipment Spares, Consumables, etc. at site.
2	Supervision services during erection, levelling, alignment etc of machinery (compressors unit).
3	Commissioning and Guarantee Test run and Handing Over to Owner.
4	Training of Owner's personnel
5	Annual Maintenance Contract for 5 years (after warranty period of 2 years)

1.5.0 **Delivery period:** The supply of compressor package including accessories and spares commissioning and guarantee test run should be completed within 8 months from the date of LOI.

1.6.0 Contract Period:

1. The period of the contract for supply, erection and commissioning of compressor shall be 32 Months (i.e. 8 months delivery + 24 months warranty) from the date of issue of work order or instructions to start the work by the Engineer-In-Charge.
2. The period of the contract for AMC shall be 5 years after warranty period



Section-2: Information required in the Bid

2.1.0 Technical Requirement

The bidder shall furnish all data including but not limited to as under:

- 2.1.1 P&I diagram showing all equipment, pipes, valves, pipe size, material of construction and pipe schedule/rating, insulation, instrumentation and control arrangement with clear demarcation of battery limit of supply (between vendor & HOCL).
- 2.1.2 Complete list of equipment, instruments, etc. included in the scope of supply offered by Vendor, along with the specification and materials of construction. Bidder to submit relevant references along with proven performance record of the model offered indicating delivered flow, discharge pressure, motor rating and specific consumption
- 2.1.3 Compressor performance curves to be furnished.
- 2.1.4 Preliminary delivery schedule.
- 2.1.5 List of proposed suppliers (sub-vendors) for major bought out item. Owner reserves the right for rejection of any sub-vendor. Owner's approval shall be obtained for any inclusion of new vendor before the order.
- 2.1.6 Layout of the unit including floor area required for Centrifugal Air Compressor
- 2.1.7 Net guaranteed power consumption of air-compressor at rated capacity and 20% turn down, requirement of utilities, instrument air, control power, etc. The bidder shall furnish the guaranteed values for Shaft KW of compressor including all losses with zero percent positive tolerance including errors in instruments and measurements at the guaranteed (certified) point specified in the compressor datasheet.
- 2.1.8 Description of the offered compressor model, description of control system, Anti-surge control system and interlocks.
- 2.1.9 Basic data for foundations to be provided to HOCL.
- 2.1.10 Guarantees - The compressor package should deliver the guaranteed performance as per the technical specification given in Annexure -VIII
- 2.1.11 Filled-in data sheet for compressor.
- 2.1.12 Split of parts/items of the compressor supplied by their principal and the packager if any.
- 2.1.13 Inspection offered at principal works and at packager's works
- 2.1.14 Basis of calculation for the compressor capacity with conversion of NM^3/hr with specified inlet condition of pressure temperature and RH given in specification sheet.
- 2.1.15 List of recommended spares.



2.1.16 The Inspection Test Plan for supply of integrally gear type centrifugal air compressor package considering all the required tests as per the tender requirement.

Section: 3 Technical Specifications for Air Compressor

3.0 Broad Scope of supply & Services

The proposed scheme shall cover the following but not limited to:

3.1. Scope of Supply

The integrally geared centrifugal air compressor package shall be designed, manufactured, tested, supplied and erected as per **API 672 (4th edition, 2004)** for the design condition mentioned in the Guarantee Condition. The extent of supply shall be as indicated in data sheets. All the components/parts required to complete the system as per approved P & I drawing, code, Specification and best engineering practice shall be included in vendor's scope of supply. Bidder shall clearly indicate in their bid items excluded from their scope. Lube oil system shall be as per figure – E1 (API 672-2004).

a. Major Equipment and spares

- i. Supply of **one new centrifugal (integrally geared) compressor system as per API 672, (4th edition, 2004)**. The system will consist of compressor drive motor with coupling along with base frame. The detailed specification is enclosed in the Annexure-VIII.
- ii. Commissioning spares including Foundation Bolt required for commissioning of the equipment.
- iii. Operational spares and consumables to meet scheduled maintenance (as specified in the Annexure-XV A).

b. Piping

The scope includes internal piping upto battery limit of compressor system which consist of the following:

- i. Process Piping upto battery limit of compressor
- ii. Cooling water supply and return piping
- iii. Utility piping

c. Instrumentation

- i. All necessary field and control room instrumentation for smooth plant operation duly installed in equipment.
- ii. Spares and consumables for operation as per **Annexure-XV - A**.

d. Electrical

- i. Electrical motor (Complete motor data sheets shall be required along with offer). (Cable upto the panel and motor will be in the scope of HOCL)
- ii. Spares and consumables for operation as per **Annexure-XV - A**.



e. Civil

Civil work is excluded in the scope of supply of bidder; however the following deliverables shall be in the scope of bidder:

- Foundation drawing of equipment.
- Drawing of Pipe supports.
- Drawing of New structural work, if needed.
- Drawing of Modification at site, if any
- Drawing of compressor shed

f. Services

- i. Bidder shall depute their commissioning engineer for supervising installation and commissioning of new compressor system on LS basis.
- ii. Bidder shall depute their service engineer for AMC for a period of 5 years after the warranty period of 2 years from the date of commissioning.

g. Exclusion

The following items are excluded in scope of supply of bidder:

1. External cables for power and instrumentation outside the battery limit.
2. Civil work except what is detailed above.
3. Installation of compressor package on foundation
4. Air dryer
5. All external piping outside the battery limit.

3.1.2 Vendor shall submit along with the bid the air flow diagram with lube oil scheme, skid layout plan and instrumentation included in the scope of supply. Foundation and compressor shed will be made available by HOCL at their cost.

3.1.3 Anchor bolts for base frame shall be supplied by the vendor. However, the supplier have to give recommended size of the compressor house and civil foundation drawing within one month from the date of LOI.

3.1.4 Vibration monitoring system complied to API 670 shall be supplied. Bidder to furnish relevant references.

3.1.5 Vendor shall also supply inter cooler, after cooler, lube oil system, air filter, moisture separator, etc. along with interconnecting piping.

3.1.6 Construction of compressor house and Erection of the compressors skid shall be in the HOCL scope.

3.1.7 Bidder shall also include in their scope of supply of special tools necessary for the maintenance of the compressors and the service has to be handed over to HOCL at free of cost after commissioning.

3.2.0 Compressor Package Design

3.2.1 Compressor and all accessories shall be designed and manufactured as per API standard 672 (4th edition, 2004). Any deviation to the requirements of API 672 and other enquiry document shall be clearly mentioned in the offer in a separate "deviation list" as per Annexure-XVI failing which it shall be concluded that all the requirements of API 672 and enquiry documents are confirmed to comply and such conclusion shall be strictly binding to the



supplier. Any deviation not listed under the above Annexure, even reflected in any other section shall not be considered applicable. No deviation or exception shall be permitted without the written approval of HOCL.

- 3.2.2 Compressor shall be designed to be most energy efficient machine. **The basis of selection of air compressor that meets the below specifications & offer will be based on cost benefit analysis considering capital cost and considering specific energy consumption.**

Basic Design:

- a) **Performance:** The sectional head-capacity characteristic curve of compressor shall rise continuously from the rated point to predicted surge. The compressor, without the use of a bypass, shall be suitable for continuous operation at any capacity at least 10% greater than the predicted surge capacity shown in the bid. Compressor shall be design for round the clock services.
- b) **Materials of construction:** Vendor to specify. However the Heat Exchanger tubes shall be of SS 316 or Copper or Cupro Nickel.
- c) **External Forces and Moments:** The vendor shall furnish the allowable forces and moments for each nozzle in tabular form with the proposal.
- d) **Inlet Guide vane:** Adjustable guide vanes may be provided by the vendor to meet specified operating Conditions mentioned in this enquiry. When provided, adjustable vanes and operating mechanisms shall be suitable for all specified operating conditions, as well as start-up, shutdown, trip-out, settling-out, and momentary surge.

The inlet guide vanes may be located as closely as possible to the eye of the impeller. The vane foils shall have an aerodynamically smooth surface, especially where the shank enters the gas stream through the housing. The vanes shall be designed such that the vanes will tend to open on loss of the control signal.

- e) **Thrust Balancing:** Thrust loads from impellers and gears shall be absorbed by individual thrust bearings on pinions, or transmitted to the bull gear thrust bearing by means of thrust rider rings fixed to the pinions and bull gear. All specified operating conditions and start-up conditions shall be evaluated for residual thrust loads.
- f) **Bearings and bearing housing:**
 - i. Bearings shall be designed to prevent backwards and/or upside down installation. Unless otherwise specified, radial and thrust bearings shall be of the hydro dynamic fluid film type.
 - ii. Unless otherwise specified, thrust bearings and radial bearings shall be fitted with bearing-metal temperature sensors installed in accordance with API Std 670.
 - iii. Bearing metal temperatures shall not exceed 100°C (212°F) at specified operating conditions with a maximum oil inlet temperature of 50°C (120°F).
 - iv. In the event the above design criteria cannot be met, vendor shall specify to owner for mutual agreement.
- g) **Shaft end seals:** Process seals and seal systems shall be such that minimum leakage is permitted to atmosphere. Mechanical seal for shaft sealing is not preferred.



h) Gearboxes

- i. The vendor shall dowel or key the gear box to the mounting plate to maintain alignment.
- ii. To the maximum extent practical, gearboxes shall be designed with internal oil passages to minimize external piping.
- iii. The design of internal piping and tubing shall achieve proper support and protection to prevent damage from vibration or from shipment, operation, and maintenance. Cantilevered piping in excess of 10 pipe diameters shall include reinforcing us sets in two planes at all pipe-to flange connections.
- iv. The gearbox shall be designed to permit rapid drainage of lube oil and to minimize oil foaming (which could lead to excessive heating of the oil). For gears with pitch line velocities of more than 125m/sec.(25,000ft/min.).
- v. Consideration should be given to design features such as windage baffles, false bottoms, adequate sump depth, and an additional full-size drain connection.
- vi. A removable and gasketed inspection cover or covers shall be provided in the gearbox to permit direct visual inspection of the full-face width of the pinion(s) and gear. The inspection opening or openings shall be at least one-half the width of the gear face.
- vii. Permanent coatings or paint shall not be applied to the interior of the casing, unless the purchaser approves in advance the material and method of application.
- viii. A single lube-oil supply connection is preferred. A single lube-oil drain connection from the gear casing is preferred.
- ix. Gearboxes shall be provided with a plugged or flanged-and-blinded purge Gas connection.

i) Gear Rating

- i. Gear sets shall be rated per API Std 613.
- ii. The rated power of the gearing shall not be less than the driver name plate rating multiplied by the driver service factor. When there are multiple pinions, the power rating of the gear sets shall not be less than:
 - a. 110% of the maximum power transmitted by the gear set.
 - b. The maximum power of the driver (including service factor) prorated between all the gear sets, based on normal power demands. If the maximum transmitted torque occurs at a continuous operating speed other than the maximum continuous speed, this torque and its corresponding speed shall be the basis for sizing the gear set.
- iii. The power rating based upon both pitting resistance and bending strength must be calculated for each member of each gear set in the unit. The pinion and bull gear teeth may have different ratings due to differences in material properties, geometry factors, and number of cycles under load. The lowest of the four ratings (pinion bending, pinion pitting, bull gear bending, bull gear pitting) shall be used as the gear rating. Wherever possible, gear sets shall be designed such that failure will occur due to pitting rather than bending (i.e., wear out before breaking).
- iv. Gearing shall be designed and manufactured to meet the tolerance (referred to as deviation in ISO) of ISO 1328, Grade 4 and AGMAQ13/ API 672
- v. The manufacturer shall provide documentation showing that the required quality levels have been met.



- vi. The pinion face width to working pitch diameter ratio (L/d ratio) shall be limited based on pinion tooth hardness, as follows:
1. For pinion hardness equal to or less than 38Rc (BHN354), L/d shall be limited to 2.0 maximum.
 2. For pinion hardness equal to or greater than 58 Rc (BHN615), L/d shall be limited to 1.6 maximum.
 3. For pinion hardness between 38 and 58 Rc (BHN 354 and BHN 615), L/d shall be limited to $L/d = 2.76 - 0.02 * H$.
 4. The material used for gearing shall meet the specifications for AGMA 2101 Grade 2 material, as a minimum. If a superior grade of material is used, credit for the better material shall not be taken in the gear rating.
 5. The tooth portion of pinions shall be integral with their shafts.
- vii. The bull gear may be integral with or separate from its shaft. Separate shafts shall be assembled in to the bull gear with an interference fit suitable for all torque requirements.
- viii. Shafts shall be made of one-piece, heat-treated steel that is suitably machined. Shafts that have a finished diameter larger than 200mm (8in.) shall be forged steel. Shafts that have a finished diameter of 200 mm (8 in.) or less shall be forged steel or, with the purchaser's approval, hot rolled bar stock, providing such bar stock meets all quality and heat treatment criteria established for shaft forgings.
- ix. The gearing shall be designed to withstand all internal and external loads inherent to geared, rotating machinery systems to the limit of the installed driver.
- x. The un plated tooth surface on loaded faces of completed gears shall have a finish, as measured along the pitch line, of 0.8mm (32min.) Ra or better.
- xi. Teeth may be silver or copper plated to provide added protection from scoring during initial operation. The vendor shall furnish the details about desirability of such plating.
- xii. Hunting tooth combinations are preferred. To achieve this, it may be necessary for the manufacturer to adjust the exact gear ratio. If such adjustment is impractical, the purchaser and the vendor shall negotiate a solution. At least one mesh shall be hunting tooth.
- xiii. Each gear and each pinion shall be supported between two bearings. Overhung designs are not permitted.
- j) Lubrication and sealing systems:**
Unless otherwise specified, the lubricant shall be hydrocarbon oil of viscosity Grade 32 with an FZG load stage of 5, in accordance with ISO 8068. When required for gearing, viscosity Grade 46 with an FZG load stage of 5 may be used, with owner's approval. Oils with extreme pressure (EP) additives shall not be used.
- k) Instrumentation Control and Protection Systems:**
For a constant-speed centrifugal compressor, automatic positioning of guide vane with ambient temperature and density correction to be considered by vendor to provide constant discharge pressure



and design flow conditions. The inlet guide vane positioning shall include a local manual override.

The compressor shall be equipped with fail safe surge protection control and anti-surge valve to protect compressor from surge.

The vendor shall provide compressor start permissive, normal operating and compressor protection shutdown logic PLC or Micro processor based system with HMI. Pre-alarm for important process parameters like pressure, temperature and flow and system diagnostic alarms shall be provided by vendor.

Alarms and shutdowns system shall be in accordance with API 614.

- i. The oil-and-gas seal system shall be suitably instrumented and controlled for orderly start-up, stable operation, warning of abnormal conditions, and shutdown of the main equipment in the event of impending damage.
- ii. Unless otherwise specified, instrumentation and installation shall conform to this standard.
- iii. Unless otherwise specified, all controls and instrumentation shall be suitable for outdoor installation.
- iv. All controls and instruments shall be located and arranged to permit easy visibility by the operators, as well as accessibility for tests, adjustments, and maintenance.
- v. Unless otherwise specified, all instruments and controls other than shut-down sensing devices shall be installed with sufficient valving to permit their replacement while the system is in operation. When shut-off valves are specified for shut-down sensing devices, the vendor shall provide a means of locking the valves in the open position.
- vi. Except for instrument air service, bleed valves are required between instruments and their isolation valves. Combination isolation/bleed valves may be used.
- vii. When a failure or a malfunction of a pressure control valve may create a hazard or result in damage to equipment or components, an additional pressure-limiting valve discharging to the reservoir or drain header shall be furnished by bidder.
- viii. Supplied PLC/HMI should be easily programmable and all the installed software should be supplied in CD or DVD with original license.
- ix. All pressure, temperature, flow, level & vibration indication should be displayed on HMI with trends.
- x. All system & process events/alarms should be logged & could not re-setted without acknowledgement by operator.
- xi. Priority level in PLC or Microprocessor should be defined at operator level & at engineering level.
- xii. Supplied transmitters should be 2 wires with HART protocol & to be operated with 24 Vdc power supply with 4-20mA output.
- xiii. In built anti-surge control should be supplied for the safety of instrument air compressor from surge.



All parameters which will be used in anti surge control system, should be display with algorithm on HMI panel.

- xiv. For temperature measurement only RTD (Pt-100/Pt-1000) or thermocouple should be used.
 - xv. All supplied field instruments should be weather proof (IP 65) suitable for safe area.
 - xvi. Vendor list of all field instruments should be approved by HOCL.
 - xvii. Minimum 30 days history of alarm should be recorded.
 - xviii. Trend recording history of minimum 72 hours should be recorded.
 - xix. Minimum 10% wired spare I/O channels are required.
 - xx. Double layer terminal block should not be used for wiring.
 - xxi. There should be sufficient space in panel for convenient working.
- 3.2.3 Compressor shall be designed considering minimum 20% turn down capacity with Inlet Guide Vane control (i.e. without opening by-pass/blow off valve). Surge protection using surge detector and blow-off valve to atmosphere with silencer shall also to be provided by vendor having discharge capacity of 100% rated flow. Bidder to ensure the safe operation of the compressor if there is 100% cut off of demand instantly. Bidder to clarify the control measures taken in such eventuality.
- 3.2.4 Inter-coolers/after coolers and Lube oil coolers shall be removable tube bundle design. Tube bundle shall be constructed such that dismantling of piping and compressor component shall be minimum. Cooling water shall be provided on tube side. Lube oil coolers, inter-cooler tube material shall be SS316 and tube-sheet material shall be SS316 or Copper or Cupro Nickel for inter-stage cooler tubes is also an acceptable material. The tubes shall not be lower than the following Tube outside diameter of 5/8" (16 mm approx), The tube wall thickness shall be strictly as per 18 BWG (1.25mm). The fins per inch for the air coolers shall be 16 fins per inch or better, U bend tubes are not acceptable. The tube to tube-sheet joint for coolers shall be expanded and seal welded.
- 3.2.5 Bidder to specify in the bid, parts / items of the compressor supplied by their principal and the sub-vendor.
- 3.2.6 The Compressor should be a three stage mounted over 2 pinions as per API 672 4th edition standard. The stage arrangements could be different however three stages should be mounted in 2 high speed rotating pinions.
- 3.2.7 HOCL requires horizontally split gearbox to facilitate easy access to bearings, seals and gears.
- 3.2.8 The Bull gear bearings shall be Hydrodynamic type sleeve bearings with Horizontal split design to have easy access through the shaft.
- 3.2.9 The Pinion bearings will be Horizontal split type Hydro static bearings with flexible pads atleast 4 per bearings. Fixed pads in pinion bearings are not acceptable.
- 3.2.10 The gearing in the compressor shall be as per the standards prescribed by AGMA 13 only. Suitable certification shall be provided for confirmation.



- 3.2.11 Compressor coupling shall be dry flexible type. Couplings, coupling to shaft juncture and guard shall confirm to API 671.
- 3.2.12 Bidder shall consider only proven & reliable material of construction of the critical components like impellers, shaft etc.
- 3.2.13 Details of moisture separator **without auto drain valve but with continuous drain** shall be submitted along with bid.
- 3.2.14 The compressor flow v/s head curve should be continuously rising type up to surge point. Surge pressure shall be minimum 10% higher than the design pressure at the design outlet capacity. Bidder to indicate the pressure rise to surge value considered in the offer.
- 3.2.15 All CS pressure parts shall be provided with 1.6 mm minimum corrosion allowance. Corrosion allowance shall be as per API 672 4th edition 6.2 & 6.1.7
- 3.2.16 The Inlet Guide Vane and the Blow valve shall be Pneumatically operated/servo motor vane control type. They should be able to come back to fail safe condition in the event of sudden stoppage due to trips or power outage. The fail safe conditions are normally closed condition for Inlet guide vane and normally open condition for the blow off valve.
- 3.2.17 The Main lube oil pump shall have the suitable vent and drain arrangements. The flow of auxiliary oil pump shall be atleast equal to the main oil pump and it should satisfy all the points of the oil supply in the compressor as is done by main oil pump. The same has to be proved with the flow measured for auxiliary oil pump.
- 3.2.18 Lube oil pump and Auxiliary pumps shall be supplied with mechanical seal as per manufacturer's standard.
- 3.2.19 Compressor shall be such designed to deliver the required flow at the design ambient conditions. It should be capable to withstand frequency variation of $\pm 5\%$. **The compressor shall be designed to deliver rated flow and pressure at 50 Hz frequency**
- 3.2.20 Compliance with this specification shall not relieve the vendor of the responsibility of furnishing equipment and accessories of proper design, material and workmanship to meet the specified operating conditions.

3.3.0 Material of Construction

- 3.3.1 For all major components/parts of compressor, the selection of materials shall be to suit operating conditions mentioned in data sheets and shall be as per guide lines of appendix of API 672 (4th edition, 2004) Heat treatment and impact testing requirement shall be as per relevant standard.

The complete lube oil piping of oil system including upstream and downstream of oil filter & the first stage suction line shall be confirming to AISI 304/316.

- 3.3.2 Materials as per JIS/DIN standard are also acceptable provided the chemical and physical properties are equivalent to referred ASTM materials in the code (API 672). Vendor in such case shall have to provide in the offer detailed comparative statement of physical and chemical properties of equivalent material. Also, in all the drawings and documents submitted to Owner, vendor shall indicate the equivalent ASTM materials. In such



cases all making flanges at battery limit of Compressor Package has to be supplied at free of cost before one month of the delivery period.

3.3.3 Copper/Cupro Nickel for inter-stage cooler tubes are also accepted. Bidder to provide relevant references of the materials offered.

3.4.0 Control and Instrumentation

The general requirement of the control system and controllers for the compressor shall be, but not limiting to, as follows:

- 3.4.1 Compressor will be operated in parallel with load variation (with equal or unequal load sharing between the existing compressors). A suitable control mechanism shall be provided to safeguard any eventuality and disruption of instrument air supply from the compressor.
- 3.4.2 The control system shall include all devices necessary for starting and stopping the compressor, controlling system pressure and assuring safe operation with respect to lubrication, vibration and temperature.
- 3.4.3 The control system shall also include a dedicated surge sensing and controlling device, which protects the compressor from sustained operation in the unstable surge region and motor overload protection.
- 3.4.4 Surge control and detection is based on monitoring motor current signal, on process conditions (discharge pressure or flow) shall be provided.
- 3.4.5 The control system shall be proven, reliable and rugged and shall be used with the compressor package by the compressor vendor for sufficient no of installation. Bidder to furnish references. HMI shall be on local panel for controlling and monitoring of compressor parameters.
- 3.4.6 The control system shall have communication protocol interface for remote monitoring.
- 3.4.7 The control system shall be operated on energy optimization Auto-Dual control mode.
- 3.4.8 The vibration monitoring and temperature monitoring system, preferably of latest Bently Nevada system / Shinkawa make with proximity type probe for each impeller furnished. Probes are preferably to be mounted in overhung shaft area immediately behind the impeller.
- 3.4.9 Bidder shall provide separate common alarm and common trip remote indication.
- 3.4.10 List of Instruments Required (Please refer the **Annexure -XIV** also)
- 3.4.11 Instruments installation shall be in accordance with API 672 .



Wiring and Conduits

- a. All conduit, signal and power cable, and monitor system components shall be located in well ventilated areas away from hot spots such as piping, machinery components, and vessels.
- b. Machinery protection system components shall not be covered by insulation or obstructed by items such as machinery covers, conduits, and piping.
- c. All conduits, armored cable, and similar components shall be located to permit disassembly and repair of equipment without causing damage to the electrical installation.
- d. Signal and power wiring shall be segregated according to good instrument installation practices. Separate earth system for signal and power shall be maintained.
- e. Signal wiring shall not be run in conduits or trays containing circuits of more than 30 volts of either alternating or direct current.
- f. Signal wiring shall be shielded, twisted pair, or shielded triad to minimize susceptibility to electromagnetic or radio frequency interference.

Installation of cables :

- a. Metallic Cable glands: on instruments and at panel.
- b. Tag numbers shall be marked on SS tag plate on the cables at both termination points.
- c. In general, instrument cables shall not be laid near to HV electrical cables & it should not cross the electrical cables.
- d. Control, instrumentation, and power wiring, that is not within a fully enclosed panel or other enclosure, shall be in the form of armored cable or shall be run in rigid metal conduit.
- e. Cables shall be supported on cable trays. Conduit shall be properly supported to avoid damage caused by vibration and isolated and shielded to prevent interference between different services.
- f. Conduits may terminate in the case of the leads to temperature elements, with a length of flexible metal conduit, long enough to facilitate maintenance without removal of the conduit.
- g. Conduits shall be Weather proof and of suitable size for the size of cables to be installed.
- h. No terminal blocks shall be located in wire-ways.
- i. Cables must be properly supported to relieve mechanical stresses on the conductors, and protected from harsh conditions such as abrasion which might degrade the insulation.
- j. All tubes/cables need to be properly laid on cable trays which shall be supported at regular intervals.

Note: Instrumentation cables, glands and conduits shall be metallic type. PVC gland and PVC conduits are not acceptable. Also the cables shall be of armoured type or rigid metal conduits.

Instruments Installation

- a. All the pressure transmitters shall be installed with isolation valves, other than instruments in shutdown systems.
- b. All the temperature sensors shall be installed with thermowell of material SS316.
- c. All the pressure gauges shall be installed with isolation valves of material SS 316.
- d. All the temperature gauges shall be installed in thermowell of material SS 316.
- e. All tubes need to be properly laid on trays which shall be supported at regular intervals.



Test and Calibration Data

Test and calibration data of all instruments and accessories need to be submitted for verifying the requirements of the specification.

3.5.0 Electrical system (Please refer Annexure-VIII also)

The following guidelines are given for design for the electrical system:

- 3.5.1 The design of electrical system shall be based on continuous and reliable service, safety of personnel and equipment, ease of maintenance and inter changeability of the equipment.
- 3.5.2. All the electrical equipment shall be of proven design and technology. The equipment shall conform to the latest issue of the following international codes and standards.
 - International Electrotechnical Commission (IEC)
 - Indian Standards (IS)
- 3.5.3 The electrical system shall also comply with the guidelines given in Indian Electricity Act and Indian Electricity Rules.
- 3.5.4 The motors and the other electrical items shall be of reputed make (ABB/Siemens/BHEL). The sub-vendor's list of the items shall be indicated by the vendor along-with the bid. The sub-vendor's list shall be reviewed and approved by the Owner.
- 3.5.5 Owner 6.6 KV HT panel control circuit is rated for 110 V DC. Hence, all the contacts for control signal should be designed in your panel suitable for this control supply.
- 3.5.6 HOCL will provide 110 V AC, single phase, 50 Hz UPS power supply for control and instrumentation.
- 3.5.7 Owner shall supply 415 V connection at one point to your panel for the power to auxiliary motor and oil heater. The distribution to individual equipment shall be in your scope including ON/OFF switches. Each outgoing feeder shall consists of switch, fuse contractor and overload relay.
- 3.5.8 Bidder to confirm that MOP which is mounted on the compressor to be sized considering lubrication requirement during coast down including power failure.
- 3.5.9 Except the power supply at one point specifically included in our scope, all other internal circuitry, distribution protection, etc. in local panels shall be in your scope.
- 3.5.10 6.6 KV main drive motor shall confirm all the specification enclosed at Annexure-3.5. L.T. motor shall confirm specification enclosed at **Annexure-VIII**, Vendor shall have to furnish data sheet duly filled in for both HT & LT motors as per API 672 .
- 3.5.11 The HT motor shall be designed with service factor of 1.0 and the motor rating to be calculated on the basis of API guidelines of Motor rating.



3.5.12 The normal operating frequency of electric power is 50 Hz. The performance of the compressor package will therefore be tested at 50 Hz. However motor should be capable of withstanding following variation:

Voltage - 6600 V \pm 10%
Frequency - 50 Hz \pm 5%

3.5.13 Bidder to furnish the BKW figures inclusive of all mechanical and frictional losses of compressor, as per API code requirements. Motor efficiency to be furnished separately in motor datasheet. During performance testing total input power shall be measured at 6.6 KV panel instead of measuring only gas power measurement.

3.6.0 Inlet Air Filter, Silencer & other auxiliaries

3.6.1 The filtration must be done in **minimum two stages**. Single stage filter is not acceptable. Filters and silencer shall be over designed considering minimum 150% rated flow capacity. The final stage of filtration must be 2 Micron with over 99% efficiency.

3.6.2 All metal parts of filter such as housing, case of filter element, supporting and fixing system of filter elements inside the housing including supports, stays, bolts-nuts etc shall be type AISI 304 stainless steel and under vendor's scope of supply. The filter shall be located an elevation of approx. 3.0 mtrs. The filter shall have suitable provision for preventing water ingress into the filter due to rain and bird screen.

3.6.3 The compressor check valve shall be with SS304 construction internally. The Check valve shall be **single flapper type**, (Double flapper check valves are not accepted).

3.7.0 Inspection and Testing

3.7.1 Inspection

I. **Material Inspection:**

- a) Quality control (stage wise) plan along with acceptance standards for inspection shall be furnished by bidders which shall be mutually agreed upon between the purchaser and vendor.
- b) Radiographic Inspections: Radiography shall be based upon the procedures of ASTM Standard Practice E 94.
- c) Ultrasonic Inspection: Ultrasonic inspection shall be based upon the procedures ASTM A 609 (castings), ASTM A 388 (forgings), or ASTM A 578 (plate).
- d) Magnetic Particle Inspection: Both wet and dry methods of magnetic particle inspection shall be based upon the procedures of ASTM Standard Practice E 709.
- e) Liquid Penetrant Inspection : Liquid penetrant inspection shall be based upon the procedures of ASTM Standard Practice E 165.



II. Compressor Package Inspection

The inspection and testing of the package unit shall be as specified in API 672 and shall also cover all the following points. All the relevant certificates are to be submitted with final documents. Third party inspector M/s Lloyds/BV/TUV/DNV/any other agency authorized by HOCL shall carry out the inspection. Final performance and mechanical running test shall be done in presence of HOCL/ TPI engineer. Vendor shall inform the tentative date of the testing one and half months in advance and 8 days advance notice for the firm date of testing. Bidder to clearly specify inspection offered at their principal works. Bidder to furnish a copy of test procedures and method for conversion of data at rated condition. Third Party Inspection charges will be borne by HOCL.

III. Stage wise inspection

The stage wise inspection shall be carried out by HOCL/TPI. Bidder shall submit detail QAP for Owner/Third party approval after placement of order. **PIM (Pre-inspection meeting) along with TPI to be arranged by vendor to finalize QAP.**

IV. Assembly Inspection and Testing

The assembly inspection shall be made on the compressor. The clearance and fittings between the assembled parts shall be within the allowable limits indicated in the approved drawings.

Hydrostatic test (API 672 clause 8.3.2)

Impeller over speed test (API 672 clause 8.3.3)

Gear Contact Check at load condition to meet the requirements of API 672 i.e. minimum 60% contact at the load point.

Torsional Analysis report to be provided for the particular ordered compressor and motor train. Typical report is not acceptable.

Performance test shall be carried out as per API 672-4th edition. The performance test shall be continuous for minimum **4 hrs.** & a minimum of five test points shall be recorded, excluding minimum and maximum point. The Performance test shall happen at the customer committed inlet air conditions of pressure, temperature, Relative humidity & cooling water temperature etc. mentioned in the specification sheet in **Annexure - VIII.**

Optional test guide vane test (clause 8.5.12.1) and sound level test shall be carried out as per API 672.

The inspection and testing of components required shall be as per API 672. The test certificates and reports shall be submitted.

Note: The Bidder can dispatch the equipment only on the acceptance of the test reports submitted for the above mentioned tests, without that the dispatch clearance will not be provided.

- V. The main motor testing shall be carried out as described in specification for HT motors placed at Annexure - VII & VIII and as per API 672(4th edition) . Motor testing and inspection at sub-vendor's shop shall be done by HOCL & by 3rd party inspection agency along with vendor representative.



- VI. At Owner's plant site vendor shall perform performance running test for continuous 72 hrs & surge test as per specified surge point at HOCL site Kochi.
- VII. Compressor shall be considered acceptable for dispatch only after the inspector issues final certificate of acceptance. Testing performed in the presence of inspector shall not relieve the supplier of their own responsibilities, guarantees and any other contractual obligations.

3.7.2. Testing

- a) At least 6 weeks prior to the first scheduled mechanical running test, the vendor shall submit to the purchaser for review and comment, detailed procedures for the mechanical running test and all specified running optional tests shall be furnished by bidder including acceptance criteria for all monitored parameters.
- b) The vendor shall notify the purchaser not less than 15 working days before the date the equipment will be ready for testing. If the testing is rescheduled, the vendor shall notify the purchaser not less than 5 working days before the new test date.

I. Hydrostatic Test

- a) Pressure-containing parts shall be tested hydrostatically with liquid at a minimum of 1.5 times the maximum allowable working pressure but not less than 140 kPa gauge (20psig).
- b) Tests shall be maintained for a sufficient period of time to permit complete examination of parts under pressure.

The hydrostatic test shall be considered satisfactory when neither leaks nor seepage through the casing or casing joint is observed for a minimum of 30min. Large, heavy castings may require a longer testing period to be agreed upon by the purchaser and the vendor. Seepage past internal closures required for testing of segmented cases and operation of a test pump to maintain pressure are acceptable.

- c) The chloride content of liquids used to test austenitic stainless steel materials shall not exceed 50 parts per million. To prevent deposition of chlorides on austenitic stainless steel as a result of evaporative drying, all residual liquid shall be removed from tested parts at the conclusion of the test.

II. Over speed Test

Impeller Over speed Test: Each impeller shall be subjected to an over-speed test at not less than 115% of maximum continuous speed for a minimum duration of 1min. Impeller dimensions identified by the manufacturer as critical (such as bore, eye seal, and outside diameter) shall be measured before and after each over speed test. All such measurements and the test speeds shall be recorded and submitted for the purchaser's review following the test. Any permanent deformation of the bore or other critical dimension outside drawing tolerances might because for rejection.

III. Mechanical Running Test

- a) During the mechanical running test, the mechanical operation of all equipment being tested and the operation of the test instrumentation shall be satisfactory. The equipment measured unfiltered vibration shall not exceed the limits as specified in API 617 and shall be recorded throughout the operating speed range.



- b) Synchronous vibration amplitude and phase angle versus speed for deceleration shall be plotted before and after the 4-hour run. Both the synchronous (one per revolution) and overall vibration levels shall be plotted. When specified, these data shall also be furnished in polar form. The speed range covered by these plots shall be from trip speed to 400rpm.
- c) When specified, tape recordings shall be made of all real-time vibration data as mutually agreed upon by the owner and the vendor.
- d) The following seal flow data shall be taken during the compressor mechanical running test to assure that the seals are installed and operating properly:
 - i) For compressors with oil seals, inner oil leakage shall be measured a teach seal.
 - ii) For single dry gas seals, flow in the vent line from each seal shall be measured.
 - iii) For tandem dry gas seals, flow in the primary and secondary vent line from each seal shall be measured.
 - iv) For double dry gas seals, the total flow to each seal shall be measured.
 - e) When specified, lube-oil and seal-oil inlet pressures and temperatures shall be varied through the range permitted in the compressor operating manual. This shall be done during the 4-hour test. This option, when specified, does not constitute a waiver of the other specified test requirements.
 - f) Unless otherwise specified, the requirements of API 617 shall be met after the mechanical running test is completed.
 - g) All hydro dynamic bearings shall be removed, inspected, and reassembled after the mechanical running test is completed.
 - h) When specified, shaft end seals shall be removed for inspection following a successful running test.
 - i) If replacement or modification of bearings or seals or dismantling of the case to replace or modify other parts is required to correct mechanical or performance deficiencies, the initial test will not be acceptable, and the final shop tests shall be run after these replacements or corrections are made. A mechanical retest is not required when the compressor case must be dismantled to comply with the requirements of API617.
 - j) Shaft end seal contacts that result in a measurable change in dimension or metal transfer may because for rejection.

IV. Helium Test

The compressor casing shall be tested for gas leakage with helium at the maximum allowable working pressure. The test shall be conducted with the casing submerged in water. The maximum allowable working pressure shall be maintained for a minimum of 30 min., with no bubbles permitted. As an alternative, a non-submerged soap-bubble test may be performed subject to approved by owner. This test is done immediately after hydrotest.



Sound-level Test

The sound-level test shall be performed in accordance with mutually agreed procedure and prevailing standard.

3.8 Parts Lists and Recommended Spares:

The vendor shall submit complete parts lists for all equipment and accessories supplied. The lists shall include manufacturer's unique part numbers, construction materials, and delivery times. Each part shall be completely identified and shown on cross-sectional or assembly-type drawings so that the purchaser may determine the inter-changeability of the part with other equipment. Parts that have been modified from standard dimensions and/or finish to satisfy specific performance requirements shall be uniquely identified by part number for inter-changeability and future duplication purposes. Standard purchased items shall be identified by the original manufacturer's name and part number.

3.9 Instruction Manuals

The vendor shall furnish the required number of instruction manuals for the equipment and any auxiliaries and instruments provided by the vendor, along with the supply.

Methods of lifting the assembled system shall be completely described. The manuals shall include legible drawings of the specific equipment included (typical drawings are not acceptable), a parts list, and completed data sheets. They shall also include instructions covering installation, final tests and checks, start-up, shutdown, operating limits and operating and maintenance procedures. The required amount, specifications, and supply temperature and pressure ranges for lubricating oils and seal fluids shall be stated.

3.10 Operating parameters

The new equipment shall deliver pneumatic air as per operating parameter and design basis specified in this NIT.

3.11 Special Tools:

- a) When special tools and fixtures are required to disassemble, assemble, or maintain the unit, they shall be included in the quotation and furnished as part of the initial supply of the machine. For multi unit installations, the requirements for quantities of special tools and fixtures shall be mutually agreed upon. These or similar special tools shall be used during shop assembly and post-test disassembly of the equipment.
- b) When special tools are provided, they shall be packaged in separate, rugged boxes and marked "Special tools for (tag/item number)." Each tool shall be stamped or tagged to indicate its intended use.
- c) All the above special tools should be handed over to HOCL after commissioning and guarantee run at free of cost.

3.12 Mechanical Warranty and Performance Guarantee.

3.12.1 The complete compressor, components, parts, assemblies and sub-assemblies shall be guaranteed against faulty design, defective or improper material and poor workmanship.



- 3.12.2 If any mal-performance or defects occur during the Guarantee and Warrantee period, the vendor shall make all necessary and desirable alterations and repairs and supply replacement of all components or parts or any defective item, required expatriate service at Owner's site shall be provided free of cost. HOCL shall provide free of cost field labour.
- 3.12.3 Negative tolerances are not accepted for flow pressure and discharge capacity. Sound level shall not exceed 90dB measured at the distance of 1 mtr from the compressor without sound-proof enclosure during performance test at Vendor's shop/HOCL site.
- 3.12.4 Performance guarantee and liabilities for compressor has been elaborated in **NIT**.

3.13. Erection and Commissioning

- 3.13.1 Erection of package and piping outside the battery limit will be carried out by HOCL as per the erection procedure to be provided by vendor. Vendor shall include in their scope supervision services for erection of skid mounted compressor package. Vendor shall do assembling and erection of loose items supplied for the package. Final commissioning at site shall be carried out in presence of vendor's commissioning engineer. Deficiency found if any during commissioning should be rectified by vendor at free of cost.
- 3.13.2 Vendor shall indicate the maximum erection and maintenance weight to be handled.
- 3.13.3 Vendor shall indicate the requirement of overhead cranes, minimum hook height required and its capacity.
- 3.13.4 Vendor shall consider the following activities during supervision of installation & commissioning of air compressor.
1. Supervision of installation of the compressor on the foundation and levelling.
 2. Supervision of installation of the coupling Half Hub on the motor Shaft.
 3. Supervision of erection of motor on the base frame of the compressor.
 4. Supervision of Alignment and welding of motor mounting blocks.
 5. Supervision of erection of suction air filter housing along with structural and suction piping of the compressor. Alignment of suction piping to the compressor inlet control valve and fixing it in position.
 6. Supervision of erection of air discharge piping, cooler, moisture separator, water manifold piping and their appropriate supports.
 7. Supervision of installation of all the field instruments. Laying of all instrument and power cables.
 8. Supervision of Termination of Power, control cabling and field cabling.

Pre-commissioning Activities

1. Cold check for proper termination and loop checks.
2. Powering up of the control panel.
3. Lube oil fill, Oil circulation, Check for leakage etc.
4. Flushing of cooling water piping isolating the equipment.
5. Simulation checks of control loop for proper operation



Commissioning activities

1. No load trial of the motor
2. Final alignment of motor with compressor
3. Coupling of the compressor and motor
4. Coupled run of the compressor and observation of the operation.
5. Mechanical Run Test for 4 hours & Surge Test
6. Guarantee run for continuous operation of 72 hrs. Without any interruption.

Any other activity HOCL feels necessary to complete the erection, commissioning and guarantee run of compressor package.

- 3.13.5. HOCL will provide free lodging and boarding at the guest house for the vendor's staff engaged for erection and commissioning.

3.14.0 Training:

Owner envisages the training needs for HOCL personnel as noted below.

1. 3 Mechanical Engineers + 2 Instrument Engineers + 2 Chemical Engineers + 2 Electrical Engineers - 3 days (at vendor's training centre)
2. 4 Mechanical Technicians + 2 Instrument Technicians + 2 Electrical Technicians + 3 operators - 3 days (at HOCL Training Centre)
3. A general training on operation and maintenance for HOCL team for a reasonable period shall be conducted by the vendor at HOCL site during commissioning of compressors for adequate period as per mutual agreement.

Bidder may accordingly include the cost of all trainings in the quoted price.

3.15.0 Packaging and Identification:

All packaging and identification shall be done.

3.16.0 Layout:

- 3.16.1 The compressors will be installed within the available space in the existing compressor house or adjacent to compressor house with provision of integration with existing facility.

3.17.0 Commissioning Spares / Consumables

- 3.17.1 Bidder shall also submit itemized list of commissioning spares and consumables with quantities and your rate shall be inclusive of this spares. Adequate quantity of spares and consumables shall be included in the offer so as to ensure that commissioning of Air compressor unit is not hampered for shortage of spares. Bidder shall also guarantee that any spares, if required over and above the commissioning spares included in the offer shall be made available without any cost and time implication to the owner. If, for any reason during commissioning,



bidder needs to utilize spares from other spares, he shall replace the same free of cost to Owner, duly delivered at site including all freights, insurance, taxes and duties.

- 3.17.2 The spares listed as per **Annexure XV - A** is for trouble free operation of the compressor unit **will be** taken for evaluation to find out the **L1** bidder. It should be supplied along with the compressor package.
- 3.17.3 The spares listed as per annexure XV-B is for the maintenance of the compressor unit will not be taken for evaluation to find out the **L1** bidder. But the rate quoted in **Annexure XV - B** shall be valid till warrantee period.
- 3.17.4 All commissioning parts furnished by the bidder shall be wrapped and packaged so that they are preserved in original as-new condition, under normal condition of storage. Proper coding and referencing of commissioning parts shall be done so that later identification with appropriate equipment will be facilitated. They shall be packaged separately clearly marked as "K 2501 D Commissioning Parts" and shipped at the same time as the equipment.

3.18 Vendor's Data:

- 3.18.1 The vendor's proposal shall provide information listed as per clause 9.2 of API 672 (2004). Vendor shall furnish the drawings and data requirements form (as per NIT) to the owner as per mutual agreement. Further, all the vendor's data and documentation (including drawings) shall be listed and furnished in the tender during the course of execution of the order.
- 3.18.2 The drawings shall be complete in all respect to facilitate maintenance and operation of the compressors and auxiliary equipment.
- 3.18.3 Drawings of civil foundation and erection requirement shall be furnished within 1 month from the date of LOI for timely completion of the foundation requirement.
- 3.18.4 Compressor and motor API 672 data sheet shall be filled and furnished with the proposal along with predicted performance curve.
- 3.18.5 Electrical drawings, documents and catalogues to be submitted with offer, approval, information and as final for HT motors. LT Motor and local electrical panel
- 3.18.6 All drawings and documents shall be submitted in three sets.
- 3.18.7 A co-ordination meeting shall be held at Owner's place, preferably within 4 weeks of order to review all the progress and clarifications, data review, approvals etc.

Progress review meeting has to be conducted at an interval of 30 days preferably through Video Conference with the all concerned and HOCL Officials.

3.19.0 Contract Data

- 3.19.1 Vendor shall submit the contract data as per the API 672 (4th edition, 2004).
- 3.19.2 Vendor shall furnish a soft copy of all drawings, diagrams and manuals in PDF or AUTOCAD formats.



3.19.3 All the items listed below shall be furnished in details (as per API 672 code) for ease of operation and maintenance of the compressors, dryer and cooler (6 sets).

1. General Arrangement Drawing
2. Foundation Drawings
3. Layout Drawing (For multi-skid packages)
4. Field Alignment Diagram
5. Heat Exchanger Drawings
6. P&I Diagrams (with Bill of Materials)
7. Cross-sectional Drawing (with Bill of Materials)
8. Performance Curves (stage wise performance curves).
9. Data Sheets
10. Installation Manuals.
11. Operation and Maintenance Manual.
12. Technical Data Manual/ catalogue for Electrical/Mechanical/Instrumentation items.

4. Documentation:

4.1.0 Bidder shall submit to owner as required the following:

- a. 3 hard copies and one in digital form of final drawings within 6 weeks after acceptance of order. All drawings shall be on AUTOCAD Release of latest version in soft copy.
- b. 3 copies of all preliminary version drawings.
- c. 3 copies of all important correspondence exchanged with owner and 3 copies of all important correspondence exchanged with any other party in connection with the work.
- d. Transportation drawing shall be submitted in 3 copies within 2 months of PO.
- e. Required copies of drawings/technical documents to Bidders, Vendors, Sub-contractors, etc.
- f. Operating manual/unloading/installation guide line shall be submitted in 6 copies.



Sl.No.	Document Description	Required by purchaser
1	All specified curve for compressor	Yes
2	Experience record Performa's for centrifugal compressor	Yes
3	Vendor's general reference list for compressor	Yes
4	Catalogues for compressor model, gearbox model, any other items (seal, couplings, etc)	Yes
5	P&ID/Schematic drawing for offered system	
5.1	Process Gas System P&ID	Yes
5.2	Seal Gas System P&ID (if available)	Yes
5.3	Nitrogen P&ID (if available)	Yes
5.4	Cooling water system P&ID	Yes
5.5	Instrument air system P&ID	Yes
5.6	Lube oil system P&ID	Yes
5.7	Any other P&ID as required	Yes
6.0	GAD, Layout & Weight	
6.1	General arrangement and across sectional drawing of the main equipment. As a minimum, the layout must show the following for compressor package: -Compressor skid must showing the compressors, motor with coupling, gearbox, -Crane capacity and the hook approach from the floor level.	Yes
6.2	Lube oil skid, Seal gas skid, air filter & control valve (as applicable), Instrument & electrical panel, auxiliary system, cleaning system, Elevation of structure, Acoustic/thermal insulations	Yes
6.3	Maximum allowable nozzle loads on compressor	Yes
6.4	Straight run requirement at compressor inlet nozzle, exhaust nozzle, control valves & any other instruments.	Yes
6.5	Special requirement for piping, Overall skid size with maintenance space requirement, Load data detail for piling of structural requirement, Maximum weight–Erection & maintenance, Recommended crane capacity and hook approach	Yes
7.0	Utilities	
7.1	Utility consumption requirement (Power, cooling water, Instrument air, N ₂ etc.)	Yes
7.2	List of auxiliaries & power consumption during normal operation. Emergency power requirement	Yes
8.0	Spares parts /Special tools	
8.1	List of mandatory spares	Yes
8.2	List of erection and commissioning spares, as recommended by bidder	Yes
8.3	List of special tools & tackle, as recommended by bidder.	Yes



4.2. Document Delivery Schedule

Sl.No	Document	Schedule	No of copy/Format	
			Print	Softcopy
1	Preliminary version drawing indicating battery limit	1 Month	3	yes
2	Final Drawing indicating battery limit	2Months	6	yes
3	Correspondence	Along with dispatch		yes
4	Transportation drawing	2Months	3	yes
5	Installation/short term preservation guideline	Along with dispatch	3	yes
6	Operating manual	Along with dispatch	6	yes
7	QAP	Along with bid	3	yes
8	GTR procedure	Along with bid	1	-

5.0 Guarantees, Penalty and Liabilities

5.1.0 Performance Testing & Guarantee

5.1.1 Performance Guarantee & GTR Procedure

Supplied and installed new machine with all accessories shall be guaranteed for the performance spelt in the specification sheet. Bidder shall guarantee for the trouble free performance of machines at normal (certified point) operating with normal operational and mechanical parameters.

HOCL expects maximum energy efficiency in new compressor. Supplier is to guarantee performance of the machines as per above. In case the supplier doesn't meet the guaranteed figures, damages shall be applicable with respect to increase in power consumption with respect to guaranteed power consumption as per the relevant clause in the NIT.

GTR procedure will be submitted by bidder along-with their bid and will be approved by owner. The procedure shall include all operational and mechanical parameters on which performance shall be evaluated / guaranteed. The calculations required to derive the load shall also be provided.

GTR shall be deemed to be successful if the machine performs 72 hours on sustained basis at the guaranteed parameters. (continuous from without any interruption in any manner.)

5.1.2 Performance Testing & Guarantee

Details of inspection and testing of the compressor units has been elaborated in this Tender. However, the bidder shall give mechanical run test of the assembled compressor units at site.



5.1.3 Compressor

- a. Capacity of the unit measured at the outlet of discharge flange of after cooler shall be 10,600 Nm³/hr
- b. The discharge pressure of the unit shall be 8.5 Kg/cm² (g) at discharge flange of after cooler
- c. The Compressor should operate continuously at a minimum turndown of 20% at rated pressure.
- d. The Specific power consumption (in Nm³/kW) at rated capacity and rated parameters.
- e. Please refer the specification of compressor in section.

5.1.4 Bidder shall furnish the detailed procedure for conducting performance guarantee test run.

5.1.5 Vendor shall guarantee the parameters for the performance of the unit as per the specification sheet attached in the Annexure-VIII

5.1.6 Guarantee

- a. Vendor shall ensure that the delivery of air compressor package (equipment and piping) and performance of services in accordance with the time schedule as confirmed/guaranteed.
- b. In case of delay in the contractual obligation to timely delivery of the equipment, it shall render vendor liable to any or all of the sanctions under various clauses of the Tender i.e. forfeiture of performance security, imposition of penalty, etc.
- c. Vendor shall guarantee that all goods delivered will be new and complete in every respect with the agreed requirements and that the goods are free from any defect (even concealed), fault or deficiency in design, material and workmanship. Permission granted by inspectors to dispatch the goods after test in vendor's workshop will not relieve vendor of the responsibility arising from the guarantee mentioned below:
- d. In the event of any defect occurring due to the materials used and/or manufacture and/or failure as regards characteristics, specification and requirements within 24 (Twenty Four) months from the date of commissioning and acceptance of the compressor package by HOCL. The vendor shall supply at his own expense and without any delay, on the owner's site all materials necessary for replacement, repair and modifications. The guarantee shall equally apply to all supplied electrical components including motors. Damage to machinery and/or equipment arising from incomplete or erroneous instructions issued by vendor will be considered vendor's fault and will be treated according to the provisions of the guarantee clause.
- e. For parts replaced, vendor shall cover guarantee for the remaining period of the original guarantee period.
- f. If the vendor fails to meet his obligation to repair or replace defective goods within a reasonable period or if the vendor refused to carry out work under the guarantee clause and implied guarantee conditions or if any danger is anticipated or in case of severe urgency. Owner shall be entitled to carry out repair work or replacement at vendor's cost and risk. In case goods have been delivered by vendor are found short. Owner is entitled to procure the remaining goods at vendor's cost and risk. However, this does not relieve vendor of any of his guarantee obligations.
- g. Taxes and duties of any kind on replacement of items, whatsoever imposed by the authorities of the country of vendor or his sub vendors until completion shall be borne by the vendor.



- h. Principal/manufacture shall depute their personnel for erection supervision, commissioning and mechanical run test at shop/site for air compressor.
- i. Principal/manufacture should be responsible and liable for the performances and back up guarantees of the air compressor and the backup guarantee should be provided to owner.

5.1.7 Warranty

The supplier/contractor should guarantee the performance of the compressor to meet all parameters specified in the NIT.

The scope of work during the warranty period shall include but not limited to the following:

Period : Commencing from the date of final acceptance of the equipment by HOCL after guarantee test run (GTR) and will end on completion of two years there from.

Scope of work - Contractor / supplier

1. The contractor shall depute his service engineer to inspect the equipment and carry out necessary maintenance either preventive/corrective/predictive or inspections in regular intervals as specified in the manual or as and when required by HOCL. Minimum one visit for two days each quarter of an year is mandatory.
2. The contractor shall depute his service engineer within 24 hrs. on receiving intimation from HOCL and complete the work within 2 days.
3. The contractor shall replace the consumable such as oil, filter, gaskets, etc. at regular interval as specified in the manual and depending on site conditions at his cost.
4. The contractor shall execute all work/activities including replacement of spare parts and consumables which are necessary for smooth functioning and achieving the all the parameters considered at the time of final acceptance of the equipment at his cost.
5. The contractor shall ensure that the compressor package is meeting all the parameters which were considered and measured at the time of final acceptance of the equipment after 72 hrs. of guarantee run.
6. During the visit, the service engineer shall carry out the activities as per the operational performance and site conditions and make necessary correction to meet the specification spelt in the NIT. (Please refer the scope of work in AMC also). Supply of spare parts and consumables as necessary for carry out the work has to be brought by him at his cost.
7. The service engineer shall complete the work as early as possible by extending the work hours and also attending the work on holidays/Sundays but not later than 5 days from the date of instruction to start the work.
8. The contractor shall undertake all kinds of work to achieve the parameters listed in the specification of the compressor.



9. In case the contractor fails or does not execute the work necessary to run the equipment and meet the final acceptance parameter, HOCL shall have right to execute the work through its employee or any other agency at the risk and cost of the contractor. In such situation, the expenses incurred by HOCL shall be recovered from the pending bills of contractor and or from PGBs.
10. Penalty for excess power consumption will be enforced as per the relevant clauses and technical specification - ANNEXURE - VII.

11. HOCL Scope

- a. HOCL shall provide guest house and canteen facility to the visiting engineer free of cost.
- b. Skilled/unskilled manpower not exceeding 4 Nos. to assist the engineer in carrying out the maintenance activities.

12. Liquidated Damages

In case the contracts fails to attend the work on call of HOCL, within 24 hrs. , the contractor shall be liable for LD

In case the contractor fails to complete the work within the stipulated period, contractor shall be liable to pay a LD of ½% (half percentage) of the contract value per week for the delay or part thereof subject to a maximum of 5% (Five percentages) of the contract value.

5.2.0. Damages

- a. Delay in Delivery

If for reasons not attributable to the purchaser or due to conditions constituting force majeure, as defined in this purchase order, the supply of equipment, and/or materials is not completed in accordance with the provisions hereof and in accordance with the delivery period as indicated in the body of the Purchase order, it is agreed that the purchaser shall be entitled to and the seller shall pay to the purchaser the following as mutually agreed damages, which are a genuine pre-estimate made by the parties of the loss and damages which the purchaser would have suffered on account of such delay in delivery and as by way of mutually determined reasonable compensation to the purchaser therefore after taking into consideration all circumstances and not as liquidated damages or penalty and without the purchaser being required to establish and prove the actual loss/damage suffered by the purchaser on account of such delay.

- b. The pre-estimated mutually agreed damages pursuant thereto shall be payable at the rate of ½% (half percent) per week or part thereof subject to maximum 5% (five percent) of total order value determined as below.

- ₹ (Rupees _____) per week or part thereof delay in the delivery of the equipment and/of materials in respect of which the price payable under the Purchase Order is payable in Indian Rupees.

- c. Notwithstanding anything to the contrary in this purchase order and without prejudice to the rights of the purchaser under this purchase order and its entitlement to the said pre-estimated mutually agreed damages and in addition and not in derogation or substitution thereof the purchaser shall be entitled to terminate the purchase order in whole or in part without being liable to the seller in any manner whatsoever or to have



the undelivered portion of the equipment and/or materials to be supplied pursuant hereto by the seller supplied and delivered at the risk and cost of the seller and without being liable to the seller in any manner whatsoever if at the end of and despite 30 (thirty) days notice in writing the seller fails to deliver all or any part of the equipment and or materials to be supplied pursuant hereto by the seller within and in accordance with the delivery schedule, (the time for completion) including such extended period as may have been allowed by the purchaser.

d. Damages for Failure to Meet Performance Guarantee

If for reasons not attributable to the purchaser or due to conditions constituting force majeure as defined in the contract, there is a short fall in the guaranteed out put or the consumption of raw materials or utilities is in excess of the guaranteed consumption thereof or there is deficiency in the guaranteed produce quality, all as guaranteed hereunder, it is agreed that the purchaser shall be entitled to and the seller shall pay to the purchaser the following as mutually agreed damages (which are a genuine pre-estimate made by the parties of the loss and damage which the purchaser would have suffered on account of such short fall in the guaranteed output or the consumption of raw materials or utilities is n excess of the guaranteed consumption thereof or there is deficiency in the guaranteed product quality and as by way of mutually determined reasonable compensation to the purchaser thereof after taking into consideration all circumstances) and not as liquidated damages or penalty and without the purchaser being required to establish and prove the actual loss/damage suffered by the purchaser on account of such delay.

1. Compressor

During performance test at HOCL, in case the compressors fails to meet the guaranteed values, the following procedure shall be followed:

i. Shortfall in guaranteed output

No shortfall in the guaranteed output is permitted

ii. Failure to get power consumption guarantees

In case during performance tests, the BKW consumed by the compressor as defined under this NIT exceeds the stipulated guaranteed value by more than 5% the subject compressors get rejected.

Discharge Pressure

The compressor unit will not be accepted if the discharge pressure is below 8.5Kg/cm^2 and the discharge quantity of below $10600\text{Nm}^3/\text{hr}$. as per technical data attached (i.e. there is no negative tolerance to discharge pressure and discharge flow).



2. Damages in Shortfall in Power Consumption

Following damages/penalties shall be applicable in case of short fall in performance observed during GTR. Deviation in guaranteed motor power performance during GTR at HOCL site, upto 1% is permitted. (Relaxation given to compensate the overall accuracy of the instruments.)

Sl. No	Shortfall from guaranteed power consumption	
1	Upto 2%	1% of contract value
2	Beyond 2% upto 3%	5% of contract value
3	Beyond 3% upto 6%	10% of contract value
4	Beyond 6%	Make good

Make Good Clause

If short fall beyond 6% is observed in one parameter only entire supply shall be treated as rejected and make good clause shall be applicable.



ANNEXURE -VIII

SPECIFICATION SHEET OF PROCESS AIR COMPRESSOR

I	PROCESS AIR COMPRESSOR		
	Compressor Standard	:	API 672
	Discharge Capacity (Volume Flow)	:	10600 NM ³ /Hr
	Rated Inlet Air Pressure (Absolute)	:	1.0238/KgCm ² (17M from MSL)
	Rated Discharge Air Pressure	:	8.5 kg/cm ² (g) at out let of after cooler
	Rated Inlet Air temperature	:	37°C
	Rated air outlet temperature at after cooler outlet	:	55°C maximum
	Cooling Water inlet Temp	:	34°C
	Cooling Water Pressure Available in HOCL	:	4.5 Kg/cm ² g
Relative Humidity	:	0.85	
II	HOCL Cooling Water Quality		
	pH	:	6.5 to 7.2
	Conductivity	:	<2000
	Free Residual Chlorine	:	0.2 to 0.4
	Phosphate(ppm)	:	8.0 to 12.0
	Total Hardness(ppm)	:	<300
	TDS	:	<700ppm
	Chloride	:	<200
	Total Iron	:	<2.0
	Turbidity	:	<20NTU
III	Inter Cooler & After Cooler		
	Tube materials	:	SS316
	Coolent	:	Water
	Type	:	Shell & Tube (Removable type)
IV	Lub Oil System		
1	Quantity required for one charge	:	
2	Type of oil synthetic/mineral	:	
3	Standardised or available in open market	:	
4	Recommended frequency of charge	:	
5	Estimated oil consumption/hr. of operation at rated load	:	
6	Approximate cost of oil/Ltr.	:	



V	Air Filter		
1	Number of element in suction air filter	:	
2	Degree of filtration (minimum)	:	2 micron
3	Estimated frequency of change of filter cartridge	:	
4	Approximate cost of filter cartridge/No.	:	
VI	Oil filter		
1	Number of oil filter/unit	:	
2	Approximate frequency of change of oil filter	:	
3	Cost of oil filter/cartridge	:	
VII	Compressor bearings		
1	Type No. of bearings in each stage	:	
2	Total number of bearings	:	
3	Approximate life of bearings	:	
4	Approximate cost of bearings	:	
VIII	INSTRUMENTATION		
1	Control system requirements	:	The control system shall regulate inlet control valve, unloading control valve operations, monitor the operating parameters, provide alarm and trip conditions with audible horn, sequences start-up and shutdown of the unit, surge detection, anti surge system (surge control and detection is based on monitoring motor current and monitoring signal based on process conditions (discharge pressure or flow) shall be provided.), lubrication system controls, seal gas control system if present, different modes of operation, stores data and retrievable for analysis, communication with remote devices. Power supply UPS 110 VAC, 50 Hz for control panel. The control panel with LCD display (Panel for indication, operation, configuration, alarm setting, trip setting and other interactions shall be done from the panel.)



2	Instruments	:	Transmitters, switches, gauges required for monitoring , control and interlock for parameters of Pressure , temperature, level, differential pressure, vibration monitoring on impellers of each stage, motor current etc. The control panel parameters shall be included as per list below. Bently Nevada/ Shinkawa make vibration monitoring system is preferred. The signal for Analog input/Output shall be of 4-20mA type. The temperature sensors shall be of Thermocouples/RTD PT- 100. The instruments shall be of latest technology and reputed make.
3	Control valves and accessories	:	Variable Inlet Guide vane control valve, unloading control valve along with all accessories.
4	Spare requirement	:	Spares for each type of controller parts/modules. Spare Slot/ channel for AI,AO,DI,DO (for future use) are to be considered.
5	Instruments, control valves, control panel installation and commissioning	:	Installation of instruments, cabling, terminations, control valve installation and control panel installation, configurations and commissioning.
6	Documentation and softwares	:	The installation, maintenance manual along with technical catalogues. As built drawings for loop drawings and panel arrangement drawings are required.
7	Control panel Parameters	1	Compressor discharge pressure (Indication, Alarm)
		2	Compressor Final stage inlet temperature (Indication, Alarm, Trip)
		3	Lubrication oil temperature (Indication, Alarm, Trip)
		4	Lubrication oil pressure (Indication, Alarm, Trip)
		5	Low speed pinion vibration (Indication, Alarm, Trip)
		6	High speed pinion vibration (Indication, Alarm, Trip)
		7	Motor current (Indication, Alarm, Trip)
		8	Seal gas pressure (Indication, Alarm, Trip)
		9	Motor bearing temperatures, inboard. (Indication, Alarm, Trip)
		10	Motor bearing temperatures, out board. (Indication, Alarm, Trip)
		11	Motor winding temperatures (Indication, Alarm)
		12	Lube oil tank level (Indication, Alarm)
		13	Surge detection (Indication, Alarm)
		14	Oil filter differential pressure (Indication, Alarm)
		15	Inlet Air filter differential pressure (Indication, Alarm)
		16	Inlet Air filter pressure and temperature (Indication, Alarm)



		17	Inlet guide vane control valve output signal
		18	Unloading control valve output signal
		19	Output status display for Solenoid valves in interlock
		20	Main motor and Auxiliary Oil pump running status
		21	Modes of operation selection and status indication like permissive start, modes.
		22	Emergency stop push button hard ware type.
		23	Remote indication for Trip and Alarms.
		24	Thrust bearings and radial bearings temperature indications
		25	Motor run hours, number of starts etc.
		26	Local indication instruments as per the Annexure-XIV
8	Operating Modes	:	Different modes for the Compressor operation to be included as required (Like throttling the suction valve, Based on Discharge Pressure, Based on Motor Current, etc.)

IX ELECTRICAL

Motor specification for New Process Air Compressor Motor (K2501D)

Motor Type	Squirrel cage Induction Motor
Type of construction	IM B3
Sound Pressure level	85 db max
Ref Standard	IEC 60034
System Voltage	6600V AC
No of Phases	3
Frequency	50 Hz
Starting method	Direct on line(DOL)
Stator circuit	Star
Efficiency	Above 95% (Reputed manufactures of HV Motors are having efficiency more than 95%. Selection of Motor can be carried out after life cycle cost study)
Motor Power, Shaft height, Speed and type of Coupling	As decided by the compressor manufacturer
Degree of protection	IP55 minimum
Method of cooling	Air / Water
Bearing design	Sleeve bearings
Insulation Class	Class F
Mode of Operation	Continuous duty S1
Area classification	Safe area
Anti-condensation heater	Required
Anti-condensation heater Power supply	230VAC, 50 Hz
Lube oil pump motor power supply	415V, 3 phase,50 Hz



Ambient Temperature	40 degree Celsius
Altitude	Below 1000 meters
Paint Colour	Grey preferred

I. **General Requirements of HV motor**

The motor for compressor shall be high voltage (6.6KV, 50 Hz) induction motor. Motor shall be proven design with longest lifetime and highest reliability. The motor shall have good service support in India. The availability of spares, repairs and replacement shall be available throughout the life cycle.

Motor name plate rating (exclusive of power factor) shall be preferably minimum of 110% of the maximum horse power required (including gear and coupling losses) for any of the specified operating condition.

II. **Rotor**

Rotor shall be robust in construction with minimal vibration to achieve long operating life. Copper is required for the motor's rotor windings. Rotor cages shall be of fabricated-bar construction with copper or copper alloy bars and end rings. The rotor shall be constructed in such a way as to have optimal operating characteristics. After assembling, each rotor is dynamically balanced at full operating speed in accordance with the ISO 1940-1 and ISO 11342 standards. Shaft material shall be selected in consultation with the compressor manufacturer to cater the compressor load profile.

III. **Stator**

The stator core is welded and machined to form a solid and compact unit that retains its rigidity throughout the life of the motor. All windings shall be adequately braced and blocked to provide sufficient rigidity during normal conditions of service. The motor's insulation shall be non-hygroscopic, oil resistant and resistant to flame propagation. The insulation shall consist of an epoxy sealing system. When completely wound and connected, the stator is vacuum pressure impregnated and cured with proven compact insulation system. All coils shall have anti-corona protection and stress grading. The insulation system shall be designed to stay within temperature class F. It shall ensure low dielectric losses, high dielectric strength, excellent heat transfer and the elimination of hazardous internal partial discharges.

IV. **High Voltage Terminal Box**

Terminal box shall be rigid welded construction with minimum 3mm thick sheet steel and have ample size for making connections of supply cables. When viewing from drive side, the motor terminal box is mounted on the right-hand side of stator frame. When requested it can be installed on the left side also. Box shall be turnable in steps of 90 degree to allow cable entry from left/ right/ bottom. Terminal clearance and creepage distance of connecting terminals shall be designed for 6.6KV voltage grade. Terminal bushings shall be of epoxy cast resin/ polyurethane resin. Terminal box shall be short circuit proof. If a short-circuit occurs in the motor, all of the forces generated by the short circuit current are reliably handled by the components in the terminal box. Terminals shall be suitable for connection of 3 core XLPE armoured aluminium cable. Cable entry hole size on the gland plate shall be confirmed after confirming the cable size of the motor. Terminal box shall have minimum IP65 protection and suitable external earth connection provision. Star point terminal box also shall be suitably located in the stator frame. It shall be provided with suitable size blind flange plate. Degree of protection of star point terminal box also shall be minimum IP65. One common auxiliary terminal box shall be mounted on the stator frame for monitoring devices and space heater connections. Required number of suitable size cable entry threads shall be provided on the auxiliary terminal box gland plate. Auxiliary terminal block shall have adequate number of terminal blocks.



V. Bearings

Bearings shall be of sleeve bearings. Motor bearings shall be designed in consultation with compressor manufacturer to cater any additional axial/radial force of the compressor. Motors fitted with sleeve bearings shall have the magnetic center together with the limits of the maximum permissible axial float permanently marked on the motor. It shall be possible to safely view the rotor position relative to these marks when the motor is in operation. Insulated NDE bearing is preferred and shaft voltage shall be within the limit as specified in the relevant standards. Lubrication method of sleeve bearings shall be either self-lubrication or by means of oil circulation. If forced lubrication is required by both the motor and the compressor, it is preferred to have both combined into a single lubrication system. Where common lubrication systems are used, vendor shall confirm with the motor manufacturer about the lubrication requirements for the motor bearings. All oil piping, connections and unions shall be in accordance with the compressor specification. Bearings shall be equipped with an oil level and flow indication. Make of the bearings shall be from reputed manufacturer with proven track records.

VI. Local Panel

Local control panel shall be provided near to the motor. Panel enclosure shall be of minimum IP54 or above rating for HMI which shall be provided with on/off/trip indications of main/lube oil pump motor, ammeter for main/lube oil pump motor, DE/NDE bearing temperatures display/alarm/trip, winding temperatures display/alarm/trip functions, common alarm and trip contacts, remote start/stop contacts, alarm and trip history, alarm and trip indications with hooter. Panel shall have adequate number of terminal blocks. All the components used in the panel shall be of reputed make.

VII. Vibration

The motor manufactured according to IEC standard satisfy the Grade A vibration limits specified in IEC 60034-14. The maximum accepted value of bearing housing vibration of a 2 pole motor shall be 2.3 mm/s rms.

VIII. Anti-Condensation Heaters

Anti-condensation heaters shall be included to prevent the accumulation of moisture within the machine enclosure. Anti-condensation heaters shall be suitable for 230V AC, single phase power supply. Heaters shall be of a fully insulated design. The heater shall be rated such that under no circumstances shall the temperature of the heater element or the machine enclosure exceed the winding temperature rating.

IX. Name plate

The motor name plate shall be IEC 60034-1. The vendor shall provide corrosion resistant, 316 stainless steel nameplates on the motor. The name plates shall be fastened with 316 stainless steel screws or rivets to the motor. The direction of rotation of the motor shall be either stamped on the motor frame or consist of a 316 stainless steel direction arrow riveted to the motor frame with 316 stainless steel rivets.

X. Protection

Motor stator shall be provided with winding resistance temperature detectors. A minimum of two sensing elements per phase shall be installed around the circumference in the stator winding slots. The vendor's drawing



shall show the location and number of each sensing element in the stator winding and its connection point on the terminal strip. Bearing temperature detectors (at least one per bearing) shall be provided. Detectors shall be installed so that they measure bearing metal temperature. Bearing temperature detectors shall be installed in such a way that they do not violate the integrity of the bearing insulation.

XI. Packing and shipment

The vendor shall be responsible for preparation for shipment including packing, protection, preservation, labelling and marking of all items. Particular attention shall be given to prevent brinelling of bearings, moisture ingress and physical damage. Where required, the motor's rotor shall be locked to prevent damage to the bearings. The motor shall be fitted with a warning sign to indicate the rotor is locked. All terminal boxes shall be sealed to their final degree of protection. Where required cable entries can be plugged with a suitable gland plug which will provide the same protection as the final gland.

XII. Quality assurance, Inspection and Testing

a. Testing

All testing shall be carried out at the vendor's test facility. Test equipment shall be supplied by the vendor and shall have valid calibration certificates. The vendor shall submit an Inspection and Test Plan (ITP) prior to testing.

b. Inspection and Test plan(ITP):

Vendor shall include an ITP in their Tender documents. The ITP shall list all inspections and tests proposed for the equipment by the vendor, between the date of ordering and the date of delivery. The vendor shall be responsible for the planning and execution of all inspections and tests. Unless specified elsewhere, the vendor shall notify at least two weeks in advance, of the date on which any of the inspections or tests nominated as Hold or Witness points on the ITP are due to be carried out. Certificates of Test shall be provided for each item of equipment to prove it has been satisfactorily tested to meet all requirements of its appropriate manufacturing standards, whether or not witnessed.

c. Factory acceptance testing

Motor shall be tested to demonstrate that it is free from mechanical and electrical defects. The vendor shall perform the tests and testing will be witnessed by HOCL or authorized representative. Motor shall be subjected to the following tests at the vendor's works and shall be included in the price of the motor.

- High voltage withstand test in accordance with IEC 60034-1
- Visual Inspection.
- Air gap measurement and sleeve bearing clearance check.
- Insulation resistance measurement before dielectric test.
- Cold resistance of windings.
- No load losses and current.
- Locked rotor current.
- Polarisation index of the winding
- Circuit continuity and insulation resistance checks including that of ancillary equipment.
- Temperature rise test in accordance with IEC 60034
- Vibration test in accordance with IEC 60034
- Noise level in accordance with IEC 60034-9
- Measurement of losses, efficiency and power factor at full load, 3/4 load and 1/2 load.
- Measurement of partial discharge



Documentation

The vendor shall submit design drawing detailing the HV motor construction after award of contract. This shall include all GA drawings, components specification etc. All reports of FAT and test reports of motor components including detectors, terminal box, winding material, bushings, etc. shall be submitted along with delivery. After the commissioning, the vendor shall provide O&M manual of motor (2 set of hard copies and one soft copy). The following minimum information shall be provided in the O&M manual:-

- Equipment schedule detailing the make, model and number of all separate items of equipment. This shall describe exactly the equipment installed, including which manufacturer's options and accessories are included.
- Equipment manufacturer's maintenance information
- Preventative maintenance schedule
- Details and names of equipment suppliers
- Drawing list showing number, title and revision.
- Drawings including relevant GA Drawings
- List of spare parts provided.



ANNEXURE -IX

ANNUAL MAINTENANCE CONTRACT (After Guarantee/Warranty period of two years)

This AMC is awarded separately on the basis of rates offered by you as per BoQ in the NIT (HOCL/Proj/K 2501 D)/23 (R). However, payment will be made at actuals as per schedule of rates (after satisfactory completion of each item and certification by Engineer/Officer-In-Charge). Your quoted rates shall remain firm throughout the pendency of the contract and shall not be subject to any escalation whatsoever. You are requested to contact Engineer/Officer-In-Charge for further instructions/execution of the work. No additional claim on account of increase or decrease of quantities will be entertained. The exact value of contract shall however be subject to variations depending upon the actual quantities of Work/Services executed as per the requirements at site, measured jointly and paid for at the end of the contract.

ESI, PF, Labour Law, SHE (Safety, Health and Environment) etc. Requirements: Refer Annexure A, B and C attached.

GOODS AND SERVICE TAX (GST): GST applicable shall be paid extra, to those who have GSTIN registration, unless otherwise specified elsewhere.

AMC

Scope of Work

Expert supervision for inspection, trouble shooting and overhauling of Air Compressors K 2501 D in our Phenol Plant as and when required. Reporting recommendations for corrective / preventive maintenance actions, spares required etc.

Tentative scope of activities in general are as follows:

However, manufacturer may choose the sequence and frequency of activities as per their operation / maintenance manual.

You shall depute your service Engineer within 24hrs after receiving the intimation from HOCL.

1. Inspect drive coupling for excessive wear. Replace/lubricate as necessary.
2. Remove gearbox cover and inspect all bearings for excessive wear. Install new bearings as necessary and record clearances.
3. Inspect compressor gear and pinions for excessive wear. Record clearances and take corrective actions if any accordingly.
4. Inspect impellers back plate and diffusers for erosion/corrosion/dirt build up. Clean, repair, replace parts as necessary. Adjust and record impeller running clearances.
5. Supervision of works required for repairs of parts inside or outside work site (eg. Machining of back plate etc.)
6. Check Air/Oil seals for excessive wear. Replace if excessively worn.



7. Inspect main & auxiliary oil pump for wear. Replace worn parts.
8. Inspect intercoolers tube bundles for dirt build up/tube leaks. Clean/repair as necessary.
9. Inspect oil cooler for leaks/scale build up/tube leaks. Clean /repair as necessary.
10. Inspection air filter and replace if necessary.
11. Inspect Oil filters and replace as necessary.
12. Drain Oil and inspect oil reservoir for corrosion/or other contaminants. Clean reservoir and fill fresh oil.
13. Inspect inlet valve, unloading valve and compressor discharge check valve for proper operation.
14. Inspect, rectify and Calibrate gauges, transmitters, vibration probes, protective devices and control systems etc. Replace defective parts.
15. Inspection : Check and replacement motor bearing of requires and Check condition of electrical connections.
16. Carryout loop checks/safety by simulation.
17. Carryout no load run of drive motor.
18. Operate the compressor and observe the performance.
19. Any other work connected with inspection & overhauling of Air Compressors.
20. The number of visits envisaged for AMC & Break down is 16 mandays per year which includes AMC visits and breakdown visits. If number of visits exceeds HOCL will reimbursement the per manday rate on pro-rata basis (ie. The rate quoted for the corresponding year/16).
21. Manday means availability of Service Engineer at HOCL site at ambalamugal.
22. There will not be any over time charges for working beyond office hours and holidays. However the service engineer should be ready to work on Holidays and beyond office hours as and when required by HOCL.

Scope of Supply

Materials

a. Contractor's Scope of Supply

Nil.

b. HOCL Scope of Supply

1. All tools and tackles except special tools, rigging tools, etc. if required will be provided by HOCL.



2. HOCL's Guest House, canteen facility will be provided for Service Engineers by HOCL at free of cost.
3. Safety helmets if required, for their expert/service Engineer shall be provided by HOCL on a returnable basis. However, other PPEs has to be brought by the service Engineer.
4. Skilled/unskilled manpower not exceeding 4 Nos. to assist the Engineer in carrying out the maintenance activities.

Tools & Tackles

a. Contractor's Scope

Any special tools required for the maintenance, erection/commissioning of compressor has to be brought by the vendor.

b. HOCL's Scope

All Tools & Tackles required for the maintenance shall be arranged by HOCL.

Time of Completion for AMC

Time of Completion shall be 5 days from the date of instruction to start the work.

Liquidated damages

In case the contractor fails to complete the work within the stipulated period, contractor shall be liable to pay a LD of ½% (half percentage) of the contract value per week for the delay or part thereof subject to a maximum of 5% (Five percentages) of the contract value.

Performance Security Deposit

Performance Security for AMC contract shall be 10% of the AMC contract value and it shall be submitted within 21 days before expiring warrantee period and it shall be released after 60 days from the date of completion of AMC contract.

Security Deposit

- Total security deposit shall be 5% of total AMC contract value. This shall be recovered through deductions at the rate of 5% (Five percent) of the value of each running account bill till the total security deposit amount is collected, after which no further deductions shall be made on this account.
- Security Deposit shall be refunded not later than 60 days to the contractor without any interest after the completion of contract period in all respects and completion of all such obligations under the contract.



ANNEXURE -X

PRICE SCHEDULE

1. Your quotation rate shall be inclusive of Design, engineering, manufacturing, packaging, testing, supply, supervision of erection & commissioning and Guarantee Test Run, cost of spares in Annexure - XV - A, training and AMC of fixed speed electric motor driven centrifugal compressor (Integrally Geared) and test run for 72 hrs. at HOCL Kochi site as per scope of work in NIT (HOCL/Proj/K 2501 D/23 (R)).
 - a. Any special tools required for the maintenance of compressor shall be listed separately and the same has to be handed over to HOCL after commissioning of the equipment at free of cost.
 - b. Your quoted rate shall be inclusive of running maintenance spares (during warranty period) for the equipment. HOCL will not make any payment for the requirement of parts /consumable/filters/service engineers, etc. during warranty period.
 - c. Your quoted rate for Annual maintenance contract (AMC) shall be clearly indicated in the schedule of rate attached (after warranty period) for the equipment. HOCL will make payment for the requirement of parts /consumable/filters/etc. during AMC period.
 - d. The number of visits envisaged for AMC & Break down is 16 mandays per year which includes AMC visits and breakdown visits. If number of visits exceeds manday HOCL will reimbursement the per day rate on prorata basis (ie. The rate quoted for the corresponding year/16).
 - e. Manday means days of Service Engineer available at HOCL site.
 - f. There will not be any over time charges for working beyond office hours and holidays. However the service engineer should be ready to work on Holidays and beyond office hours as and when required by HOCL.
2. Lodging of commissioning/AMC Engineers can be made available at HOCL Guest House.
3. Your quoted rate shall also inclusive of training / training manual/operation manual/spare parts list / check list/special tools / FAT / performance guarantee test / Isometric drawings & P&ID (6 set each/check list, etc. required for smooth operation of the equipment).
4. Necessary Civil foundation/structure will be made by HOCL. However, the successful bidder has to submit the details of the same within 30 days from the date of LOI/Work Order. Delay in submission of drawing and subsequent approval will not relieve the responsibility of vendors in supply the Compressor assembly in time.
5. The bidder has to submit the life cycle cost analysis for a period of 10 years (This is not a part for price comparison for purchase of Compressor). But everything became equal, this part will be considered for price comparison.
6. AMC charges non-comprehensive for 5 years (after 2 year warranty period) need to be quoted separately. The rate shall be inclusive of all charges towards travelling, boarding, local conveyance expense whatever is applicable. The rate should be quoted in the enclosed format and shall be valid through the pendency of the contract. It will be counted to the price analysis to find out the lowest bidder.
7. The spares and consumables required (as per the attached list **Annexure -XV-B**) for the trouble free operation need to be quoted separately and should be firm to the warranty period. (It will not be a parameter for rate analysis) Bidders shall submit their offer for Spares in Annexure XV - B in one sealed envelope to the following address and super-scribed with Enquiry No., due date and Offer for Spares for servicing of Process Air Compressor for Cumox Plant (K2501 D) so as to reach on or before the due date of the bid submission.



Supply, Erection and Commissioning and AMC of Process Air
Compressor For Cumox Plant (K2501 D)
HOCL/Proj/K 2501 D/23 (R)

Address:

**Chief General Manager (HR/Engg.) & FM
Hindustan Organic Chemicals Limited
Ambalamugal
Kochi , Kerala - 682 302**

HOCL will place Purchase Order for the spares and consumables in Annexure - XV B only as and when required and under sole discretion of HOCL.

8. The same will be opened physically in presence of Technically qualified bidders as the price bid opening date.
9. However, spare parts as per Annexure - XV - A shall be delivered at free of cost along with the compressor.
10. Rates for spares and consumables in Annexure - XV - B should be delivered at HOCL site, Ambalamugal, Kochi and inclusive of all taxes, P&F charges, etc. GST will be paid extra as applicable.



ANNEXURE - X - A

Price Break-up

1. The contract will be awarded with two separate Work Orders/Purchase Orders.
 - a. Supply, Erection and Commissioning of Process Air Compressor for Cumox Plant (K2501 D)
 - b. Annual Maintenance Contract for 5 years after warrantee period.
2. The Performance Security Deposit should be submitted against each work orders within 21 days from the date of commencement of respective work orders.

The validity of Performance Security Deposit for contract (a) shall valid for 32 months (i.e. delivery period + warrantee period of 24 months). The value of Performance Security Deposit shall be 10% of the Part - A of Schedule of Rates.

3. The validity of Performance Security Deposit for AMC contract (b) shall valid for 5 years after Warrantee period and same shall be submitted within 21 days of commencement of AMC contract. The Performance Security Deposit value shall be 10% of the value of AMC Contract.
4. The Performance Security Deposit against the warrantee period will be released after successful completion of 24 months from the date of commissioning and on submission of Performance Security Deposit against the work order for AMC.
5. The AMC charges can be quoted as lumpsum basis and payment can be made after completion of each year by pro-rata basis.
6. The spares cost in Table 'A' will be taken for evaluation and should be supplied along with compressor.

The tender for spares noted in Table 'B' shall be valid throughout the warrantee period and HOCL will place purchase order during this period if required by HOCL. Placing a Purchase Order for the same is under sole discretion of HOCL. (The cost portion of spares in table B will not be considered for evaluation)



The tenderer shall furnish break-up of his quoted price in the format given below: -

Tender No. HOCL/Proj/K 2501 D/23 (R)

TABLE - A

Sl. No.	Description	Basic Price	CGST	SGST	IGST	Total
1	2	3	4	5	6	7
1.	Supply, Erection, Commissioning, guarantee run, training HOCL person, spares and consumables for operation on Lumpsum basis as per Annexure XV - A etc. of Process Air Compressor for Cumox Plant					
2.	AMC charges for 5 years after warrantee period					
	TOTAL CONTRACT VALUE (1+2)					

Note :

1. The total of GST amount in column (4+5) or column (6) shall match with the GST amount quoted in price bid.
2. The total of column (7) shall match with the total price quoted in price bid.
3. The AMC charges for 5 years should not be less than 2.5% of the total of basic price of the composite contract price (i.e. column (3)).
4. In case the L1 tenderer does not give break up as suggested, 2.5% of the basic price of composite contract price towards AMC charges for 5 years.

Payment Terms

a. Supply, Erection and commissioning of Compressor

1. 70% of the contract price as provided in Sl.No. 1 Table - A will be released after satisfactory completion of test run at vendor's works and inspection release by IIIrd Party Inspector / HOCL Engineers and on receipt of Compressor assembly at HOCL Ambalamugal site.
2. 20% of the contract price as provided in Sl.No. 1 Table - A, will be released on after satisfactory commissioning and test run/guarantee run for 72 hrs. continuously and meeting all parameter and final acceptance.
3. 10% of the contract price shall be released on successful running of the equipment for 3 months from date of final acceptance.



b. Annual Maintenance Contract

AMC charges will be paid after completion of each year on pro rata basis.

Performance Security Deposit

1. Performance security for supply, erection and commissioning of the compressor shall be 10% of contract value of supply, erection and commissioning of the compressor. It shall be furnished within 21 days after notification of award and the same will be released after warranty period and on submission of Performance Security of AMC contract.
2. Performance Security for AMC contract shall be 10% of the AMC contract value and it shall be submitted within 21 days before expiring warranty period and it shall be released after 60 days from the date of completion of AMC contract.

Contract Period

1. The contract period for the supply and commissioning will be 32 months (delivery period + warranty period) from the date of LOI or Purchase Order whichever is earlier.
2. The contract period for AMC will start from the date of expiring of warranty period and valid upto 5 years from the date of commencement of AMC period.



ANNEXURE -XI

CRITERIA FOR BID EVALUATION (EVALUATION AND COMPARISON OF BIDS)

The Bids considered technically acceptable, will be evaluated and compared as per following:

1. Basis of Evaluation of Price Bid

Evaluation of bid shall be based on landed cost as per the schedule of rates; erection, commissioning, guarantee run, cost of spares in the **Annexure XV-A** and training, etc. and AMC charges for 5 years (after warrantee period of 2 years) as per NIT.

However spares quoted as per annexure XV-B will not be taken for evaluation to find out the **L1** bidder. But the rate quoted in **Annexure XV-B** shall be valid for the entire warranty period and the same shall be supplied within 48 Hours from the time of intimation.

2. Evaluation of Price Bid

The evaluation of bids shall taken into consideration all cost implications including the following:

a. Wherever applicable, deficient shall be loaded for cost of deficiency on base price, bid shall include cost of spares , inspection, packing, forwarding, erection, commissioning, guarantee run, cost of spares and training etc. as per NIT and AMC charges for 5 years (after warrantee period of 2 years) and any other charges / taxes/ duties, etc. upto HOCL, Ambalamugal.

b. Operating Cost

Loading and penalty criteria shall be based on guaranteed performance of the compressors. The parameter for loading shall be the BKW of the compressor at the guaranteed (certified) point specified in the data sheets. Bidder shall furnish the guaranteed values for BKW of compressor including all losses with zero percent tolerance including errors in instruments and measurements at the guaranteed (certified) point specified in the data sheets.

c. Loading Criteria

i. Total Cost

The total cost of Process Air Compressor Package for evaluation purpose shall be computed as under:

Total cost of package for evaluation purposes = A+ B

Where,

A = Capital cost of all items comprising Process Air Compressor Package including all spares, special tools and non-comprehensive annual maintenance cost etc. as per NIT

B = Different operating cost for compressor as defined hereunder.



ii. Differential Operating Cost (B) for Compressor

The differential operating cost is defined as under:

$$B \text{ (Indian Rupees)} = N_{op} \times (BKW_E - BKW_R) \times C_F \times 8000 \times D_F$$

Where

N_{op}	- Number of operating Unit (1No.)
BKW_E	- Guaranteed shaft power (KW) for the compressor quoted by the bidder under evaluation
BKW_R	- Lowest quoted (Guaranteed) compressor BKW (amongst the technically acceptable bidder)
C_F	- Cost of energy 7.00 Rupees per kWh
8000	- Number of operating hours per year
D_F	- Discounting factor to arrive at Net Present Value (NPV) based on number of operating years (4.9271)

The penalty shall be independent of any other penalties specified elsewhere in the bid/enquiry documents.

Discounting factor (D_F)

Discounting factor (D_F) is defined as under:

$$\sum_{n=2}^{n=k+1} \left\{ \frac{1}{1+(x/100)} \right\}^n$$

Where

K - Number of operating years for which loading to be done as is specified i.e. 5 years

X - Percentage rate of interest 7.5%

D_F - 4.9271

(The above formula considers one year time for start up of operation)

3. Firm Prices

Bidders have to quote firm prices only. No escalation whatsoever will be considered.

4. Base Price of Equipment and Materials

The net cost quoted by the bidders shall be considered as the base cost of the equipment as per schedule of rates.

5. Discount

Any unconditional discount offered before price bid opening will be considered for evaluation. Discount offer after price bid opening shall not be considered for evaluation, however, in case the vendor happens to be L1 bidder (without considering this discount), such discount shall be considered while placing order.



6. Packing and Forwarding Charges

Packing and forwarding charges shall be inclusive of the quoted rate as mentioned in the schedule of rates.

7. Third Party Inspection Charges

Third Party Inspection charges shall be borne by HOCL and supplier shall confirm in techno commercial bid.

8. Taxes & Duties

The Contract will be awarded on fixed all-inclusive price unless otherwise specified. All rates in the tender shall cover applicable taxes, levies and duties. However applicable GST will be paid by HOCL subject to the successful tenderer having GST registration with Central Excise.

9. Inland Transportation

All inland freight charges shall be borne by the bidder.

10. Inland Insurance

The inland insurance charges will be borne by Bidder and supply shall be at HOCL, Ambalamugal.

11. Force Majeure

Neither party hereto shall be held responsible for any delay or failure to perform any or all of the obligations imposed upon such party caused by force majeure. In such case, the time of performance of such obligations and obligations of the other party to the extent that they are directly or indirectly affected by such occurrence will be extended by a period equal to that duly justified. Notifications of circumstances of force majeure shall be given by the telegram addressed to the other party within 5 (five) working days of its occurrence. This telegram shall be confirmed by a letter dispatched within one week along with a certificate of the circumstance of the force majeure. If they intervene before contractual delivery date and impede performance acts of God, wars, revolution and official strikes and any such act on which neither party has control. However, should such a delay, even if due to the reasons of force majeure, be protracted for more than 3 months. HOCL shall have the right to cancel purchase order to no charge to HOCL in a seller's favour and HOCL shall be entitled to reimbursement of any amount already paid to seller.

12. Applicable Law and Settlement of Disputes

Purchase order shall be subject to and shall in all respects will be governed by Indian law. Any dispute which cannot be settled by mutual agreement shall be referred to arbitration. Such arbitration shall be held in Kochi, Kerala and conducted in English language only.

All disputes, differences, questions and claims arising of or under or touching this Agreement that may arise at any time between the parties hereto shall be settled amicably between the parties through mutual discussion and failing that, such disputes, differences, questions or claims shall be referred to arbitration of a sole arbitrator to be appointed by the Chairman-cum-Managing Director of Purchaser and the award passed by the Arbitrator shall be final and binding on the parties. The seat of the arbitration shall be at Kochi and the proceedings of the arbitration shall be held at Kochi in accordance with the Indian **Arbitration and Conciliation Act 1996** or any statutory modification or re-enactment of the same for the time being in force.



13. Protection

Prior to shipment, all the surfaces will be cleaned of debris and dirt. Protection from water and water vapour shall be provided by the seller. Anti corrosive treatment shall also be applied, wherever required.

14. Shipping documents

The seller shall be eligible to claim payment against letter of credit on submission of following shipping documents to Bankers.

- a. Bill of Lading or airway bill (3 negotiable copies)
- b. Sellers signed commercial invoice
- c. Sellers signed packing list
- d. Certificate of Origin
- e. Test/inspection certificate
- f. Guarantee certificate
- g. Certificate of performance; and
- h. Copies of notification of shipment sent to Insurance Company

15. Termination

HOCL reserve the right to terminate or cancel the order in whole or in part by written or telegraphic notice to the seller at any time prior to shipment from seller's shop. HOCL shall pay seller, his actual out of pocket cost including reasonable termination expenses in connection with cancellation are approved by HOCL less previously paid progress payment up to the date of notification. Upon settlement of cancellation costs, title of all affected goods, both completed and in-completed, shall pass to HOCL and seller shall safely hold the same for a reasonable time subject to receipt of HOCL written shipping instructions for other disposition instructions. However, this article shall not be applicable in case of termination by HOCL due to default by the seller.

HOCL will evaluate the tender as per the provision in the policy for local content vide Government Order Manual for Procurement of Goods (Updated June, 2022)



ANNEXURE -XII

Vendor Confirmation on Bid

The Bidder/Vendor is requested to provide the following information

Sl.No.	Requirements	Vendor's Response
1.	The Bidder/Vendor to furnish Reference List of Customers, with full address, details of contact person, where Centrifugal Air Compressor similar to offered have been supplied in the past. (Format attached)	
2.	Any additional data to supplement the manufacturing capability of the Bidder for the subject equipment.	

Sl.No.	Particulars	Vendor's Response
1.	The Bidder/Vendor shall submit the offer in two parts. 1. Technical offer & Commercial offer. 2. Price Bid	
2.	The Technical offer shall contain a comparative statement of Technical Specifications demanded by HOCL and offer details submitted by the Bidder against each clause. A just 'CONFIRMED" or 'COMPLIED' or 'YES' or 'NO - DEVIATION' or similar words in the technical comparative statement where specific details are required may lead to disqualification of the Technical Offer. However, when asked for " vendor's confirmation " the above wording can be used.	
3.	The Technical Offer shall be supported by product catalogues and data sheets and also technical details of Bought-out-Items with copies of Product Catalogue to the extent possible.	
4.	The Commercial Offer (given with the Technical Offer) shall contain the scope of supply and the un-priced part of the Price Bid, for confirmation.	



ANNEXURE -XIII

Vendor's Confirmation on Specifications of Process Air Compressor

Sl. No.	Particulars and HOCL Specification	Bidder's Offer (with complete technical details)
1.	Scope The scope of supply includes design, manufacture, supply, erection and commissioning and guarantee run of 10600Nm ³ /hr. Centrifugal Air Compressor with complete accessories at specified location in Hindustan Organic Chemicals Limited, Ambalamugal. The Centrifugal Compressor including inter-coolers and after-cooler, lube system etc. shall be a complete packaged machine consistent with good accessibility for maintenance. All equipment furnished is to be heavy-duty industrial design for long operating life. The compressor shall be the integral gear-type, directly connected at low speed bull gear to its driver.	
a.	International standard followed for design and testing of compressor	Vendor to specify
2.	Air Compressor	
a.	Type	Splitcasing
b.	Rating	Continuous
c.	Delivered flow (at site conditions) – minimum at after cooler outlet.	10,600Nm ³ /hr.
d.	Vendors should consider a pressure drop of min. 200mm of water column across the suction filter while designing the compressor package to deliver the rated discharge pressure, flow and temperature as per the technical specification in the Annexure - VIII	Vendor to confirm
e.	Rated pressure at after cooler outlet	8.5 Kg/cm ² (g)
f.	Pressure setting range	7 to 8.5 Kg/cm ²
g.	Inlet guide vane	Vendor to specify
h.	Compressor shaft power (KW)	Vendor to specify
i.	Specific power consumption at rated capacity and pressure (Nm ³ /kW)	Vendor to specify
j.	Specific power consumption at 20% turndown (Nm ³ /kW)	Vendor to specify



k.	Tolerance on specific power consumption	Vendor to specify	
l.	Turn down ratio at rated pressure (minimum 20%)	Vendor to specify	
J.	No. of stages of the Compressor	Vendor to specify	
3.	Construction		
a.	Gear Box (direct driven)	Vendor to specify	
b.	All internal parts should have good accessibility of inspection and maintenance. The casing components shall be equipped with lifting lugs, guide bolts to facilitate maintenance. It should be possible to inspect all internal components without having to dismantle other major components/major external connections.	Vendor to confirm	
c.	Impeller (construction features, material and mounting details to be enclosed)	Vendor to specify	
d.	High speed gears: Type/material/AGMA class to be specified	Vendor to specify	
e.	Radial bearings	Vendor to specify	
f.	Thrust bearings	Vendor to specify	
g.	Air and oil seals (type & material along with details)	Vendor to specify	
h.	Stainless steel expansion bellows to be provided	Vendor to confirm	
i.	Inlet & outlet cooling water manifold to be integrated in the compressor package	Vendor to confirm	
j.	Required cooling water flow for compressor package, including air cooler and oil cooler (Ltrs./minute)	Vendor to specify	
k.	Intercoolers and after coolers should be mounted and be part of the packaged compressor	Vendor to specify with details	
l.	Moisture separator with drain trap and condensate piping should be provided for each inter and after cooler	Vendor to confirm	
m.	Inter stage air piping to intercoolers and after coolers	Vendor to confirm	
n.	Copy of drawing as specified in the Tender.	Vendor to confirm	
4.	Site Conditions		
4.1	Design inlet condition		
a.	Ambient Temperature 37°C	Vendor to confirm	



	b. Relative Humidity 85% (Non-condensing)	Vendor to confirm	
	c. Altitude 17M above MSL	Vendor to confirm	
	d. Cooling water inlet temperature 34°C	Vendor to confirm	
4.2	6.6KV, 50 Hz 3 phase 3 wire supply & 415V, 3 phases, 3 wire supply will be provided at one point in / near the compressor house (the power supply may fluctuate $\pm 5\%$ from specified voltage and $\pm 3\%$ from specified frequency).	Vendor to specify	
4.3	Control system supply voltage 110V AC UPS (will be provided by HOCL)	Vendor to confirm	
4.4	Instrument Air supply – 6Kg/cm ² will be provided by HOCL	Vendor to confirm	
5.	Lube Oil System		
a.	Total lube oil system to be mounted on the base frame of the compressor package	Vendor to specify	
b.	Total lube oil system to be suitably sized so that in case of electric power failure it provides sufficient lubrication to allow the compressor to coast to a standstill without damage.	Vendor to specify	
c.	Lube oil tank capacity	Vendor to specify	
d.	Lube oil specification	Vendor to specify	
e.	Main Oil Pump (Shaft Driven)	Vendor to specify	
f.	Lube Oil Pressure	Vendor to specify	
g.	Auxiliary Oil Pump (Electrically Driven)	Vendor to specify	
h.	Lube Oil cooler	Vendor to specify	
i.	Suction drainer	Vendor to specify	
j.	Filter	Vendor to specify	
k.	Lube oil filter (duplex) differential pressure indicator	Vendor to specify	
l.	Lube oil pressure indicator	Vendor to specify	
m.	Oil level indicator	Vendor to specify	
n.	Necessary valves and safety valves	Vendor to specify	
o.	Interconnecting piping suitably terminated	Vendor to specify	
p.	Lube oil fill (initial + second fill) is in the scope of vendor	Vendor to confirm	
q.	Quantity required for one charge	Vendor to specify	
r.	Type of oil synthetic/mineral	Vendor to specify	
s.	Standardised or available in open	Vendor to specify	



	market		
t.	Recommended frequency of charge	Vendor to specify	
u.	Estimated oil consumption/hr. of operation at rated load	Vendor to specify	
v.	Approximate cost of oil/Ltr.	Vendor to specify	
III	Inter Cooler & After Cooler		
	Tube materials (SS316 & CS tube is not acceptable)	Vendor to confirm	
	Coolent (Water)	Vendor to confirm	
	Type (Shell & Tube (Removable type)/ Plate Heat Exchanger)	Vendor to confirm	
V	Air Filter		
1	Number of element in suction air filter (2 Stage filtration is required)	Vendor to specify	
2	Degree of filtration (minimum)	Vendor to specify	
3	Estimated frequency of change of filter cartridge	Vendor to specify	
4	Approximate cost of filter cartridge/No.	Vendor to specify	
VI	Oil filter		
1	Number of oil filter/unit	Vendor to specify	
2	Approximate frequency of change of oil filter	Vendor to specify	
3	Cost of oil filter/cartridge	Vendor to specify	
VII	Compressor bearings		
1	Type No. of bearings in each stage	Vendor to specify	
2	Total number of bearings	Vendor to specify	
3	Approximate life of bearings	Vendor to specify	
4	Approximate cost of bearings	Vendor to specify	
6.	Drive Motor		
1	Type: Electrical motor suitable for 6.6KV - 50 Hz continuous rating, Induction type Class F insulation, with IP 55 protection. Motor shall be mounted on Compressor base.	Vendor to specify	
2	Motor bearing & Motor cooling	Vendor to specify	
3	Motor Power Ratings	Vendor to specify	
4	Suitable HT Motor starter in the form of VCB along with Motor Protection Controls.	HOCL scope	
5	Power source 6.6KV 3 Phase upto the motor terminal.	HOCL scope	
6	6.6KV, 3 core cable of suitable size to connect motor terminal to the starter panel.	HOCL scope	



7	Motor Type (Squirrel cage induction Motor)	Vendor to specify	
8	Type of construction (IM B3)	Vendor to confirm	
9	Sound Pressure level (90db max)	Vendor to confirm	
10	Ref Standard (IEC 60034)	Vendor to confirm	
11	System Voltage (6600V AC)	Vendor to confirm	
12	No of Phases (3)	Vendor to confirm	
13	Frequency (50Hz)	Vendor to confirm	
14	Starting Method (Direct on line (DOL)	Vendor to confirm	
15	Stator Circuit (Star)	Vendor to confirm	
16	Efficiency (Above 95% (Selection of Motor can be carried out after life cycle cost study)	Vendor to confirm	
17	Motor power, shaft height, speed and type of coupling (As decided by the compressor manufacturer)	Vendor to confirm	
18	Degree of protection (IP 55 minimum)	Vendor to confirm	
19	Method of cooling (Air/water cooled)	Vendor to specify	
20	Bearing Design (Sleeve Bearings)	Vendor to confirm	
21	Insulation Class (Class F)	Vendor to confirm	
22	Mode of Operation (Continuous duty S1)	Vendor to confirm	
23	Area Classification (Safe area)	Vendor to confirm	
24	Anti-condensation heater (Required)	Vendor to confirm	
25	Anti-condensation heater Power supply (230VAC, 50Hz)	Vendor to specify	
26	Lube oil pump motor power supply (415V, 3 PHASE, 50Hz)	Vendor to confirm	
27	Ambient Temperature (40°C)	Vendor to confirm	
28	Altitude (Below 1000 meters)	Vendor to confirm	
29	Paint colour (Grey preferred)	Vendor to confirm	
30	Motor Make	Vendor to specify	
31	Type/Model No.	Vendor to specify	
32	Frame size/Designation	Vendor to specify	
33	Power rating(KW)	Vendor to specify	
34	RPM(Synch)	Vendor to specify	
35	Poles	Vendor to specify	
36	Volts	Vendor to specify	
37	Phase	Vendor to specify	
38	Frequency(Hz)	Vendor to specify	



39	Full load speed(rpm)	Vendor to specify		
40	Full load torque	Vendor to specify		
41	Full load current	Vendor to specify		
42	No load current	Vendor to specify		
43	Insulation Class	Vendor to specify		
44	Locked Rotor Current	Vendor to specify		
45	Rotor Inertia	Vendor to specify		
46	Maximum stalling time	Vendor to specify		
47	Starting Time at rated voltage	Vendor to specify		
48	Maximum no of starts per year	Vendor to specify		
49	No of consecutive starts(Cold/hot)	Vendor to specify		
50	Rated Torque	Vendor to specify		
51	Locked rotor torque (% of FLT)	Vendor to specify		
52	Pull up torque (% of FLT)	Vendor to specify		
53	Breakdown torque(% FLT)	Vendor to specify		
54	Efficiency (Vendor to specify)	100%	75%	50%
55	Power factor (Vendor to specify)	100%	75%	50%
56	Current (vendor to specify)	100%	75%	50%
57	Max sound pressure level	Vendor to specify		
58	Motor starting time (seconds)	Vendor to specify		
59	Locked rotor withstand time, cold at 100% voltage	Vendor to specify		
60	Locked rotor withstand time, hot at 100% voltage	Vendor to specify		
61	Permissible no of consecutive start of motor at ambient temperature (cold start)	Vendor to specify		
62	Permissible no of consecutive start of motor above ambient temperature (hot start)	Vendor to specify		
63	Motor thermal time constant	Vendor to specify		
64	Required wait time prior to another start after exhausting the defined number of starts.	Vendor to specify		
65	Whether motor bearings are sleeve bearing. If so, make and model no.	Vendor to specify		
66	Whether lubrication method of motor sleeve bearing is by oil circulation.	Vendor to specify		
67	Whether oil circulation of motor sleeve bearing is common with compressor.	Vendor to specify		
68	Whether common oil circulation is driven by electric driven pump.	Vendor to specify		



69	Whether Auxiliary oil pump is provided as stand by to the main lube oil pump	Vendor to specify	
70	Whether anti condensation heater is 230V, 50 Hz.	Vendor to specify	
71	Whether RTDs are provided for winding and bearing temperature detection.	Vendor to specify	
72	Whether motor thermal limit curves, overload curve, current- torque curve, speed-torque curves are provided.	Vendor to specify	
73	Minimum Two-year warranty from date of commissioning the motor is provided.	Vendor to specify	
74	Maximum bearing temperature	Vendor to specify	
75	Maximum Bearing Vibration	Vendor to specify	
76	Lubrication oil type and grade	Vendor to specify	
77	Total weight of Motor	Vendor to specify	
78	Total weight of Rotor	Vendor to specify	
79	Coupling Type	Vendor to specify	
80	Cooling Method	Vendor to specify	
81	Specific consumption at KW/NM ³	Vendor to specify	
7.	Accessories		
a.	Air Intake Filter with silencer (piping between intake to suction is in vendor's scope)	Vendor to confirm	
b.	Accessories not mentioned but considered essential shall also be included in technical offer	Vendor to confirm	
c.	Blow off valves with actuator and silencer (piping between intake to suction is in vendor's scope)	Vendor to confirm	
d.	Mounted discharge check valve	Vendor to confirm	
8.	Operation & Control		
a.	Bidder to explain the need, if any for separate instrument air (flow, pressure and line size should also be mentioned)	Vendor to specify	
b.	Control modules should have interface for interconnection to remote PC	Vendor to specify	
c.	Protection / display / Alarm /Trip for		
	1. For equipment protection	Vendor to specify	
	2. Operator's Control	Vendor to specify	
	3. Operation details	Vendor to specify	



d.	Automatic operation of IGV on ambient temperature correction.	Vendor to confirm	
e.	Pressure gauges and temperature gauges installed in the compressor package as per Annexure - XIV		
f.	The Compressor package should have noise level less than 90dB at 1M distance.	Vendor to specify	
9.	General Points		
a.	The offer shall include the catalogue for offered equipment and a complete technical description of all parts of the compressor as also the materials of construction of all parts and accessories. The bearings and seals used shall be described. Full description of compressor protection features should be included. (Both soft and hard copy)	Vendor to confirm	
b.	GA drawing, schematic and foundation diagram showing the layout and interconnections, P&I diagram shall be submitted along with the offer.	Vendor to confirm	
c.	Motor shall be of any reputed make is acceptable (ABB/Siemens/BHEL)	Vendor to confirm	
d.	Earthing of the starter panel & motor is in the scope of HOCL.	Vendor to confirm	
e.	All electrical devices, contactors, relays, limit switch, push buttons, etc. shall be from Siemens / L&T / Alstom / Cuttler Hammer / Telemecanique/ Schneider / ABB.	Vendor to confirm	
10.	Spares		
a.	Item wise breakup of mechanical, electrical and electronic spares used in the machine in sufficient quantity as per recommendation of vendor after warranty period of 2 years of trouble free operation on three shifts continuous running basis shall be offered each item by vendor as per Annexure XV - A & XV - B separately. (This spares shall be interchangeable with the same installed in the machine during supply)	Vendor to confirm	



b.	The spares to be quoted compulsorily as per the list in Annexure XV - A & XV - B .	Vendor to confirm	
c.	All types of spares for total machine and accessories shall be available for at least ten years after supply of the machine. If machine is likely to become obsolete after this period the vendor should inform HOCL sufficiently in advance and provide drawings of parts / details of spares and suppliers to enable HOCL to procure these in advance, if required.	Vendor to confirm	
d.	Vendor to confirm that complete list of spares for machine and accessories, along with item part No. / specification / type / model and name and address of the spare supplier shall be furnished along with documentation to be supplied with the machine.	Vendor to confirm	
11.	Documentation		
a.	6 set of following documents (6 hard copies + one soft copy) in English language should be supplied along with the compressor	Vendor to confirm	
	1. Operation and Maintenance Instruction	Vendor to confirm	
	2. Spare Parts manual	Vendor to confirm	
	3. GA Drawing	Vendor to confirm	
	4. Electrical Wiring Drawing Power & Control Circuits	Vendor to confirm	
	5. Assembly drawings	Vendor to confirm	
	6. Test curves related to guarantee condition	Vendor to confirm	
	7. Instrument operation and maintenance manuals, interlock, logic, loop, drawing, GAD, etc.	Vendor to confirm	
	8. Performance test report both in vendors shop and in HOCL site	Vendor to confirm	
b.	One additional set of all the above documentation shall be given in the form of Pen drive.	Vendor to confirm	
12	Training		
a.	The vendor shall train HOCL's Personnel in operation and	Vendor to confirm	



	maintenance (Mechanical, Electrical, and Instrumentation System) of the compressor at vendor's works as specified in the NIT.		
b.	The vendor shall impart training to HOCL's machine operators and maintenance crew in operation and maintenance after the commissioning of the machine at HOCL works for not less than 3 working days.	Vendor to confirm	
13.	Erection & Commissioning		
a.	Vendor to take full responsibility for supervision of the erection, vendor shall start up, test the compressor, its control and all types of other supplied equipment and prove the output. Service requirement like power, air and water shall be provided by HOCL at only one point to be indicated by vendor in their foundation/layout drawings. Other requirements like crane and helping personnel shall also be provided by HOCL. Details of these requirements should be informed by vendor in advance.	Vendor to confirm	
b.	Tools, tackles, test mandrels, instruments and other necessary equipment required to carry out all above activities should be brought by the vendor.	Vendor to confirm	
c.	Commissioning spares, required for commissioning of the machine within stipulated time shall be brought by the vendor on returnable basis.	Vendor to confirm	
d.	Schedule of erection and commissioning shall be submitted with the offer.	Vendor to confirm	
e.	Duration, terms and conditions for erection and commissioning should be furnished in detail separately by vendor along with offer.	Vendor to confirm	
14.	Testing & Acceptance		
a.	The equipment shall be offered for inspection by HOCL Engineers/TPI at suppliers works prior to despatch.	Vendor to confirm	



b.	Testing - Compressor shall be fully tested at the supplier's works to determine its mechanical and aerodynamic characteristics. Compressor air capacity, pressures and temperatures shall be measured and recorded. Compressor surge point and stonewall condition shall be demonstrated during the test. A test curve related to guarantee conditions should be submitted to the purchaser.	Vendor to confirm	
c.	The compressor should be offered for guarantee run for (uninterrupted) continuous 72 hrs. after erection and commissioning at HOCL, Ambalamugal site.	Vendor to confirm	
15.	GA drawing, P&I diagram etc. to be submitted along with offer.	Vendor to confirm	
16.	The civil foundation drawings with layout of cable trench etc. to be submitted within one month of purchase order release	Vendor to confirm	
17.	Special tools/fixtures required instruments for the maintenance of Compressor package should be brought by the vendor and same has to be handed over to HOCL after commissioning at free of cost.	Vendor to confirm	
18.	Guarantee		
	The equipment and accessories to be guaranteed for a period of 24 months from the date of commissioning and guarantee or 30 months from the date of receipt of compressor at HOCL site whichever is earlier.	Vendor to confirm	
19.	The quoted amount includes supply, erection, commissioning and guarantee run, supply of spares, training, AMC charges after warrantee period of 2 years, etc. as per the Annexure-VIII	Vendor to confirm	
20	The total amount quoted by the vendor is inclusive of Item No. 1 to 19 in this schedule.	Vendor to confirm	



ANNEXURE -XIV
LIST OF LOCAL INDICATION REQUIRED

Pressure gauges / Pressure Transmitter			
All the pressure gauges shall be installed with isolation valves, material SS316.			
Sl No	Description	Type	Remarks
1	Inlet Air filter differential pressure	DP gauge	
2	1 stage outlet Pressure	Pressure gauges / Pressure Transmitter	
3	2nd stage inlet pressure	Pressure gauges / Pressure Transmitter	
4	2nd stage Outlet pressure	Pressure gauges / Pressure Transmitter	
5	3rd stage inlet pressure	Pressure gauges / Pressure Transmitter	
6	3rd stage outlet air pressure	Pressure gauges / Pressure Transmitter	
7	Main lube/ Auxiliary lube oil pump pressure	Pressure gauges / Pressure Transmitter	
8	Oil pump pressure	Pressure gauges / Pressure Transmitter	
9	Oil filter inlet pressure	Pressure gauges / Pressure Transmitter	
10	Oil filter outlet pressure	Pressure gauges / Pressure Transmitter	
11	1 st stage intercooler cooling water outlet pressure	Pressure gauges / Pressure Transmitter	
12	2 nd stage intercooler cooling water outlet pressure	Pressure gauges / Pressure Transmitter	
Temperature gauges / Temperature Transmitter			
All the temperature gauges shall be installed with thermowell, material SS316.			
1	1 st stage outlet air temperature	Temperature gauge / Temperature Transmitter	
2	2 nd stage inlet air temperature	Temperature gauge / Temperature Transmitter	
3	2 nd stage outlet air temperature	Temperature gauge / Temperature Transmitter	
4	3 rd stage inlet air temperature	Temperature gauge / Temperature Transmitter	
5	3 rd stage outlet air temperature	Temperature gauge / Temperature Transmitter	
6	Oil cooler Inlet temperature	Temperature gauge / Temperature Transmitter	
7	Oil cooler outlet temperature	Temperature gauge / Temperature Transmitter	
8	1 st stage intercooler cooling water outlet temperature	Temperature gauge / Temperature Transmitter	
9	2 nd stage intercooler cooling water outlet temperature	Temperature gauge / Temperature Transmitter	



ANNEXURE -XV - A
SPARE LIST

I. SPARES & CONSUMABLES FOR OPERATION

Sl.No.	PART DESCRIPTION	QUANTITY
A	Compressors:	
1	Set of all shaft seals (lip/ carbon rings) (Bull gear)/labyrinth	1 Set
2	Set of air filter elements (primary)	2 Sets
3	Set of air filter elements (secondary)	2 Sets
4	Set of all air and oil seals(carbon seals)- each stage	1 Set
5	Set of all "O" rings	1 Set
6	Set all gaskets/packing (including Inter/After cooler side strip)	1 Set
7	Set of coupling and flexible elements (motor to compressor)	1 Set
8	Set of gasket for piping	1 Set
9	Oil for one time replacement	1 Set
10	Set of all compressor bearings Bull gear Bearing (plain & thrust) Each stage plain bearing Each stage thrust bearing	1 Set
B	Auxilliary Equipment (Lube Oil System)	
B.1.1	Lube Oil Filters	
a	Set of filter elements (each set =2 Nos for dual filters)	2 Sets
b	Set of filter gasket/O-rings	2 Sets
B.1.2	Oil Cooler	
a	set of gaskets	1 Set
C	Additional items	
1	Sealing compound	1Set
2	Oil mist eliminator filter elements	1 Set
D	Instrument Spares	
1	Vibration probe	2 Nos.
2	Vibration Transmitter	1 No.
3	Probe extension cable	1 No
4	I/P or V/P converter (as the case may be)	1 No
5	Pneumatic /electric actuator for inlet guide vane control valve (as the case may be)	1 No.

Note:

1. The spares and consumables in the above list is to be supplied along with the compressor package and the cost towards the same shall be included in the price of Sl.No.1 of Table - A in the Price Break-up - Annexure - P
2. The cost towards the above list will be taken for price comparison.



ANNEXURE -XV - B

II. SPARES FOR SERVICE

Sl.No.	PART DESCRIPTION	QUANTITY
A	Compressors:	
1	Set of all compressor bearings Bull gear Bearing (plain & thrust) Each stage plain bearing Each stage thrust bearing	1 Set
2	Set of all shaft seals (lip/ carbon rings) (Bull gear)/labyrinth	1 Set
3	Set of air filter elements (primary)	1 Set
4	Set of air filter elements (secondary)	1 Set
5	Set of all air and oil seals(carbon seals)- each stage	1 Set
6	Set of all "O" rings	1 Set
7	Set all gaskets/packing (including Inter/After cooler side strip)	1 Set
8	Set of coupling and flexible elements (motor to compressor)	1 Set
9	Set of gasket for piping	1 Set
10	Oil for one time replacement	1 Set
B	Auxiliary Equipment (Lube Oil System)	
B.1.1	Lube Oil Filters	
a	Set of filter elements (each set =2 Nos for dual filters)	1 Sets
b	Set of filter gasket/O-rings	1 Sets
B.1.2	Oil Cooler	
a	set of gaskets	1 Set
C	Additional items	
1	Sealing compound	1 Set
2	Oil mist eliminator filter elements	1 Set
D	Electrical (For HT motor)	
1	NDE Bearing set with all accessories such as bearing bracket, oil ring, oil seal inside/outside, machine seal etc.	1 Set
2	DE Bearing set with all accessories such as bearing bracket, oil ring, oil seal inside/outside, machine seal etc.	1 Set



3	Motor Current Transducer	1 No
E	Instrument Spares	
1	Pressure transmitter	1 No
2	Temperature transmitter	1 No
3	Vibration probe	2 Nos.
4	Vibration transmitter	1 No
5	Probe extension cable	1 No
6	IGV(pneumatic control)maintenance kit(including diaphragm packing set, gasket set, piston ring, repair kit) / Servo Motor Control module	1 No
7	Blow off(pneumatic control) valve maintenance (including wet parts of CV, actuator diaphragm, seal kit)	1 No
8	I/P or V/P converter (if required)	1 No
9	Seal air pressure switch (if required)	1 No
10	DP Transmitter (Inlet air filter)	1 No
11	HMI Control Unit	1 No
12	Servo motor for inlet guide vane control valve	1 No
F	Any other critical spare items required for the Trouble free operation of equipment during the AMC period shall be added by bidder.	

* bidders should specify the items which are not available in the package

Note:

1. The spares and consumables in the above list is to be supplied as and when required and the price towards the same shall be valid till expiry of warranty period.
2. The rate for each item in the above list shall be submitted on or before the due date in a separate sealed and stamped envelope to the following address. The same will be opened physically in presence of Technically qualified bidders as the price bid opening date. Bidders shall submit their offer for Spares and Consumables in Annexure XV - B in one sealed envelope to the following address and super-scribed with Enquiry No. and due date and Offer for Spares for servicing of Process Air Compressor for Cumox Plant (K2501 D) so as to reach on or before the due date of the bid submission

Address:

**Chief General Manager (HR/Engg.) & FM
Hindustan Organic Chemicals Limited
Ambalamugal
Kochi , Kerala - 682 302**

HOCL will place Purchase Order for the spares and consumables in Annexure - XV B only as and when required and under sole discretion of HOCL.



ANNEXURE -XVI

NO DEVIATION STATEMENT

Technical

HOCL floated this tender as 'No Deviation Policy" basis. However, if party wants to inform or suggest any deviation may please use the following format. Acceptance/Rejection of deviation is under sole desecration of HOCL and decision is binding to all parties.

The requirements and guidelines set forth in the Technical Specification are binding and the Bidder shall take due cognizance of all the clauses before submitting the Bid. If however, any deviation from Technical Specification requirements, sought by the Bidder the same shall be indicated clearly against the relevant Technical Specification clauses in the below format list of deviations. Any deviation not listed in the format shall not be considered. It will be presumed that the Bidder has accepted all the other conditions stipulated in Technical Specification for all intent and purpose wherever the deviations are not clearly earmarked.

ANY DEVIATION IN TECHNICAL REQUIREMENT SHALL BE CLEARLY MENTIONED IN THE TECHNICAL CONFIRMATION SHEET OF THIS NIT.

Commercial

Bidder must go through all the commercial terms and conditions and any deviation/exceptions to it shall be listed below in the below format for list of deviation.

Format for List of Deviations/Exceptions

Sl.No.	Tender Clause Reference No.	Description of Clauses	Proposed Deviation

Note : Only deviation list in the enclosed format will be considered.



ANNEXURE -XVII

BIDDERS PROVEN TRACK RECORD

Sl.No.	Parameter	Information on offered Model	Information on Referenced Existing Installations		
			Ref 1	Ref: 2	Ref: 3
1.0	Basic Parameters to meet requirements of Technical BQC				
1.1.	Whether the bidder is manufacturer of the offered packaged Integrally Geared Centrifugal Air Compressor (As per API 672) (YES/NO)				
1.2	Whether the bidder is an Indian manufacturer who is a Subsidiary (Principal holding at least 51% shares) of a Foreign Principal or another 51% owned subsidiary of the Foreign Principal (called group company hereinafter) or the holding company of the Foreign Principal (YES/NO)				
In case, the bidder is the manufacturer of the offered Packaged integrally geared centrifugal air compressor (as per Sl.No.1.1 above), bidder has to confirm the following:					
2.0	Whether the Bidder is the single point responsibility vendor (SPRV) for Packaged integrally geared Compressor required for the job? (YES/NO)				
3.0	Whether the Bidder have engineered, designed, manufactured, packaged, tested and supplied, in the last FIVE (5) years, from the proposed manufacturing plant, at least ONE (1) Packaged integrally geared centrifugal air compressor set (as per API 672) which has electrical motor as a driver and shall be from same model series having similar 80% or higher driver power, Actual Flow rate (80% or higher) and equal or higher discharge pressure as offered. As a minimum, this package shall have completed minimum ONE (1) Year of operation at site as on the date of bid due date.				



	(YES/NO)				
	Note: The FIVE (5) year time period mentioned above shall be reckoned from the date of bid due date.				
Further to authenticate the above statements, the details of offered Packaged Integrally geared Compress or package shall be furnished as under:					
	Make				
	Model Series				
	Driver Rating				
	Flow Rate (Nm ³ /hr)				
	Discharge Pressure (kg/cm ² (g))				
	Number of Units Supplied				
	Manufacturing plant from where the packaged integrally geared centrifugal compressor is designed, engineered, manufactured, packaged, tested and supplied.				
	Date of Letter of Award/Order				
	Date of Delivery of Complete Packaged Integrally geared Centrifugal Compressor package				
	Has the complete Packaged Integrally geared Centrifugal Compressor package completed ONE Year of operation at site, as on bid due date? (YES/NO)				
	Purchaser's Name and Address:				
	Name (Company/Organization)				
	Name of the Contact Person				



	Address including Telephone No./Fax No./E-mail ID				
	Are duly endorsed supporting documents as specified in RFQ / NIT furnished? (YES/NO)				
4.0	In case, the bidder is an Indian manufacturer who is a Subsidiary (Principal holding atleast 51% shares)of a Foreign Principal or another 51% owned subsidiary of the Foreign Principal (called group company herein after) or the holding company of the Foreign Principal				
4.1	Whether the Bidder is the single point responsibility vendor (SPRV) for Packaged Integrally geared Centrifugal Compressor required for the job? (YES/NO)				
4.2	Whether the Bidder's Foreign Principal/ Group Company/ Holding company of foreign principal has engineered, designed, manufactured, packaged, tested and supplied, in the last FIVE (5) years, from the proposed manufacturing plant, at least ONE (1) Packaged integrally geared centrifugal air compressor set (as per API 672) which has electrical motor as a driver and shall be from same model series having similar 80% or higher driver power , Actual Flow rate (80% or higher) and equal or higher discharge pressure as offered.As a minimum this package shall have completed minimum ONE (1) Year of operation at site as on the date of bid due date. (YES/NO) Note: The FIVE (5) year time period mentioned above shall be reckoned from the date of bid due date.				
4.3	Whether the Bidder is a subsidiary of the Foreign Principal (Principal holding at least 51% shares) for at least last one year, reckoned from the bid due date (YES/NO)				



4.4	<p>Whether the bidder and the Foreign Principal or group company of foreign principal has ensured that scope / activity matrix shall delineate according to the experience and capability of the Indian subsidiary vis-à-vis the company whose experience is being considered.</p> <p>(YES/NO)</p>				
4.5	<p>Whether the bidder has executed and supplied minimum TWO (2) Orders for packaged integrally geared centrifugal air compressor {having at least 50% or higher driver rating (kW)}, as offered in last TEN (10) years from bid due date.</p> <p>(YES/NO)</p>				
4.6	<p>a. Location of Bidder's engineering facility</p> <p>b. Whether the Bidder have engineering facility in India, corresponding to matrix cited above, duly approved by the Principal or the Group Company, as the case may be.</p> <p>(YES/NO)</p>				
4.7	<p>Whether the Principal or the Group Company as the case may be, shall carry out the following activities:- Design/Application engineering- Approval of Sourcing of components- Approval of Quality Assurance Plans (QAP) identifying Hold, Check & Witness stages (by Principal)- Responsibility Matrix</p> <p>(YES/NO)</p>				
4.8	<p>Whether bidder be sourcing duly tested bare compressor from the Principal OR the Group Company, whose experience is being considered and source non critical components/auxiliaries himself</p> <p>OR</p> <p>Whether Bidder be either sourcing critical components (i.e. impellers & diffusers (as applicable), complete rotor(s), casing (casing includes all pressure containing parts), guide vanes (as applicable), complete gear assembly & bearings) from the Principal or</p>				



	the Group Company or directly from the manufacturers supplying the same to the Principal or the Group Company, whose experience is being considered (a certificate to this effect shall be provided by the Principal or the Group Company) and source non critical components/auxiliary components supplies himself. (in line with the scope matrix furnished.) (YES/NO)				
4.9	Whether Bidder has an established service facility in India (either his own or an approved service provider) which must be approved by Principal or the Group Company, as the case may be (YES/NO)				
4.10	Whether the Bidder have Manufacturing, Assembly and Testing facility for the proposed scope.				
Further to authenticate the above statements, the details of offered Packaged integrally geared centrifugal Compressor package shall be furnished asunder:					
	Details for meeting requirements of Technical BQC by the Bidder's Foreign Principal/Group Company				
	Compressor Manufacturer				
	Make				
	Model Series				
	Driver Rating				
	Flow Rate (Nm ³ /hr)				
	Discharge Pressure (kg/cm ² g)				
	Number of Units Supplied				
	Manufacturing plant from where the Packaged integrally geared centrifugal Compressor is designed, engineered, manufactured, packaged, tested and supplied. Manufacturing plant from where the Packaged integrally geared centrifugal Compressor is designed, engineered, manufactured, packaged, tested and supplied.				
	Date of Letter of Award/Order				
	Date of Delivery of Complete packaged integrally geared centrifugal compressor package				



Has the complete packaged integrally geared centrifugal compressor package completed ONE Year of operation at site, as on bid due date? (YES/NO)				
Purchaser's Name and Address:				
Name (Company/Organization)				
Name of the Contact Person				
Address including Telephone No./Fax No./E-mail ID				
Details of Two Past Orders for meeting the requirements of 4.5 above by the Indian subsidiary				
Are duly endorsed supporting documents as specified in RFQ/NIT furnished? (YES/NO)				
Name of the Indian subsidiary				
Compressor Model Series				
Manufacturer of Packaged Integrally Geared Centrifugal Compressor				
Compressor as per API-672. (YES/NO)				
Driver Rating				
Number of Units Supplied				
Manufacturing Plant from where the Complete Packaged integrally geared centrifugal Compressor Package (API 672) is executed and supplied				
Date of Letter of Award/Order				
Date of Delivery of Complete packaged integrally geared centrifugal compressor package				
Purchaser's Name and Address:				
Name (Company/Organization)				
Name of the Contact Person				
Address including Telephone No./Fax No./E-mail ID				
Are duly endorsed supporting documents as specified in RFQ / NIT furnished? (YES/NO)				



Supply, Erection and Commissioning and AMC of Process Air
Compressor For Cumox Plant (K2501 D)
HOCL/Proj/K 2501 D/23 (R)

ANNEXURE -XVIII

LETTER OF AUTHORITY

**PROFORMA FOR LETTER OF AUTHORITY FOR ATTENDING
SUBSEQUENT NEGOTIATIONS/CONFERENCES**

Ref. No.

Date:

**Chief General Manager (Production/TSS/Projects)
Hindustan Organic Chemicals Limited
Ambalamugal
Kochi
Kerala - 682 302**

Attention :

**Client : HINDUSTAN ORGANIC CHEMICALS LTD.
Project : PROCESS AIR COMPRESSOR
RFQ No. : HOCL/Proj/K 2501 D/23 (R).
Item : CENTRIFUGAL COMPRESSOR
Due Date :**

Dear Sirs / Madam,

We _____ hereby authorize following representative(s) to attend for any correspondence and communication against above Bidding Document:

Name & Designation _____ Signature _____

Name & Designation _____ Signature _____

We confirm that we shall be bound by all commitments made by aforementioned authorised representatives.

Yours faithfully,

Signature

Name & Designation

For and on behalf of

NOTES:

Bidder's authorized executive is required to carry letter of authority while attending the aforesaid meeting(s) and submit the same to HOCL. This letter of authority should be on the letter head of the bidder and should be signed by a person competent and having the power of attorney to bind the bidder.



ANNEXURE -XIX

DETAILS OF TENDERER

A. General information:	
1	Name of Company
2	Registration No.
3	Number of Years in Operation
4	Registered Address
5	Operating Address
6	Telephone No
7	Telefax
8	Email Address
9	GST No.
10	PAN No.
11	TIN No.
B. FINANCE	
1	Name & Address of Banks and Branches used :
1.1	
1.2	
1.3	
2	Annual Turnover of the Firm/ company:
2.1	2020– 2021: _____(Value in Lakhs)
	2021 – 2022: _____(Value in Lakhs)
	2022 – 2023: _____(Value in Lakhs)
3	Bidders are to submit copy of valid current Income Tax Return submitted, GST Registration, (wherever applicable) failing which their offer may be liable to be rejected.



C EXPERIENCE:						
1 Past Project Experience:						
Sl. No.	Year awarded	ProjectName	Capacity & Class of Compressor Supplied	Contract Value (INR)	Purchaser Name & Reference (Contact Details)	Facility Approved By: (Name of Approving Agency)
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
1.10						
2 Details of Ongoing project:						
Sl. No.	Year awarded	Project Name	Equipments Supplied	Contract Value (INR)	Purchaser Name & Reference (Contact Details)	Remarks
2.1						
2.2						
2.3						
2.4						
2.5						
D. QUALITY						
1.	The equipment supplied should generally comply with the following guidelines / standards. API 672 /API 614					
2.	Whether certified any ISO standard in Quality Management System/ Environmental Management System/ Energy Management System etc.					



ANNEXURE -XX

DOCUMENTS ON AUTHORITY BY CEO/CFO/COMPANY SECRETARY

NAME OF WORK: _____

BIDDING DOCUMENT NO. _____

SELF-CERTIFICATION

I, _____ S/o / D/o of _____, working as CEO/CFO/Company Secretary (indicate, as applicable) of the Company _____ having its registered office at _____ certify that all the details including documents pertaining to Bidder Qualification Criteria signed by undersigned vide our offer reference _____ against your Enquiry document _____, are true, authentic, genuine and exact copy of its original.

It is certified that none of the documents are false/forged or fabricated. All the documents submitted has been made having full knowledge of (i) the provisions of the Indian laws in respect of offences including, but not limited to those pertaining to criminal breach of trust, cheating and fraud and (ii) provisions of bidding conditions which entitle the Owner to initiate action in the event of such declaration turning out to be a misrepresentation or false representation.

I further certify that further documents, if any, required to be submitted by our company, shall be submitted under my knowledge and those documents shall also be true, authentic, genuine, exact copy of its original and shall not be false/forged or fabricated.

DECLARATION

I, _____ S/o / D/o of _____, working as CEO/CFO/Company Secretary (indicate, as applicable) of the Company _____ having its registered office at _____ with reference to our bid _____ against your Enquiry document _____, declare that in case, at a later date, any of the document submitted in our bid referred above is found to be false/forged or fabricated, I, shall be held responsible for the same and Owner has every right to take action against me and my company, as deemed fit as per provisions of the bidding documents including Owner's right to put our company on Holiday/Black list for future business with Owner.

Specimen Signature of authorized representative

Signature

Name & Designation (CEO or CFO or Company Secretary)

COMPLIANCE TO AUTHENTICATION REQUIREMENT

We hereby confirm that all authenticated documents submitted for meeting the BQC are certified as per the authentication requirement defined in the bidding document.

SIGNATURE OF BIDDER : _____

NAME OF BIDDER : _____

COMPANY SEAL : _____



**ANNEXURE -XXI
AUTHORIZATION AFFIDAVIT**

(To be submitted in Non Judicial stamp paper of ₹200/-)

AFFIDAVIT OF _____ S/o D/o _____, resident of
_____ EMPLOYED AS _____ WITH
_____ HAVING OFFICE AT _____ PIN

I, the above named deponent do hereby solemnly affirm and state as under :

1. That I am the authorized representative and signatory of M/s. _____
2. That the document (s) submitted, as mentioned hereunder, by M/s. _____ along with the Bid document submitted under Covering Letter No. _____ dated _____ towards Tender No. _____ for _____ (Project) has / have been submitted under my knowledge.

Sl.No.	Document Reference No. & Date	Document Subject	Issuing Authority

3. That the document(s) submitted, as mentioned above, by M/s _____ along with the Bid Document for meeting the Bidder Qualification Criteria there under, vide Covering Letter No. _____ dated _____, towards Tender No. _____ for _____ (Name of Work) are authentic, genuine, copies of their Originals and have been issued by the Issuing Authority mentioned above and no part of the document(s) is/are false, forged or fabricated.



4. That no part of this Affidavit is false and that this Affidavit and the above declaration in respect of genuineness of the documents has been made having full knowledge of

- I. The provisions of the Indian Penal Code in respect of offences including, but not limited to those pertaining to criminal breach of trust, cheating and fraud and
- II. Provisions of bidding conditions which entitle the Owner to initiate action in the event of such declaration turning out to be a misrepresentation or false representation.

5. I depose accordingly,

DEPONENT

VERIFICATION

I, _____ the deponent above named, do hereby verify that the factual contents of this Affidavit are true and correct. No part of it is false and nothing material has been concealed there from.

Verified at _____ on this _____ day of
_____ 20 _____ .



ANNEXURE -XXII

TENDER AFFIRMMENT

Date_____

To

M/s **Hindustan Organic Chemicals Limited**

Ref. Your TE document No._____dated _____

We, the undersigned have examined the above-mentioned TE document, including amendment/corrigendum No. _____, dated_____ (if any), the receipt of which is hereby confirmed. We now offer to supply and deliver____ (Description of goods and services) in conformity with your above referred document for the sum of_____ (total tender amount in figures and words), as shown in the price schedule(s), attached herewith and made part of this tender.

If our tender is accepted, we undertake to supply the goods and perform the services as mentioned above, in accordance with the delivery schedule specified in the List of Requirements.

We further confirm that, if our tender is accepted, we shall provide you with a performance security of required amount in an acceptable form in terms of NIT, HOCL/Proj/K 2501 D/23 (R)..

We agree to keep our tender valid for acceptance as required in the NIT No. HOC/Proj/K 2501 D/23, read with modification, if any or for subsequently extended period, if any, agreed to by HOCL. We also accordingly confirm to abide by this tender up to the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

We confirm that we do not stand deregistered/banned/blacklisted by any Govt. Authorities.

We confirm that we fully agree to the terms and conditions specified in above mentioned TE document, including amendment/ corrigendum if any.

(Signature with date)

(Name and designation) Duly authorized to sign tender for and on behalf of

NOTE: One Un-priced tender form to be enclosed with Technical Bid & One Priced tender form to be enclosed with Price Bid.



ANNEXURE -XXIII

**(Certification by Statutory Auditor/CA)
(To be Printed on Letter Head of Company)**

FINANCIAL DETAILS

We, M/s. _____, having our registered office at _____ certify that

M/s. _____ is a CA firm having their registered office address _____ having certificate number _____ are our statutory auditor.

OR

We, M/s. _____, having our registered office at _____ certify that statutory auditor is not mandatory for the company as per prevailing law and M/s. _____ a CA firm having their registered office address _____ having certificate number _____ are practicing Chartered Accountant, not being an employee/Director and not having any interest in our Company.

Financial details of our Company, as per latest available audited balance sheet are as follows: Company too select either of the following options and strike off the other.

- a. In case bidder is a parent company, i.e. having its wholly owned subsidiaries: Company to select either of the following options and strike off the other.
- i. Financial details are of parent company without the financial data of subsidiaries.
 - ii. Financial details are of parent company including financial data of subsidiaries. It is certified that separate annual report of bidder, without the financial data of subsidiaries, is not prepared and audited.

OR

- b. In case bidder is a parent company : Auditor to select either of the following options and strike off the other.
- i. Financial details are of subsidiary company.
 - ii. Financial details are of parent company including financial data of subsidiaries. It is certified that separate annual report of bidder, i.e. Subsidiary, is not prepared and audited.

OR

- c. In case bidder does not have any subsidiary or parent company, financial details of are of the company itself..



Sl.No.	Description	Year	Value Currency (____)
1	Turnover	Latest financial year (_____)	
		Preceding first year (_____)	
		Preceding second year (_____)	
2	Net Worth	Latest financial year (_____)	
3	Working Capital	Latest financial year (_____)	

(*) Indicate positive or negative (value is not mandatory).

Note:

1. Working capital calculation - Working capital shall be current assets minus current liabilities.
2. Turnover - Turnover shall be calculated including Excise Duty but excluding other incomes.
3. Net Worth, working capital and Turnover has been calculated using the above mentioned formulae and after giving effect to the impact of Audit Qualifications given in the Audit Report.

Signature

Name & Designation

Sign and Stamp of Statutory Auditor / CA (on all pages)



ANNEXURE -XXIV

PERFORMANCE CERTIFICATE

(On Customer's Letter Head)

1. Supplier of the machine :

2. Make & Model of the Equipment :

3. Month & Year of Commissioning :

4. Application :

5. Capacity :

- Output Pressure :

- Medium Handled :

6. Performance of the Machine : Best in the market / Satisfactory / Good /
(Strike off whichever is not applicable) Average / Not Satisfactory
Good /

7. Any other remarks:

Certified that M/s _____(name & address of the manufacturer) Supplied us
_____Nos (indicate quantity) of air compressor system, _____ (indicate capacity & type of
the equipment) against our order no _____ dt. _____ (please indicate order no
& date as figuring in the performance statement). The equipment was installed, commissioned & handed over to us on
_____ (indicate date)& since then the equipment has been working to our entire satisfaction.

Signature & Seal of the Authority
Issuing the performance certificate

Date:
Place :



ANNEXURE -XXV

TECHNICAL COMPLIANCE STATEMENT

I, on behalf of M/s. _____ confirm that the proposal of
_____ quoted by M/s. _____ for
_____, against our Tender No. HOCL/Proj/2501 D/23 is in total
compliance to the scope as well as all the technical specification and no deviation, variation or reservation
whatsoever has been mentioned in the technical offer. It is further agreed that the technical details furnished in our
offer will be reviewed by HOCL during detailed engineering stage after order and a change required to meet the
requirements of enquiry specification including amendments(s) (if any) required will be incorporated by us without
any price and time implication, to meet the contract specifications.

(BIDDERS SIGNATURE AND STAMP)



ANNEXURE -XXVI

CHECKLIST:
(GENERAL CONDITONS)

NAME OF TENDERER:

NAME OF MANUFACTURER:

SI No.	Activity	Yes/ No/ NA	Remarks
1. a.	Have you enclosed EMD of required amount for the quoted schedules?		
b.	EMD is furnished in the form of Bank Guarantee as per NIT		
c.	Have you kept validity of Bank Guarantee for 180 days from Technical Bid Opening date as per NIT		
2. a.	Have you enclosed duly filled Tender Form as per format in NIT		
b.	Have you enclosed Power of Attorney in favour of the signatory?		
3.	Are you a SSI unit, if yes have you enclosed certificate of registration issued by Directorate of Industries/NSIC		
4. a.	Have you enclosed clause-by-clause technical compliance statement for the quoted goods vis-à-vis the Technical specifications?		
b.	In case of Technical deviations in the compliance statement, have you identified and marked the deviations?		
5. a.	Have you submitted satisfactory performance certificate as per the Proforma for performance statement in respect of all orders?		
b.	Have you submitted copy of the order(s) and end user certificate?		
6.	Have you submitted manufacturer's authorization as per NIT		
7.	Have you submitted prices of goods in the Price Schedule as per NIT		



SI No.	Activity	Yes/ No/ NA	Remarks
8.	Have you ensured validity of your offer for 180 days from the Technical bid Opening date as per the NIT		
9.	Have you furnished Income Tax Account No. as allotted by the Income Tax Department of Government of India?		
10.	Have you intimated the name and full address of your Banker (s) along with your Account Number		
11.	Have you fully accepted payment terms as per NIT		
12.	Have you fully accepted delivery period as per NIT		
13.	Have you accepted the warranty as per NIT		
14.	Have you accepted terms and conditions of NIT		
15.	Have you furnished documents establishing your eligibility & qualification criteria as per NIT		
16.	Have you furnished Annual Report (Balance Sheet and Profit & Loss Account) for last three years prior to the date of Tender opening?		
17.	Have you enclosed signed Integrity Pact in the prescribed format?		

Notes to Bidder

1. All pages of the Tender should be page numbered and indexed.
2. The Tenderer may go through the checklist and ensure that all the documents/confirmations listed above are enclosed in the tender and no column is left blank. If any column is not applicable, it may be filled up as NA.
3. It is the responsibility of tendered to go through the TE document to ensure furnishing all required documents in addition to above, if any.

(Signature with date)(Full name, designation & address of the person duly authorized sign on behalf of the Tenderer)

For and on behalf of (Name, address and stamp of the tendering firm)



ANNEXURE -XXVII

COMMERCIAL SUMMARY OF BID

HOCL Enquiry No. dt.

Bid Quotation/Reference No. dt.

Sl.No.	Particulars	Bidder's Confirmation/Comments
1	Bidder's Name & Address	
2	GST Registration No.	
3	Email ID	
4	Telephone No./Mobile No.	
5	Contact Person	
6	Price basis : (FOB HOCL)	
7	Packing, forwarding transportation charges and Transit insurance to be included in the price.	
8	Third party inspection charges to M/s. HOCL Account.	
9	HSN Code (indicate as applicable)	
10	GST (indicate % as applicable)	
	a. CGST %	
	b. SGST %	
	c. IGST %	
11	Delivery period (shall be within 8 months from the date of LOI as per NIT. (confirm YES/NO)	
12	Acceptance of HOCL payment terms as per NIT. (confirm YES/NO)	
13	Validity of Offers (shall be for minimum 180 days from the date of techno-commercial bid opening)	
14	Firmness of price till execution of order (confirm YES/NO)	
15	Submission of Performance Bank Guarantee (PBG) for amount equivalent to 10% amount of Purchase Order. Value as per attached format as per NIT (confirm YES/NO)	
16	Guarantees: as per NIT	
17	Acceptance of General Terms and Conditions of Purchase Order/Enquiry (confirm YES/NO)	



Sl.No.	Particulars	Bidder's Confirmation/Comments
18	Technical Confirmation to HOCL's specification	Furnished/Not furnished
19	Prices have been quoted on "FIRM PRICE" basis only.	Yes / No
20	Liquidated damages @ ½% per week subject to a maximum of 5%	
21	Risk Purchase as per NIT	Acceptable / Not Acceptable
22	Payment Terms: As per Annexure - X - A	
24	Performance Guarantee (PG)	Will be provided/will not be provided
25	Guarantee (we require for a minimum period of 24 months from the date of commissioning & acceptance – please specify)	Acceptable / Not acceptable
26	Approximate Net weight of the total consignment (please specify)	
27	Approximate Gross weight of the total consignment (please specify)	

Signature & Office Seal of the bidder



ANNEXURE - XXVIII

CORPORATE GUARANTEE

(To be submitted in Non Judicial stamp paper of ₹200/-)

This Corporate Guarantee made on this ___ day of _____ month _____ year by M/s _____(Parent Company/Group Company/affiliate), a Company organized and existing under the laws of _____ and having its registered office at _____(hereinafter referred to as the "Guarantor" which expression shall unless repugnant to the subject or context deemed to include their successors and assignees) at the request and/or behest of _____, a Company organized and existing under the laws of _____ having its registered office at _____(hereinafter referred to as "Bidder"), in favour of Engineers India Ltd/ _____ (insert name of client), a Public Company organized under the laws of India having its Registered office at _____(hereinafter referred to as "Beneficiary").

Whereas:

The Beneficiary floated a public tender dated _____no. _____ for _____ (Purpose).The Bidder has submitted its quotation dated _____ and has represented to the Beneficiary that the Bidder is the wholly owned subsidiary/Group Company/affiliate of the Guarantor and that the Bidder has access to and the Guarantor shall make available necessary financial and technical support as required by the Bidder for successful execution of the contract, if awarded to the Bidder, for the Purpose.Accordingly, the Guarantor is ready and willing to give this Corporate Guarantee on the terms and conditions hereinafter contained.

We, the Guarantor are hereby recording the terms and conditions governing our obligations under this Guarantee with the intent of being legally bound by the same and hereby agree, covenant and bind ourselves as follows:-

1. The Guarantor hereby irrevocably and unconditionally guarantees to the Beneficiary, the performance by the Bidder of its obligations under the terms and conditions of the tender and the contract, upon the contract being awarded to them. The Guarantor shall execute such other deeds and documents as may be desired by the Beneficiary in this regard.



2. The Guarantor unconditionally and irrevocably guarantees to the Beneficiary that it will make available or cause to be made available to the Bidder all financial, technical support and expertise, expert manpower and procurement assistance and project management and other resources required to ensure that the Bidder can carry out its obligations as per the tender terms and conditions and that the Bidder at all times fully and effectively discharge its obligations under the terms and conditions of tender, including by discharging the obligations within the time and cost so stipulated.
3. The Guarantor hereby agrees that if the Bidder shall in any respect commit any breach or fails to fulfill any of the terms of the contract/tender or complete it in all respects or if there is a failure to make any supplies or if any material, equipment or machinery under the contract so supplied is not of the required specifications or does not perform as envisaged under the contract, then the Guarantor undertakes to forthwith perform the same and fulfill all the obligations required under tender/contract terms & conditions (including payment of any liquidated damages) on behalf of the Bidder without any extra cost and time implications. The decision of the Beneficiary with respect to breach/failure by the Bidder shall be final and binding on the Guarantor.
4. The Guarantor further undertakes to indemnify and keep harmless the Beneficiary against all losses, damages, expenses, claims, costs (including legal costs and attorney fees) which may be suffered or incurred or threatened to be suffered or incurred by the Beneficiary due to the failure or breach on the part of the Bidder under the contract and/or the Guarantor under this Guarantee
5. The Guarantor assures and undertakes that during the term of the contract or of any guarantee for performance as per the contract, the Bidder shall continue to be the wholly owned subsidiary/affiliate/group company of the Guarantor and the Guarantor's liability shall not be affected due to any incapacity or lack of power or legal personality or change in the status of the Bidder or the Guarantor.
6. The Guarantor's liabilities under this Guarantee shall not exceed the maximum limit liability (if any) of the Bidder under the tender/contract terms and conditions.
7. The obligation of the Guarantor shall take effect from the date of this Guarantee and shall be independent of any other security given under the contract and remain in full force until all the obligations of the Bidder under the tender/contract have been fully performed and discharged and/or all sums of money payable to Beneficiary have been fully paid.



8. The liabilities of the Guarantor shall not be discharged, diminished or otherwise affected by:-
- Any change in the Articles of Association or Bye-Laws or constitution of the Bidder or the Guarantor.
 - Any amendment to the contract (including any extension of time) or any waiver granted to the Bidder.
 - The dissolution, amalgamation, reconstruction or reorganization of the Bidder or the Guarantor.
9. NOTICE: Any notice, demand, declaration or other communication to be given by the Beneficiary or the Guarantor to the other shall be in writing, in English language and delivered in person or by Air Mail or by Courier Services or by Facsimile or by E-Mail to the address given below and shall be deemed to be validly served after two days from the date thereof:-

For Guarantor

Attention of

Mailing Address

Email Address

Fax No.

For Beneficiary

Attention of

Mailing Address

Email Address

Fax No.



10. No modification, alteration or amendment of this Guarantee or any of its terms or provisions shall be valid or legally binding unless the Beneficiary consents to the same in writing.
11. No failure to take any action with respect to a breach of this Guarantee or a default by any other party shall constitute a waiver of the Beneficiary's right to enforce any provision of this Guarantee or to take action with respect to such breach or default or any subsequent breach or default.
12. The Guarantor confirms that it has all the necessary powers and corporate authority to issue this Guarantee in favour of the Beneficiary and this Guarantee constitutes a valid legal and enforceable document under the law to which it is subject. The undersigned has full power to issue this Guarantee under the power of Attorney /Resolution of Board of Directors Dated _____ granted to him by the Guarantor.

13. GOVERNING LAW AND JURISDICTION:

This Guarantee shall be exclusively governed by and construed in accordance with the laws of India without giving effect to the principles of conflict of laws therein. No party shall take a plea that any forum is inconvenient.

14. DISPUTE RESOLUTION:

Any dispute arising out of or in relation to this Guarantee shall be resolved by arbitration as per the provision set out in the tender document.

IN WITNESS WHEREOF the Guarantor has duly executed this Guarantee as at the date first above written.

For and on behalf of Guarantor,

Witness

(Signature)Name :

Signature :

Corporate Seal Designation :

Date:



ANNEXURE - K

INSTRUCTIONS FOR EXECUTION OF THE INTEGRITY PACT

1. As per NIT of the Bidding Documents, the accompanying 'Integrity Pact' is to be executed in two (02) originals.
2. Indian Bidder shall submit the Integrity Pact on a non-judicial stamp paper of Rs. 100/- duly signed by the person(s) signing the bid. Foreign Bidder may submit the Integrity Pact on its company's Letter Head, duly signed by the person(s) signing the bid.
 - a. The non-judicial stamp papers are to be purchased in the name of the Bidder or EMPLOYER and the date of purchase should not be earlier than six months of date of execution. The same is to be attached with this bound volume mentioning the following on the stamp paper:

"This stamp paper is an integral part of the Integrity Pact executed by us for

[Insert the name of the package]

Package and Specification Number

[Insert Specification Number: package]

Is enclosed here with" (Sample is given overleaf)

- b. In case of a foreign bidder, the Letter Head is to be attached with this bound volume mentioning the following on the Letter Head:

"The Integrity Pact executed by us for

[Insert the name of the package]

Package and Specification Number

[Insert Specification Number of the package]

Is enclosed herewith" (Sample is given overleaf)

3. Bidders are required to clearly indicate the name of the package and its specification number on the stamp paper/covering letter and first page of the Integrity Pact.
4. All the pages of the Integrity Pact are to be signed by the Bidder. If the Bidder is a partnership or a consortium, the Integrity Pact shall be signed by all the partners or consortium members.
5. Bidders are required to clearly indicate the name and designation of the signatory (ies) as well as the name and address of the witnesses.
6. The Bidder shall not change the contents of the Integrity Pact.
7. Bidder may note that Bidder's failure to submit the Integrity Pact duly signed along with the Bid shall lead to outright rejection of the Bid.

Note: The word EMPLOYER has been used in place of PIA short name. The same may be changed accordingly. (These are instructions for execution and does not form part of the Integrity Pact)



INTEGRITY PACT FORMAT

*Bidder is required to sign the Integrity Pact with HOCL as per following format & terms and conditions.
This document is essential and binding. In case a bidder does not sign & submit the Integrity Pact along with bid documents, his bid shall be liable for rejection.*

₹100/-Non-Judicial Stamp Paper

INTEGRITY PACT

Between

Hindustan Organic Chemicals Ltd(HOCL), a company formed and registered under the Companies Act,1956 and having its registered office at Ambalamugal, Kochi, Kerala - 682 302 hereinafter referred to as "The Principal",

And

(_____)

hereinafter referred to as "The Bidder/Contractor"

Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness / transparency in its relations with its Bidder(s) and / or Contractor(s).

In order to achieve these goals, the Principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section I - Commitments of the Principal

1. The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
 - a. No employee of the Principal, personally or through family members will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - b. The Principal will, during the tender process treat all bidders(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - c. The Principal will exclude from the process all known prejudiced / interested persons.



2. If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code / Prevention of Corruption Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section II - Commitments of the Bidder(s) / Contractor(s)

1. The Bidder(s) / Contractor(s) commits themselves to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution:
 - a. The Bidder(s) / Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
 - b. A Bidder(s) / Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.
 - c. The Bidder(s) / Contractor(s) will not commit any offence under the relevant IPC / PC Act; further the Bidder(s) / Contractor(s) will not use improperly, for purposes of competition or personal gain, or passion to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - d. The Bidder(s) /contractor(s) of foreign origin shall disclose the name and address of the Agents / representatives in India, if any. Similarly, the bidder(s) / contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. All the payments made to the India agent / representative have to be in Indian Rupees only.
 - e. The Bidder(s) / Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
2. The Bidder/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section III - Disqualification from tender process and exclusion from future contracts

1. If the Bidder, before contract award, has committed a serious transgression through a violation of Section II or in any other form such as to put his reliability or credibility as Bidder into question, EMPLOYER may disqualify the Bidder from the tender process or terminate the contract, if already signed, for such reason.
2. If the Bidder/Contractor has committed a serious transgression through a violation of Section II such as to put his reliability or credibility into question, EMPLOYER may after following due procedures also exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by these verity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors



within the company hierarchy of the Bidder/ Contractor and the amount of the damage. The exclusion will be imposed for a minimum of 12 months and maximum of 3 years.

3. If the Bidder/Contractor can prove that he has restored/recouped the damage caused by him and has installed a suitable corruption prevention system, EMPLOYER may revoke the exclusion prematurely.

Section IV - Liability for violation of Integrity Pact

1. If EMPLOYER has disqualified the Bidder from the tender process prior to the award under Section III, EMPLOYER may forfeit the Bid Guarantee under the Bid.
2. If EMPLOYER has terminated the contract under Section III, EMPLOYER may forfeit the Contract Performance Guarantee of this contract besides resorting too the remedies under the contract.

Section V - Previous Transgression

1. The Bidder shall declare in his Bid that no previous transgressions occurred in the last 3 years with any other Public Sector Undertaking or Government Department that could justify his exclusion from the tender process.
2. If the Bidder makes in correct statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section VI - Equal treatment to all Bidders / Contractors

1. EMPLOYER will enter into agreements with identical conditions as this one with all Bidders.
2. EMPLOYER will disqualify from the tender process any bidder who does not sign this Pact or violate its provisions.

Section VII - Punitive Action against violating Bidders / Contractors

If EMPLOYER obtains knowledge of conduct of a Bidder or a Contractor or his subcontractor or of an employee or a representative or an associate of a Bidder or Contractor or his Subcontractor which constitutes corruption, or if EMPLOYER has substantive suspicion in this regard, EMPLOYER will inform the Chief Vigilance Officer(CVO).

Section VIII - Independent External Monitor/Monitors

1. EMPLOYER has appointed a panel of Independent External Monitors (IEMs) for this Pact with the approval of Central Vigilance Commission (CVC), Government of India, out of which one of the IEMs has been indicated in the NIT/IFB.
2. The IEM is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement. He has right of access to all project documentation. The IEM may examine any complaint received by him and submit are port to Chairman-cum-Managing Director, EMPLOYER, at the earliest. He may also submit a report directly to the CVO and the CVC, in case of suspicion of serious irregularities attracting the provisions of the PC Act. However, for ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter shall be referred to the full panel of IEMs, who would examine the records, conduct the investigations and submit report to Chairman-cum-Managing Director, EMPLOYER, giving joint findings.



3. The IEM is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairman-cum-Managing Director, EMPLOYER.
4. The Bidder(s)/Contractor(s) accepts that the IEM has the right to access without restriction to all documentation of EMPLOYER related to this contract including that provided by the Contractor/Bidder. The Bidder/Contractor will also grant the IEM, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his documentation. The same is applicable to Subcontractors. The IEM is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality.
5. EMPLOYER will provide to the IEM information as sought by him which could have an impact on the contractual relations between EMPLOYER and the Bidder/Contractor related to this contract.
6. As soon as the IEM notices, or believes to notice, a violation of this agreement, he will so inform the Chairman-cum-Managing Director, EMPLOYER and request the Chairman-cum-Managing Director, EMPLOYER to discontinue or take corrective action, or to take other relevant action. The IEM can in this regard submit non-binding recommendations. Beyond this, the IEM has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the IEM shall give an opportunity to EMPLOYER and the Bidder/Contractor, as deemed fit, to present its case before making its recommendations to EMPLOYER.
7. The IEM will submit a written report to the Chairman-cum-Managing Director, EMPLOYER within 8 to 10 weeks from the date of reference or intimation to him by EMPLOYER and, should the occasion arise, submit proposals for correcting problematic situations.
8. If the IEM has reported to the Chairman-cum-Managing Director, EMPLOYER, a substantiated suspicion of an offence under relevant Anti- Corruption Laws of India, and the Chairman-cum-Managing Director, EMPLOYER has not, within the reasonable time taken visible action to proceed against such offence or reported it to the CVO, the Monitor may also transmit this information directly to the CVC, Government of India.
9. The word 'IEM' would include both singular and plural.

Section IX - Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor after the closure of the contract and for all other Bidder's six month after the contract has been awarded.

Section X - Other Provisions

1. This agreement is subject to Indian Law. Place of performance and jurisdiction is the establishment of EMPLOYER. The Arbitration clause provided in the main tender document /contract shall not be applicable for any issue/dispute arising under Integrity Pact.
2. Changes and supplements as well as termination notices need to be made in writing.
3. If the Contractor is a partnership firm or a consortium or Joint Venture, this agreement must be signed by all partners, consortium members and Joint Venture partners.



4. Nothing in this agreement shall affect the rights of the parties available under the General Conditions of Contract (GCC) and Special Conditions of Contract (SCC).
5. Views expressed or suggestions/submissions made by the parties and their commendations of the IEM in respect of the violation of this agreement, shall not be relied on or introduced as evidence in the arbitral or judicial proceedings (arising out of the arbitral proceedings) by the parties in connection with the disputes/differences arising out of the subject contract.
6. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(For & On behalf of EMPLOYER)
(Office Seal)

(For & On behalf of Bidder/Contractor)
(Office Seal)

Place : _____

Witness 1:

Date : _____

Name & Address

Witness 2:

Name & Address



ANNEXURE - L

Declaration on Code of Integrity for Public Procurement (COIPP)

I, hereby declare that, I shall observe the highest standard of ethics and shall not indulge in the following prohibited practices, either directly or indirectly, at any stage during the period of this distributorship or during execution of resultant contracts:

- i. **“Corrupt practice”**: making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;
- ii. **“Fraudulent practice”**: any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in execution of the contract;
- iii. **“Anti-competitive practice”**: any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act,2002, between two or more bidders, with or without the knowledge of HOCL that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;
- iv. **“Coercive practice”**: harming or threatening to harm, persons or their property to influence their participation in the procurement process or affect the execution of a contract;
- v. **“Conflict of interest”**: participation by a bidding firm or any of its affiliates that are either involved in the consultancy contract to which this procurement is linked; or if they are part of more than one bid in the procurement; or if the bidding firm or their personnel have relationships or financial or business transactions with any official of procuring entity who are directly or indirectly related to tender or execution process of contract; or improper use of information obtained by the (prospective) bidder from HOCL with an intent to gain unfair advantage in the procurement process or for personal gain;

and

- vi. **“Obstructive practice”**: materially impede HOCL’s investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/ or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the procuring entity’s rights of audit or access to information;

I, further declare that:

- i. I shall be obliged to suo-moto proactively declares any conflicts of interest (coming under the definition mentioned above – pre-existing or as and as soon as these arise at any stage) in any procurement process or execution of contract and failure to do so would amount to violation of this code of integrity;

and

- ii. I, in any previous transgressions of such a code of integrity with any entity in any country during the last three years or I have been debarred by any other procuring entity. Failure to disclose, would amount to violation of this code of integrity;

Yours faithfully,

Signature and Stamp of bidder :
Name of the Bidder :
Place :
Date :



ANNEXURE - R

DECLARATION OF COMPLIANCE OF ORDER (PUBLIC PROCUREMENT NO.1, 2 & 3) DTD 23 JUL 2020 & 24 JUL 2020 ON RESTRICTIONS UNDER RULE 144 (XI) OF THE GENERAL FINANCIAL RULES (GFRS), 2017

This declaration must form part of all tenders & it contains general information and serves as a declaration form for all bidders. (Before completing this declaration, bidders must study the General Conditions, Definitions, Govt Directives applicable in respect of Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017 & prescribed tender conditions).

DECLARATION BY AUTHORISED SIGNATORY OF THE FIRM

I, the undersigned, (full names), do hereby declare, in my capacity as of M/s..... (name of bidder entity), that:

1. The facts contained herein are within my own personal knowledge.
2. I have read the Order (Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 on the subject of Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017 and Annexure - of NIT HOC/Proj/K 2501 D/23 regarding restrictions on procurement from a bidder of a country which shares a land border with India and comply to all the provisions of the Order.
3. I certify that M/s(name of bidder entity) is not from such a country or, is from such a country (strike out whichever is not applicable), has been registered with the Competent Authority. I further certify that M/s.....(name of the sub-contractor if any) is not from such a country or, is from such a country (strike out whichever is not applicable), has been registered with the Competent Authority. I hereby certify that this SUPPLIER fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority is attached].
4. I understand that the submission of incorrect data and / or if certificate / declaration given by M/s(name of bidder entity) is found to be false, this would be a ground for immediate termination and further legal action in accordance with law as per Clause 12 of the Public Order on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017.

AUTHORISED SIGNATURE:

DATE:

SEAL / STAMP OF BIDDER:



CORRIGENDUM No. 1 dt. 04/12/2023

**Sub: SUPPLY, ERECTION AND COMMISSIONING AND AMC OF PROCESS AIR
COMPRESSOR FOR CUMOX PLANT (K2501 D)**

Ref: 1. Tender Ref. No. HOCL/Proj/K 2501 D/23 (R)

2. GeM Bid No. GEM/2023/B/4260641 dt. 28/11/2023

**THE GENERAL DEVIATIONS IN TENDER DOCUMENT AND API STANDARDS ARE
MENTIONED BELOW. ANY FURTHER DEVIATIONS WILL NOT BE ENTERTAINED.**

**ALL OTHER TERMS AND CONDITIONS IN THE ABOVE REFERRED TENDER
REMAINS SAME.**

GENERAL POINTS

Supply, Erection and Commissioning & AMC of Process Air Compressor for Cumox Plant (K2501 D)

1. All vendors have to inform the total percentage of local content in their machine. Also they have to submit the list of items which are going to be used in the compressor package to avail the benefits under the GOI Rule.
2. Vendors should consider a pressure drop of minimum 200mm of water column across the suction filter while designing the compressor package to deliver the rated discharge pressure, flow and temperature as per the technical specification in the Annexure - VIII
3. All the pressure/ temperature indications as per annexure -XIV should be available either in HMI or as local gauges.

Pressure gauges and pressure transmitters with or without isolation valves are also acceptable.

Temperature gauges and temperature transmitters with or without Thermowell are also acceptable.

4. The performance test at the shop floor should be in accordance with the ASME PTC 10 and the duration of the test should be at least 4 hrs. However the mechanical run test of the complete compressor package shall be conducted for 4 Hrs. at their work shop to ensure all the parameters specified in the NIT.
5. The following tests can be done by the parties. But the necessary documents to prove the same should be submitted along with the supply.
 - a. Guide vane test
 - b. Impeller over speed test
6. All the test requirements shall be as per NIT and hold points can be decided between the supplier and HOCL/TPI with respect to QAP in the event of order.
7. Contract Preference - We have floated tender in GeM Portal& NIC Portal. The tender will be taken for evaluation and the overall L₁ bidder (comparing both tenders in GeM Portal and NIC Portal) will be considering for award of work. Parties need not quote both GeM and NIC Portal (Any one mode is sufficient). However, we encourage vendors to quote in GeM Portal.
8. Approval of all drawings which are complete in all respects will be done by HOCL within 10 working days from the date of receipt of the same at HOCL.
9. EMD is exempted for the tenders submitted in 'GeM' portal if the Sellers / Service Provider having annual turnover of INR 500 Crore or more, at least in one of the past three completed financial years. However, tenderer should submit the audited financial statement of the Company as per the NIT. But EMD is applicable for NIC portal.
10. For Inter cooler, after cooler and lube oil cooler – CI Shell and CS tubes are not acceptable.
11. Supplied transmitters may be two wires type and to be operated with 24 V DC power supply with 4 - 20mA output.



12. Moisture separator drain valve shall be either 'V - notch' type or mechanical float type. Auto drain type moisture separator drain alone is not acceptable.
13. Instrumentation Cable Glands and conduits shall be metallic type. PVC gland and PVC conduits are not acceptable as spelt in NIT. Also the cables shall be of armoured type or in rigid metal conduits.
14. Surge control and detector system is to be based on motor current and / or monitoring signal based on process condition (Discharge Pressure or Flow)
15. Skid mounted compressor package assembly is acceptable. However the base frame should have adequate strength and meet IS standard requirements.
16. Torsional Analysis report to be provided for the particular ordered compressor and motor. Typical report is not acceptable .

IT IS AFFIRMED THAT

Payment Terms

a. Supply, Erection and commissioning of Compressor

1. 70% of the contract price as provided in Sl.No. 1 Table - A will be released after satisfactory completion of test run at vendor's works and inspection release by IIIrd Party Inspector / HOCL Engineers and on receipt of Compressor assembly at HOCL Ambalamugal site.
2. 20% of the contract price as provided in Sl.No. 1 Table - A, will be released on after satisfactory commissioning and test run/guarantee run for 72 hrs. continuously and meeting all parameter and final acceptance.
3. 10% of the contract price shall be released on successful running of the equipment for 3 months from date of final acceptance.

b. Annual Maintenance Contract

AMC charges will be paid after completion of each year on pro rata basis.

Performance Security

1. Performance security for supply, erection and commissioning of the compressor shall be 10% of contract value of supply, erection and commissioning of the compressor. It shall be furnished within 21 days after notification of award and the same will be released after successful completion of warrantee period and on submission of Performance Security of AMC contract.
2. Performance Security for AMC contract shall be 10% of the AMC contract value and it shall be submitted within 21 days before expiring warrantee period and it shall be released after 60 days from the date of completion of AMC contract.

ACCEPTED DEVIATION

Sl.No.	Document No.	Page No.	Clause No.	Description	Accepted Deviation Statement by HOCL
1	ANNEXURE - VII	58	3.1.4	Vibration monitoring system complied to API 670 shall be supplied. Bidder to furnish relevant references	Bidder shall offer proven vibration monitoring system with one vibration probe per stage. Bently/ Shinkawa make only acceptable and shall be displayed in HMI or in separate monitor.
2	ANNEXURE - VII	59	3.2.2 f	Bearings and bearing housing:	Bearing temperature sensor is required.
3	ANNEXURE – VII	59	3.2.2 h	Gearboxes	Gear box shall be Manufacturer standard with AGMA 12 /AGMA 13 gear quality
4	ANNEXURE – VII	60	3.2.2 i	Gear Rating	Gear box shall be Manufacturer standard with AGMA 12/AGMA 13 gear quality
5	ANNEXURE – VII	64	3.3.2	Materials as per JIS/DIN standard are also acceptable provided the chemical and physical properties are equivalent to referred ASTM materials in the code (API 672). Vendor in such case shall have to provide in the offer detailed comparative statement of physical and chemical properties of equivalent material. Also, in all the drawings and documents submitted to Owner, vendor shall indicate the equivalent ASTM materials. In such cases all mating flanges at battery limit of Compressor Package has to be supplied at free of cost before one month of the delivery period. Hence API 670 shall not be required.	All material shall be ASTM/ASME only acceptable
6	ANNEXURE - VII	65	3.4.9	Bidder shall provide separate common alarm and common trip remote indication.	Separate common alarm and common trip remote indication is required.
7	ANNEXURE - VII	68	3.7.1.1	Material Inspection	QAP and inspection hold point can be finalized between supplier and HOCL/TPI in the event of order.

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8	ANNEXURE - VII	68	3.7.1.IV	Hydrostatic test (API 672 clause 8.3.2) Impeller over speed test (API 672 clause 8.3.3) Gear Contact Check at load condition to meet the requirements of API 672 i.e. minimum 60% contact at the load point.	Can be done in-house of the supplier. But report should be shared with HOCL/ TPI
9	ANNEXURE - VII	70	3.7.2.II	II. Over speed Test & Sound level test	All test run shall be as per NIT. Over speed test can be done in-house of the supplier. But report should be shared with HOCL/ TPI.
10	ANNEXURE - VII	71	3.7.2.IV	IV. Helium Test.	if possible at parties work
11	ANNEXURE - VII	71	3.11	Special Tools :	Special tools if any to be handed over to HOCL at free of cost.
12	ANNEXURE - VII	72	3.12.3	3.12.3 Negative tolerances are not accepted for flow pressure and discharge capacity. Sound level shall not exceed 90dB measured at the distance of 1 mtr from the compressor without sound-proof enclosure during performance test at Vendor's shop/HOCL site.	Any deviation cannot be accepted and shall be as per NIT.
13	ANNEXURE - VIII	86	IX.II	II. Rotor Rotor shall be robust in construction with minimal vibration to achieve long operating life. Copper is required for the motor's rotor windings. Rotor cages shall be of fabricated-bar construction with copper or copper alloy bars and end rings.	Only copper rotor is acceptable
14	ANNEXURE-VII	68	3.7.1. IV	Assembly Inspection testing	*Hydro test certificated shall be provided for pressured parts such as cooler, element only - <u>All pressure parts shall be tested</u> *Impeller over speed test report shall be submitted for customer reference:- can be done in-house of the supplier. But report should be shared with HOCL/ TPI * Gear contact check for load condition is not applicable for offered machine: -can be done in-house of the supplier. But report should be shared with HOCL/ TPI

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					<p>*Torsional Analysis report is not required for offered machine:-can be done in-house of the supplier. But report should be shared with HOCL/ TPI</p> <p>* Performance test of core shall be carried at Supplier factory for single design point as per ASME PTC 10 (not as per API672). Test period will be carried for 4 hrs:- Please see the point no.4 in General Clarification Point.</p> <p>* Guide vane test and sound test is not applicable, same can be observed during mechanical run test:- can be done in-house of the supplier. But report should be shared with HOCL/ TPI</p> <p>* Motor testing shall be at vendor place, TPI to be appointed by customer:- Acceptable</p> <p>Noted performance test shall be done at site, for overall 72 hr.</p>
15	ANNEXURE-VIII	82	I	(Specification Sheet of Process Air Compressor) Compressor Standard: API 672;	Acceptable deviation in API 672 is uploaded. Further deviation will not be permitted.
16	ANNEXURE-VIII	84	VIII 2.	Instruments	OEM Standard Pressure and Temperature Transducers provided are acceptable; However the make of the same shall be approved by HOCL.
17	ANNEXURE-XIII	108	9	General Points - Make list	OEM Approved make of reputed brands and to be approved by HOCL
18	ANNEXURE -VII	62	3.2.2 h vii	Permanent coatings or paint shall not be applied to the interior of the casing, unless the purchaser approves in advance the material and method of application.	The internal coating of the gearbox as per the manufacturer's proprietary & proven method & material of coating. Also Acceptable
19	ANNEXURE -VII	63	3.2.2 i vi 4	MOC for Gears	Material 18 Cr, Ni.Mo 7-6 is also acceptable.

Sl.No.	Document No.	Page No.	Clause No.	Description	Accepted Deviation Statement by HOCL
20	ANNEXURE -VII	64	3.2.2 i x	The un plated tooth surface on loaded faces of completed gears shall have a finish, as measured along the pitch line, of 0.8mm (32min.) Ra or better.	Manufacturing proprietary design is acceptable.
21	ANNEXURE -VII	64	3.2.2 i xii	Hunting tooth combinations are preferred. To achieve this, it may be necessary for the manufacturer to adjust the exact gear ratio.	Manufactured standard is acceptable.
22	ANNEXURE -VII	64	3.2.2 k	Manual override for IGV As per NIT	Manual over ride is required to check the compressor when all plants are in shutdown, Hence it is required.
23	ANNEXURE -VII	65	3.2.2 viii	Supplied PLC/HMI should be easily programmable and all the installed software should be supplied in CD or DVD with original license.	Warranty will be only after completion of all warranty terms including supply of necessary softwares.
24	ANNEXURE -VII	67	3.2.16	IGV & BOV Type	IGV with electric actuator & BOV is with Electro pneumatic actuator also acceptable.
25	ANNEXURE -VII	67	3.2.17	Oil flow measurement	Oil flow measurement is not required if MOP & AOP are having the same flow as required by the compressor bearings.
26	ANNEXURE -VII	70	3.5.6	HOCL will provide 110 V AC, single phase, 50 Hz UPS power supply for control and instrumentation.	Control panel supply shall be 110V AC from UPS and will be supplied by HOCL at battery limit as mentioned in NIT
27	ANNEXURE -VIII	87	7-8	Seal Gas pressure	Seal Gas is required if applicable.
28	ANNEXURE -VIII	87	7-13	Surge Detection Indication & Alarm	Surge detection indication and alarm shall be provided as per NIT
29	ANNEXURE -VIII	88	7-17,18	IGV & BOV Signal	IGV & BOV signal in percentage format also shall be provided in HMI
30	ANNEXURE -VIII	88	19	Solenoid valve output status display interlock	Acceptable if there is solenoid valve for interlock
31	ANNEXURE -VIII	88	Electrical	Power supply for main motor space heater	Power supply for main motor space heater shall be provided by HOCL at battery limit if applicable.

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1	5.1	The purchaser will specify whether data, drawings, hardware (including fasteners), and equipment supplied to this standard shall use the SI as per.	ANSI/ ASTM are acceptable
2	6.1.8	Motors and Electrical Components : Motors, electrical components, and electrical installations shall be suitable for the area classification (class, group, and division or zone) specified by the purchaser and shall meet the requirements of the applicable sections of IEC79 or NFPA 70, Articles 500, 501, 502, and 504, as well as local codes. Local codes shall be furnished by the purchaser on request of the Vendor.	The area classification is considered as non- hazardous.
3	6.1.10	Purchaser Connections: All openings or nozzles for purchaser connections shall be DN 12 (1/2 NPS) or larger and shall be in accordance with ISO 6708. Sizes DN 32, DN 65, DN 90, DN 125, DN 175 and DN 225 (11/4, 21/2, 31/2, 5, 7, and 9 NPS) shall not be used.	Any flange in even size and with ASTM Standard is acceptable including 6" 150# flange and above
4	6.1.13	<p>Mounting Surfaces</p> <p>When specified, mounting surfaces shall meet the following criteria:</p> <p>They shall be machined to a finish of 6 μm (250 $\mu\text{in.}$) arithmetic average roughness (Ra) or better.</p> <p>To prevent a soft foot, they shall be in the same horizontal plane within 25 μm (0.001 in.).</p> <p>Each mounting surface shall be machined within a flatness of 80 μm per linear meters (0.001 in. per linear foot) of mounting surface.</p> <p>Different mounting planes shall be parallel to each other within 50μm (0.002 in.).</p> <p>The upper machined or spot faced surface shall be parallel to the mounting surface.</p> <p>Hold-down bolt holes shall be drilled perpendicular to the mounting surface or surfaces, spot faced where necessary to accommodate fasteners and tools.</p> <p>Note: Spot face is typically not necessary if surface is perpendicular to bolting within 1°</p>	Spot facing is acceptable as per mfg. Standard.
5	6.3	Casing Connections	Only oil connections to the casing can be threaded.
6	6.5.1.4	All shaft keyways shall have fillet radii conforming to ISO 773 ANSI/ASME B17.1.	Keyways with fillet radius.
7	6.6	Seals and Sealing Systems.	Valves may be provided as per manufacturer standard.
8	6.6.3	The sealing system shall be furnished complete with piping, filters, instrumentation, and necessary start-up interlocks as applicable. This system, including air consumption, shall be fully described in the proposal.	If applicable.

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9	6.7.1.2	Critical Speed : Resonances of structural support systems that are within the vendor's scope of supply and that affect the rotor vibration amplitude shall not occur within the specified separation margins (see C.2.4, Annex C) unless the resonances are critically damped. The effective stiffness of the structural support shall be considered in the analysis of the dynamics of the rotor-bearing support system.	Manufacturer standard is acceptable but supplier should guarantee the performance.
10	6.7.3.2	Torsional Analysis: The undamped torsional natural frequencies of the complete train shall be at least 10% above or 10% below any possible excitation frequency.	The undamped torsional natural frequencies of the complete train are at least 10 percent above or below the compressor input speed and at least 5 percent away from any other excitation source.
11	6.7.3.3	Torsional critical at two or more times running speeds shall preferably be avoided or, in systems in which corresponding excitation frequencies occur, shall have no adverse effect. In addition to multiples of running speeds, torsional excitations that are not a function of running speeds or that are nonsynchronous in nature shall be considered in the torsional analysis when applicable and shall have no adverse effect.	When provided, the torsional analysis will be based on steady-state conditions.
12	6.8.1.1	Bearings—General : Unless otherwise specified, hydrodynamic radial and thrust bearings shall be provided.	The low-speed main shaft is supported by roller bearings. High speed pinions are supported by hydrodynamic bearings. Roller bearings is not acceptable in compressor side
13	6.8.2.1	Radial bearings shall be designed for ease of assembly, precision bored and of the sleeve or pad type with babbitted replaceable liners, pads, or shells. These bearings shall be equipped with anti-rotation pins and shall be positively secured in the axial direction.	The white metal / Babbitt pads are not replaceable type. Also, bearings are not equipped with anti- rotation pins are also acceptable. The flexible pads on compressor radial bearings which are not individually are also acceptable
14	6.8.4.3	Bearing housings shall be equipped with replaceable labyrinth- type end seals and deflectors where the shaft passes through the housing; lip-type seals shall not be used. The seals and deflectors shall be made of non-sparking materials. The design of the seals and deflectors shall effectively retain oil in the housing and prevent entry of foreign material into the housing.	The low speed (bullgear) shaft utilizes labyrinth- type seals. Materials are steel and aluminum: -Acceptable. Rotor shaft seal can be carbon ring type and bull gear shaft seal shall be lip type: -Acceptable.
15	6.9.1	LUBRICATION: Unless otherwise specified, bearings and bearing housings shall be arranged for oil lubrication using a mineral oil in accordance with ISO 3448/15 8.68	Specially formulated high quality mineral oil meeting or exceeding ISO 8068 specifications. Are also acceptable.
16	6.9.2	A pressurized oil system shall be supplied in accordance with ISO 10438 Part 3 or API Std 614 Chapter 3 except as noted in 6.9.3 – 6.9.4. (See Annex E, Figure E-1 and Table E-1 for a schematic of the minimum system and the various options applicable.)	Supplier should guarantee for the performance as per NIT.

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17	6.10.4.1	Welding of piping and pressure-containing parts, as well as any dissimilar-metal welds and weld repairs, shall be performed and inspected by operators and procedures qualified in accordance with internationally recognized welding standards such as Section VIII, Division 1, and Section IX of the ASME Code or purchaser-approved standard, such as EN 287 or EN 288. No weld repairs are permitted after final machining.	Proven welding standards, which are available for review at facility. Note that these standards shall be in accordance with internationally recognized welding standards such as Section VIII, Division 1, and Section IX of the ASME Code for all pressure parts is also acceptable.
18	6.10.4.5	Unless otherwise specified, other welding, such as welding on baseplates, non-pressure ducting, lagging, and control panels, shall be performed by welders qualified in accordance with an appropriate internationally recognized structural welding standard such as AWS D1.1.	Proven welding standards drawn by manufacturer also acceptable but must be available for review at facility.
19	6.11.4	As a minimum, the following data shall be clearly stamped or engraved on the compressor nameplate: Vendor's name Serial number Size, model and type Rated capacity Rated discharge pressure purchaser's item number. Units shall be consistent with those used on the data sheets.	Project specific data plate is required
20	6.12.9	Thrust bearings shall be selected such that under any operating condition the load does not exceed 50% of the bearing manufacturer's ultimate load rating. The ultimate load rating is the load that will produce the minimum acceptable oil-film thickness without inducing failure during continuous service or the load that will not exceed the creep initiation or yield strength of the babbitt at the location of maximum temperature on the pad, whichever is less.	As per NIT
21	6.12.10	When specified, thrust bearings and radial bearings shall be fitted with bearing-metal temperature sensors.	Should be as per NIT
22	6.12.11	When specified, installation of bearing-metal temperature sensors shall be in accordance with API Std 670.	Should be as per NIT
23	6.12.12	When specified, oil cooler tubes shall have a 13 mm (0.5 in.) minimum outside diameter and be made of inhibited admiralty with an average wall thickness of 18 BWG.	Tube shall be 3/8" or above is acceptable
24	6.12.13	When specified, an austenitic stainless steel oil reservoir shall be supplied.	Oil reservoir and piping should be SS.
25	7.1.2.1	Unless otherwise specified, motor drives shall conform to internationally recognized standards such as API Std 541, 546, or IEEE 841 as applicable.	AS per NIT
26	7.2.1.4	Flexible couplings with cylindrical bores shall be mounted with an interference fit. Cylindrical shafts shall comply with ISO R775 or ANSI/AGMA 9002 and the coupling hubs shall be bored to the following ISO 286-2 tolerances: For shafts of 50 mm (2 in.) diameter and smaller — Grade N7. For shafts larger than 50 mm (2 in.) diameter — Grade N8.	Shafts of compressor cores are not sized to ISO/R775. Tolerance class for shaft ends is IT6 per ISO286. Hubs of standard coupling are N7 per ANSI/AGMA 9002. Shrink fit between coupling hub and shaft shall be as per supplier standard design are acceptable.

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27	7.2.1.6	The maximum coupling operating torque load shall be limited to 80% of the manufacturer's published continuous rating. Couplings bored larger than the manufacturer's nominal rating shall be subject to the purchaser's approval.	Standard coupling with manufacturers guarantee is acceptable
28	7.3.3	The baseplate shall have major load-bearing members under the mounting surfaces of the major components. The structure shall be provided with lifting lugs for at least a four-point lift. Lifting the baseplate complete with all equipment mounted shall not permanently distort or otherwise damage the baseplate or the mounted equipment.	Fork lift /craneslots are to be provided on the standard base frame for lifting and positioning the package.
29	7.3.7	Anchor bolt holes shall be drilled perpendicular to the mounting surfaces.	Anchor bolt holes can be drilled perpendicular to the mounting surfaces. bottoms are painted with standard shop primer are acceptable.
30	7.3.9	Driver support mounting surfaces shall be machined to allow the installation of vendor supplied austenitic stainless steel, precut, full bearing shim packs, 3 mm – 6 mm (0.125 in. – 0.250 in.) thick with no more than 5 shims in the pack between the driver and each mounting surface. Laminated shims are not acceptable. Shims shall be slotted so they can be installed and removed without removing the fasteners.	Brass shims/ steel shims are acceptable
31	7.3.10	When the supported driver weighs more then 225 kg (500 lbs), the driver mounting plates shall be furnished with axial and lateral jackscrews the same size as or larger than the vertical jackscrews. The lugs holding these jackscrews shall be attached to the mounting plates so that the lugs do not interfere with the installation or removal of the equipment, jackscrews, or shims. If the equipment is too heavy to use jackscrews, other means shall be provided.	The supplier should guarantee for its strength and performance.
32	7.4.1.2	Unless otherwise specified, controls and instrumentation shall be designed for outdoor installation and shall meet the requirements of IP65 as detailed in IEC 79 (NEMA 4X, as detailed in NEMA Publication 250).	IP 54 minimum is required for control panel and IP 65 for field instruments, which is mandatory .
33	7.4.2.1	The purchaser will specify which of the following compressor capacity control modes shall be furnished by the vendor: Capacity modulation (inlet throttle device or variable inlet guide vanes) used when constant discharge pressure to surge is required and when the system air demand is relatively constant Automatic dual control-capacity modulation plus intermittent (load-unload) mode control for smaller air demand An automatic start and automatic stop control.	Capacity modulation either auto dual or capacity modulation constant discharge pressure control is to be provided.
34	7.4.2.4	An automatic driver-overload control system shall be included to permit continuous operation at minimum ambient air and water temperatures without exceeding the nameplate rating (excluding service factor, if any).	Driver overload protection to be provided on compressors.

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35	7.4.2.6.2	To reduce driver load during startup of a motor-driven compressor, automatic unloading of the compressor by closing the inlet throttle device and opening the discharge blowoff valve shall be provided by the vendor. (An auxiliary source of control air or nitrogen may be required for initial startup.)	Warning for Hot-start condition of motor is required as per NIT
36	7.4.3.1	<p>7.4.3.1 A panel from which startup and shutdown can be accomplished shall be provided and shall include the following:</p> <p>c. Manual override and adjustment of control valves (see 7.4.2.5) h. An alarm indication and reset push button. n. On/off switch for panel power o. On/auto/standby switch for auxiliary oil pump</p>	<p>c. We require IGV and BOV manual operation while compressor is not running.</p> <p>h. Alarm reset shall be through the touch button available on the OUI of the control panel is also acceptable.</p> <p>n) Panel power On/Off switch is required.</p> <p>o) Switch for pumps need to be operated locally. Auxiliary oil pump as not be provided due to safety reasons.</p>
37	7.4.3.2	<p>The panel shall be fully enclosed. The panel enclosure shall have a display visible in darkness or direct sunlight, and shall be mounted on the package baseplate. If required to meet the area classification, purging shall be provided in accordance with NFPA 496. The panel shall include the following:</p> <p>Shielding of the devices in the panel for protection from 5 watts radio-frequency (RF) interference at 1 m (3 ft) using commercial frequency bandwidths</p> <p>Cooling for devices within the panel if the temperature inside the panel exceeds the electronic hardware temperature rating Note: typically of concern for ambient conditions above 38°C (100°F).</p> <p>An interior panel heater for units when required by the ambient condition.</p> <p>Driver, instrumentation, and control power separated in the same cabinet Sun screen/shade for control panel display for outdoor installations without a roof.</p>	IP 54 Is acceptable
38	7.4.4.5.2	<p>The vendor shall include with his proposal a statement listing whether phase angle probe and both x and y radial probes can be mounted adjacent to each impeller shaft. Where possible, casings shall have tapped and plugged holes for mounting a second vibration probe at 90° from the original probe. Angular orientation of probe mounting holes shall be the same for both ends of each pinion. Unless otherwise specified, these devices are monitored by the compressor control system.</p> <p>Note: The vibration monitoring system supplied as standard is substantially different from an API Std 670 standard system and may not interface with other user systems.</p>	<p>Each X core is supplied with X-axis probes mounted adjacent to each impeller. As an option, Y-axis probes mounted adjacent to each impeller and at 90 deg to the X-axis probes can be offered. A key phasor probe on the low speed shaft only can also be provided as an option.</p> <p>Vibration monitoring is provided in Y-plane is also Acceptable</p>

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39	7.4.4.8	Where practical, flow indicators shall be furnished in the atmospheric oil-drain return lines. Note: Flow indicators are not feasible from individual compressor bearing drains, and sometimes not from the gear casing drain.	Flow indicators for oil drain is preferred. Motor bearing drain sight flow indicators (when applicable forced-lubricated sleeve type bearings are present) may available on standard compressors.
40	7.4.5.1	Switches, sensors, control devices, and annunciation function shall be furnished as specified by purchaser and mounted by the vendor and shall include those listed in Table 3 as a minimum. The alarm setting shall precede the shutdown setting. Program logic shall distinguish between a shutdown device and alarm device such that failure of a shutdown device will not allow operation of the compressor until the device problem is corrected; whereas, failure of an alarm device will cause an alarm condition but will allow continued operation of the compressor.	High vibration of driver is not envisaged by HOCL. But supplier should guarantee the same.
41	7.4.5.2	Annunciator: The vendor shall furnish first-out annunciation either as a separate device or as a function contained within the control system, e.g., a section of the PLC or microprocessor used for control of the compressor. If a separate annunciator is utilized, the annunciator shall contain approximately 25% spare points, and connections shall be provided for actuation of a remote signal when any function alarms or trips. The sequence of operation shall be as specified in 7.4.5.2.1 – 7.4.5.2.5.	Annunciation shall be an integral part of microprocessors display and can be as per supplier standard.
42	7.4.5.2.2	When specified, alarm indication shall consist of a flashing or rotating beacon, or equivalent, and the sounding of an audible device.	Audible device and flashing light is required in control panel.
43	7.4.5.2.5	Connections shall be provided for a common remote alarm and a common remote shutdown indication.	Common remote shutdown indication can be provided if required.
44	7.4.5.3.4	Unless otherwise specified, shutdown systems shall be provided with switches or another suitable means to permit testing without shutting down the unit.	Transducers and temperature detectors are used for alarm and shutdown. These devices have a continuous output, which is monitored for proper signal range. Shutdown bypass switches are not available. Acceptable Provision for testing alarm and shutdown control circuit has to be provided. As per NIT
45	7.4.5.3.5	When specified, alarm and shutdown instruments shall be arranged to permit testing of the control circuit, including when possible the actuating element, without interfering with normal operation of the equipment. The vendor shall provide a clearly visible light on the panel to indicate when shutdown circuits are in a test bypass mode.	As per NIT

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46	7.4.6.4	No terminal blocks shall be located in wire-ways. The terminals shall be straight-through compression type with shrouded screws (dead front) and center tapping for test purposes. Terminal block connections shall be single level (not tiered). The panel shall contain two bare soft copper grounding connections. One shall be used for a signal ground, the other an equipment ground bus. The instrument case shall not be grounded through the steel of the panel.	The panel shall contain two bare soft copper grounding connections. One shall be used for a signal ground, the other an equipment ground bus.
47	7.5.1.2	When specified, a manifolded cooling water piping system shall terminate with flanged single-supply and single-return connections at the edge of the package. It is not necessary to provide flanged connections for tubing systems.	Standard scope of supply includes a water manifold, providing a single inlet and outlet to each intercooler, aftercooler and oil cooler. Separate isolation valves for intercooler and aftercooler has be available in compressor package.
48	7.5.2.1	Oil Piping: Oil piping, tubing, and fittings downstream of filters (excluding slip-on flanges), shall be stainless steel (see ISO 10438, Part 1 or API Std 614 Table 1-D).	Stainless steel pipe and pipe fittings are preferably
49	7.5.2.3	Pipe joints downstream of the oil filter (filter to supply points) shall be butt-welded. Piping joints in return lines and upstream of the filter (reservoir to filter) may be socket welded. Threaded connections shall be used for instrument connections and where tubing is used.	SW fittings also accepted in Lube oil piping.
50	7.6.5	Unless otherwise specified, cooler shells shall be of steel; tube sheet shall be carbon steel, painted on each side with a suitable coating for corrosion protection; and tubes shall be of manufacturer's standard copper alloy. U-bend tubes are not permitted. Note 1: Typical tube materials are 90-10 copper-nickel, or hard drawn CI 220 copper. Note 2: Some plant locations may require consideration of alternative materials to combat atmospheric corrosion.	As per NIT, Shell with MOC of cast iron cooler is not acceptable
51	7.7	The vendor shall furnish a dry-type multistage, high-efficiency air intake filter-silencer suitable for mounting outdoors. Unless otherwise specified, the filter-silencer shall be shipped loose for field installation by purchaser.	Filter with single stage filtration is not acceptable.
52	7.8	DISCHARGE BLOWOFF SILENCER 7.8.1. The vendor shall furnish a flanged discharge blow off silencer. The silencer is typically shipped loose for field installation by the purchaser. 7.8.2 Silencer construction shall be suitable for service in an unprotected location. The silencer preferably should be located immediately downstream of the discharge blowoff valve and oriented as specified.	The standard compressor can be supplied with a shipped loose blow-off silencer. The compressor is supplied with a skid-mounted blow-off silencer is also acceptable.

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53	7.9	<p>SPECIAL TOOLS: When special tools and fixtures are required to disassemble, assemble, or maintain the unit, they shall be included in the quotation and furnished as part of the initial supply of the machine. For multiple-unit installations, the requirements for quantities of special tools and fixtures shall be mutually agreed upon by the purchaser and the vendor. These or similar special tools shall be used during shop assembly and post test disassembly of the equipment.</p> <p>7.9.2 When special tools are provided, they shall be packaged in a separate, rugged metal box or boxes and shall be marked "special tools for (tag/item number)." Each tool shall be stamped or tagged to indicate its intended use.</p>	Special tools if any felt by HOCL, need to be handed over to HOCL as per NIT after commissioning.
54	7.10.4	The microprocessor shall be capable of communicating with the purchaser's distributed control system (DCS).	Universal communication module in LCP, which shall be capable of communicating with the purchaser's DCS on RS422/485 MODBUS protocol is also acceptable.
55	7.10.5	When specified, a surge avoidance system shall be provided.	Surge avoidance shall be provided as per supplier standards, through PT, current limits & surge indexing logics are also acceptable.
56	7.10.7	When specified, provisions for phase reference (phase angle probes) shall be made on all pinions in accordance with API Std 670.	As per NIT
57	7.10.8	When specified, a tapped and plugged hole shall be provided for mounting a probe to sense axial position of the gear wheel. Manufacturer shall advise if their thrust bearing arrangement makes it more advantageous to utilize axial position probes on the pinions instead of the bull gear.	As per NIT
58	7.10.9	When specified, gear casing shall have a machined surface for mounting the purchaser's accelerometer in accordance with API Std 670.	As per NIT
59	7.10.10/7.10.11	When specified, vibration and axial position transducers shall be supplied, installed, and calibrated in accordance with API Std 670.	Axial position transducers are not mandatory.
60	7.10.12	When specified, a bearing-temperature monitor shall be supplied and calibrated in accordance with API Std 670.	Bearing temperature in HMI required
61	7.10.13	The control system shall maintain a chronological record of the shutdowns. The panel shall have the capability of storing operational parameters related to the chronological shutdowns in a battery-backed nonvolatile memory. The Vendor and the purchaser shall mutually determine the required parameters to be stored.	As per NIT
62	7.10.14	When specified, each alarm device and each shutdown device shall be furnished as separate devices.	As per NIT
63	7.10.15	When specified, a pilot light shall be provided on the incoming	As per NIT

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64	7.10.16	If temperature element heads are exposed to temperatures above 60°C (140°F), a 19-mm (3/4 in.) bronze hose with four-wall-interlocking construction and joints with packed-on heatproof couplings shall be used.	As per NIT
65	7.10.17	Piping wall thickness shall conform to the minimum requirement of ISO 10438, Part 1 or API Std 614, Table 2-A. Where space does not permit the use of NPS 1/2, 3/4, or 1 pipe, seamless tubing may be furnished in accordance with ISO 10438, Part 1 or API Std 614 Table 2-B. Stainless steel fittings shall be furnished with stainless steel tubing. The make and model of fittings shall be subject to purchaser's approval.	As per NIT
67	7.10.19	Heads of oil-actuated control valves shall be vented back to the reservoir. When specified, instrument sensing lines to safety switches shall have a continuous through flow of oil.	As per NIT
68	7.10.20	All piping components such as flanges, valves, control valve bodies or heads, and relief valves shall be made of steel.	Manufacturers standards is acceptable if it is as per ASTM/API Standard.
69	8.1.1	Inspection, Testing and Preparation for Shipment General : Unless otherwise specified, inspection, testing and preparation for shipment shall be in accordance with ISO 10438, Part 1 or API Std 614, Ch. 1, Section 7 except as noted below:	As per NIT
70	8.1.2	When specified, the purchaser's representative, the vendor's representative, or both shall indicate compliance in accordance with the inspector's checklist (see Annex G) by initialing, dating, and submitting the completed checklist to the purchaser prior to shipment.	QAP and inspection hold points can be decided with HOCL/TPI in the event of Order.
71	8.2.1.1	Pressure-containing parts shall be painted until the specified inspection and testing of the parts is complete. Note: Purchased auxiliaries typically arrive already tested and painted. Some components may be primed at the sub-supplier.	Pressure parts can be tested after painting.
72	8.2.3.2	The gear contact pattern shall be checked in a static test with all pinions in place. Unmodified profile leads shall show a minimum contact of 60% of tooth contact along the axis, 30% radially—with no edge loading. For crowned gear teeth, 50% centered contact is acceptable.	An acceptable contact pattern has been successfully demonstrated prior to start of standard core production and record need to be shown to TPI.
73	8.3.2.1	Hydrostatic Tests 8.3.2.1 Components designed and fabricated to an internationally recognized pressure design code or standard shall be pressure tested in accordance with that code or standard. Compressor casings, interstage piping and other pressure containing components not designed to a specific code or standard shall be tested hydrostatically with liquid at a minimum of one and one-half times the maximum allowable working pressure of the component but not less than 1.5 bar (20 psi).	Hydrostatic test of components take place at 1.5 times the MAWP except for process coolers which are tested per requirements of ASME code for vessels (1.3 times). In some cases the test pressure may be less than 20 psig (1.4 Bar G).

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74	8.3.2.2	The chloride content of liquids used to test austenitic stainless-steel materials shall not exceed 50 parts per million. To prevent deposition of chlorides on austenitic stainless steel as a result of evaporative drying, all residual liquid shall be removed from tested parts at the conclusion of the test.	The chloride content in the water used for hydro- testing may not be limited to 50 ppm.
75	8.3.2.3	Tests shall be maintained for a sufficient period of time to permit complete examination of parts under pressure. The hydrostatic test shall be considered satisfactory when neither leaks nor seepage through the pressure containing parts or complex systems may require a longer testing period to be agreed upon by the purchaser and the vendor. Seepage past internal closures required for testing of segmented cases and operation of a test pump to maintain pressure are acceptable.	The standard duration of 20 minutes for hydrostatic tests is acceptable.
76	8.3.3	Impeller Overspeed Test	compliance certificate can be provided for impeller overspeed test.
77	8.3.4	Combined Mechanical and Performance Tests	As per NIT.
78	8.3.4.1	The combined mechanical and performance test of the package, in accordance with vendor's standard test procedure, shall be conducted at rated operating speed for a continuous 2-hour period. Aerodynamic performance test shall be in accordance with either ASME PTC-10 or ISO 5389 as mutually agreed between purchaser and vendor. The purchaser and the vendor shall mutually agree upon equipment and accessories to be included in the scope of the test and the test class.	The mechanical and performance test shall be as per NIT and the quoted rate shall be inclusive of the same.
79	8.3.4.5.2	All joints and connections shall be checked for tightness, and any leaks shall be corrected.	All joints and connections shall be checked for tightness, and any leaks shall be corrected as per standard engineering practice
80	8.3.4.5.4	Total indicated runout measurements (combined electrical and mechanical) of the pinion probe areas and calibration records for flow, pressure, temperature, and vibration-measuring devices utilized during the test shall be available to the purchaser's representative for review.	Calibration records for the supplied instruments for flow, pressure, temperature and vibration measuring devices shall be provided, As per IMS requirement
81	8.3.4.6	The requirements of 8.3.4.6.1-8.3.4.6.5 shall met during the combined mechanical and performance test.	Performance test shall be as perNIT.
82	8.3.5	Final Inspection The purchaser's representative may perform a final inspection prior to shipment, including dimensional inspection, review of scope of supply, and documentation review.	Final inspect and other test shall be witness by HOCL/TPI as per NIT. QAP can be finalized between HOCL /TPI in the event of order
83	8.4.1	Equipment shall be suitably prepared for the type of shipment specified, including blocking of the rotor when necessary. Blocked rotors shall be identified by means of corrosion- resistant tags attached with stainless-steel wire. The preparation shall make the equipment suitable for 6 months of outdoor storage from the time of shipment, with no disassembly required before operation except for inspection of bearings and seals. If storage for a longer period is contemplated, the purchaser will consult with the vendor regarding the recommended procedures to be followed.	The compressor shall be suitable for outdoor under roof storage for 6 months.

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84	8.4.3	Lifting points and lifting lugs shall be clearly identified on the equipment or the equipment package. The recommended lifting arrangement shall be identified on the boxed equipment.	Lifting points for fork truck lift shall be included in the base.
85	8.4.4	The package shall be identified with item and serial number. Material shipped separately shall be identified with securely affixed, corrosion-resistant metal tags indicating the item and serial number of the equipment for which it is intended. In addition, crated equipment shall be shipped with duplicate packing lists, one inside and one on the outside of the shipping container.	Compressors and shipped loose items may be identified with corrosion-resistant shipping tags.
86	8.4.5	When spare rotating elements are purchased, they shall be prepared and crated for unheated indoor storage for a period of at least 3 years.	Spare and consumables shall be supplied as per spelt in NIT.
87	8.4.5	When spare rotating elements are purchased, they shall be prepared and crated for unheated indoor storage for a period of at least 3 years.	As per standard & NIT
88	8.4.6	Auxiliary piping connections furnished on the purchased equipment shall be impression stamped or permanently tagged to agree with the vendor's connection table or general arrangement drawing. Service and connection designations shall be indicated.	Customer connections are identified on outline drawings as standard. Impression stamped or permanently tagged connections shall be provided as an option.
89	8.5.2	Impellers that are welded or machined from other than investment castings, forgings, or bar stock, shall be 100% radiographed and inspected. The radiographs, when compared with the standard reference radiographs within ASTM E446 for steel castings up to 50 mm (2 in.) in thickness or standard reference radiographs for heavy walled 50 mm – 100 mm (2 in. – 4 in.) steel castings within ASTM E186, shall show a casting quality equal to or better than Severity Level 2 for Categories A, B, and C (Types 1 – 4). Defects per categories D, E, and F are unacceptable. The methods of radiographic examination shall be in accordance with ASTM E 94.	As per NIT Standard.
90	8.5.3	Inspection of the impeller is required following overspeed testing per 8.3.3.	compliance certificate can be provided for impeller over speed test.
91	8.5.4	All gear wheel and pinion teeth shall be 100% magnetic particle inspected in accordance with ASTM A 275. Cracks are not acceptable. Linear indications due to metallic inclusions larger than 1.5 mm (0.06 in.) located in the tooth flanks or roots shall be reported to the purchaser for disposition. Linear indications are defined as indications whose length is at least three times the width. Acceptance or rejection shall be decided on a case-by- case basis and shall be mutually agreed upon by the purchaser and the vendor.	compliance certificate can be provided for magnetic particle test.

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92	8.5.9	When specified, while the equipment is operating at rated speed, sweeps shall be made for vibration amplitudes at frequencies other than synchronous. As a minimum, these sweeps shall cover a frequency from 0.25 times to 8 times the rated speed of the shaft being observed. If the amplitude of any discrete, nonsynchronous vibration exceeds 20% of the allowable vibration as defined in 6.7.4.3, the purchaser and the vendor shall mutually agree on requirements for any additional testing and on the equipment's suitability for shipment	As per NIT.
93	8.5.11.1	The bearings, seals, and gearing shall be inspected.	As per NIT.
94	8.5.12.1	Guide Vane Test: The package shall be tested at the number of guide vane settings specified by the purchaser. Each setting shall include surge, rated, and maximum capacity.	Can be done in house of the supplier. But report should be shared with HOCL/TPI.
95	9.1.3	<p>When specified, a coordination meeting shall be held, preferably at the vendor's plant, within 4-6 weeks after the order commitment. Unless otherwise specified, the vendor shall prepare and distribute an agenda prior to this meeting which as a minimum shall include review of the following items:</p> <p>The purchase order, scope of supply, unit responsibility, sub vendor items and lines of communication The data sheets Applicable specifications and previously agreed exceptions Schedules for transmittal of data, production, and testing The quality assurance program and procedures Inspection, expediting, and testing Schematics and bills of material for auxiliary systems The physical orientation of the equipment, piping, and auxiliary systems including access for operation and maintenance Coupling selection and rating Equipment performance, alternate operating conditions, startup, shutdown, and any operating limitations Instrumentation and controls.</p>	Coordination meetings at vendor production facility need to be accommodated as part of an engineered project.
96	9.2.4	<p>9.2.4.1 The vendor shall provide complete performance curves to encompass the map of operations, with any limitations indicated thereon.</p> <p>9.2.4.2 Overall performance curves shall be submitted for rated, minimum, and maximum specified ambient temperatures.</p> <p>9.2.4.3 Curves shall include a plot of discharge pressure, and brake horsepower against delivered standard flow. Curves shall indicate surge, rated capacity, and any other specified operating points. Curves that show throttling effects at off-design inlet conditions shall also be provided.</p> <p>9.2.4.4 Preliminary speed-torque curves shall be provided</p>	Speed torque curve is to be provided to HOCL along with supply and shall be submitted to the verification of TPI

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97	9.3.1	<p>9.3.1.1 Contract data shall be furnished by the vendor in accordance with the agreed VDDR form.</p> <p>9.3.1.2 Each drawing shall have a title block in the lower right- hand corner with the date of certification, identification data specified in 9.1.2, the revision number and date, and the title. Similar information shall be provided on all other documents including Sub vendor items.</p> <p>9.3.1.3 The purchaser will promptly review the vendor’s data upon receipt; however, this review shall not constitute permission to deviate from any requirements in the order unless specifically agreed upon in writing. After the data have been reviewed and accepted, the vendor shall furnish certified copies in the quantities specified.</p> <p>9.3.1.4 A complete list of vendor data shall be included with the first issue of the major drawings. This list shall contain titles, drawing numbers, and a schedule for transmittal of each item listed. This list shall cross-reference data with respect to the VDDR form in Annex D.</p>	As per NIT
98	9.3.3	<p>Progress Reports</p> <p>The vendor shall submit progress reports to the purchaser at the intervals specified.</p>	Progress reports monthly on first of every month should be provided as part of an engineered project.
99	9.3.4.1	<p>Parts Lists and Recommended Squares</p> <p>9.3.4.1 The vendor shall submit complete parts lists for all equipment and accessories supplied. The lists shall include part names, manufacturer’s unique part numbers, materials of construction (identified by applicable international standards), and delivery times. Each part shall be completely identified and shown on appropriate cross-sectional, assembly-type cutaway or exploded-view isometric drawings. Interchangeable parts shall be identified as such. Parts that have been modified from standard dimensions or finish to satisfy specific performance requirements shall be uniquely identified by part number. Standard purchased items shall be identified by the original manufacturer’s name and part numbers.</p>	Supplier references all parts by vendor part numbers. Spare parts lists are provided per supplier standard format also acceptable.

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100	9.3.5.2	<p>Installation Manual</p> <p>Any special information required for proper installation design that is not on the drawings shall be compiled in a manual that is separate from the operating and maintenance instructions. This manual shall be forwarded at a time that is mutually agreed upon in the order but not later than the issue of final certified drawings. the final issue of prints.</p> <p>The manual shall contain information for receiving the units and for preservation of the units prior to service. It will include information such as special alignment and grouting procedures, utility specifications (including quantities), and all other installation design data, including the drawings and data specified in 9.2.2 and 9.2.3. The manual shall also include sketches that show the location of the center of gravity and rigging provisions to permit the removal of the top half of the casings, rotors, and any sub assemblies that weigh more than 136 kg (300 lbs.).</p>	<p>Operating and Maintenance Manuals are provided as per supplier standard format also acceptable and should be in line with NIT requirement.</p>
101	Annexure	Annexure A, B, C, D, F & G	As per NIT