



Bid Number/बोली क्रमांक (बिड संख्या):
GEM/2023/B/3206591
Dated/दिनांक : 01-03-2023

Bid Document/ बिड दस्तावेज़

Bid Details/बिड विवरण	
Bid End Date/Time/बिड बंद होने की तारीख/समय	13-03-2023 14:00:00
Bid Opening Date/Time/बिड खुलने की तारीख/समय	13-03-2023 14:30:00
Bid Offer Validity (From End Date)/बिड पेशकश वैधता (बंद होने की तारीख से)	60 (Days)
Ministry/State Name/मंत्रालय/राज्य का नाम	Ministry Of Chemicals And Fertilizers
Department Name/विभाग का नाम	Department Of Chemicals And Petrochemicals
Organisation Name/संगठन का नाम	Hindustan Organic Chemicals Limited
Office Name/कार्यालय का नाम	Ambalamugal,ernakulam
Total Quantity/कुल मात्रा	1
Item Category/मद केटेगरी	VIBRATION ANALYZER
BOQ Title/बीओक्यू शीर्षक	VIBRATION ANALYZER
Years of Past Experience Required for same/similar service/उन्हीं/समान सेवाओं के लिए अपेक्षित विगत अनुभव के वर्ष	3 Year (s)
MSE Exemption for Years Of Experience/अनुभव के वर्षों से एमएसई छूट/	Yes
Startup Exemption for Years Of Experience/अनुभव के वर्षों से स्टार्टअप छूट/	Yes
Document required from seller/विक्रेता से मांगे गए दस्तावेज़	Experience Criteria,Past Performance,Certificate (Requested in ATC),OEM Authorization Certificate,Additional Doc 1 (Requested in ATC),Additional Doc 2 (Requested in ATC),Additional Doc 3 (Requested in ATC),Compliance of BoQ specification and supporting document *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer
Past Performance/विगत प्रदर्शन	80 %
Bid to RA enabled/बिड से रिवर्स नीलामी सक्रिय किया	No
Type of Bid/बिड का प्रकार	Two Packet Bid

Bid Details/बिड विवरण

Time allowed for Technical Clarifications during technical evaluation/तकनीकी मूल्यांकन के दौरान तकनीकी स्पष्टीकरण हेतु अनुमत समय	2 Days
Evaluation Method/मूल्यांकन पद्धति	Total value wise evaluation

EMD Detail/ईएमडी विवरण

Required	No
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ePBG Detail/ईपीबीजी विवरण

Required	No
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Splitting/विभाजन

Bid splitting not applied.

MII Purchase Preference/एमआईआई खरीद वरीयता

MII Purchase Preference/एमआईआई खरीद वरीयता	Yes
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MSE Purchase Preference/एमएसई खरीद वरीयता

MSE Purchase Preference/एमएसई खरीद वरीयता	Yes
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1. If the bidder is a Micro or Small Enterprise as per latest definitions under MSME rules, the bidder shall be exempted from the requirement of "Bidder Turnover" criteria and "Experience Criteria" subject to meeting of quality and technical specifications. If the bidder is OEM of the offered products, it would be exempted from the "OEM Average Turnover" criteria also subject to meeting of quality and technical specifications. In case any bidder is seeking exemption from Turnover / Experience Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer.
2. If the bidder is a Startup, the bidder shall be exempted from the requirement of "Bidder Turnover" criteria and "Experience Criteria" subject to their meeting of quality and technical specifications. If the bidder is OEM of the offered products, it would be exempted from the "OEM Average Turnover" criteria also subject to meeting of quality and technical specifications. In case any bidder is seeking exemption from Turnover / Experience Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer.
3. Experience Criteria: In respect of the filter applied for experience criteria, the Bidder or its OEM {themselves or through reseller(s)} should have regularly, manufactured and supplied same or similar Category Products to any Central / State Govt Organization / PSU / Public Listed Company for number of Financial years as indicated above in the bid document before the bid opening date. Copies of relevant contracts to be submitted along with bid in support of having supplied some quantity during each of the Financial year. In case of bunch bids, the category of primary product having highest value should meet this criterion.
4. Preference to Make In India products (For bids < 200 Crore): Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. The minimum local content to qualify as a Class 1 local supplier is denoted in the bid document. If the bidder wants to avail the

Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020. Only Class-I and Class-II Local suppliers as per MII order dated 4.6.2020 will be eligible to bid. Non - Local suppliers as per MII order dated 04.06.2020 are not eligible to participate. However, eligible micro and small enterprises will be allowed to participate .In case Buyer has selected Purchase preference to Micro and Small Enterprises clause in the bid, the same will get precedence over this clause.

5. Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% (Selected by Buyer)of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for 25%(selected by Buyer) percentage of total QUANTITY.

6. Estimated Bid Value indicated above is being declared solely for the purpose of guidance on EMD amount and for determining the Eligibility Criteria related to Turn Over, Past Performance and Project / Past Experience etc. This has no relevance or bearing on the price to be quoted by the bidders and is also not going to have any impact on bid participation. Also this is not going to be used as a criteria in determining reasonableness of quoted prices which would be determined by the buyer based on its own assessment of reasonableness and based on competitive prices received in Bid / RA process.

7. Past Performance: The Bidder or its OEM {themselves or through re-seller(s)} should have supplied same or similar Category Products for 80% of bid quantity, in at least one of the last three Financial years before the bid opening date to any Central / State Govt Organization / PSU / Public Listed Company. Copies of relevant contracts (proving supply of cumulative order quantity in any one financial year) to be submitted along with bid in support of quantity supplied in the relevant Financial year. In case of bunch bids, the category related to primary product having highest bid value should meet this criterion.

VIBRATION ANALYZER

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

Brand Type/ब्रांड का प्रकार	Unbranded
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Technical Specifications/तकनीकी विशिष्टियाँ

Specification Document	View File
BOQ Detail Document	View File

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

Consignees/Reporting Officer/प्रेषिती/रिपोर्टिंग अधिकारी and/ तथा Quantity/मात्रा

S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	UNNIMAYA K P	682302,HINDUSTAN ORGANIC CHEMICALS LTD, AMBALAMUGAL ERNAKULAM	1	30

Buyer Added Bid Specific Terms and Conditions/क्रेता द्वारा जोड़ी गई बिड की विशेष शर्तें

1. Generic

OPTION CLAUSE: The Purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity by up to 25% of the contracted quantity during the currency of the contract at the contracted rates. Bidders are bound to accept the orders accordingly.

2. Generic

Bidder financial standing: The bidder should not be under liquidation, court receivership or similar proceedings, should not be bankrupt. Bidder to upload undertaking to this effect with bid.

3. Generic

Bidders are advised to check applicable GST on their own before quoting. Buyer will not take any responsibility in this regards. GST reimbursement will be as per actuals or as per applicable rates (whichever is lower), subject to the maximum of quoted GST %.

4. Generic

Actual delivery (and Installation & Commissioning (if covered in scope of supply)) is to be done at following address

HINDUSTAN ORGANIC CHEMICALS LTD
AMBALAMUGAL P.O
AMBALAMUGAL
ERNAKULAM
KERALA

5. Generic

Bidder shall submit the following documents along with their bid for Vendor Code Creation:

- Copy of PAN Card.
- Copy of GSTIN.
- Copy of Cancelled Cheque.
- Copy of EFT Mandate duly certified by Bank.

6. Generic

Data Sheet of the product(s) offered in the bid, are to be uploaded along with the bid documents. Buyers can match and verify the Data Sheet with the product specifications offered. In case of any unexplained mismatch of technical parameters, the bid is liable for rejection.

7. Generic

Experience Criteria: The Bidder or its OEM {themselves or through reseller(s)} should have regularly, manufactured and supplied same or similar Category Products to any Central / State Govt Organization / PSU / Public Listed Company for 3 years before the bid opening date. Copies of relevant contracts to be submitted along with bid in support of having supplied some quantity during each of the year. In case of bunch bids, the primary product having highest value should meet this criterion.

8. Generic

Installation, Commissioning, Testing, Configuration, Training (if any - which ever is applicable as per scope of supply) is to be carried out by OEM / OEM Certified resource or OEM authorised Reseller.

9. Generic

Manufacturer Authorization:Wherever Authorised Distributors/service providers are submitting the bid, Authorisation Form /Certificate with OEM/Original Service Provider details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid

10. Generic

Supplier shall ensure that the Invoice is raised in the name of Consignee with GSTIN of Consignee only.

11. Generic

Without prejudice to Buyer's right to price adjustment by way of discount or any other right or remedy available to Buyer, Buyer may terminate the Contract or any part thereof by a written notice to the Seller, if:

- i) The Seller fails to comply with any material term of the Contract.
- ii) The Seller informs Buyer of its inability to deliver the Material(s) or any part thereof within the stipulated Delivery Period or such inability otherwise becomes apparent.
- iii) The Seller fails to deliver the Material(s) or any part thereof within the stipulated Delivery Period and/or to replace/rectify any rejected or defective Material(s) promptly.
- iv) The Seller becomes bankrupt or goes into liquidation.
- v) The Seller makes a general assignment for the benefit of creditors.
- vi) A receiver is appointed for any substantial property owned by the Seller.
- vii) The Seller has misrepresented to Buyer, acting on which misrepresentation Buyer has placed the Purchase Order on the Seller.

12. Generic

1. The Seller shall not assign the Contract in whole or part without obtaining the prior written consent of buyer.
2. The Seller shall not sub-contract the Contract in whole or part to any entity without obtaining the prior written consent of buyer.
3. The Seller shall, notwithstanding the consent and assignment/sub-contract, remain jointly and severally liable and responsible to buyer together with the assignee/ sub-contractor, for and in respect of the due performance of the Contract and the Sellers obligations there under.

13. Generic

While generating invoice in GeM portal, the seller must upload scanned copy of GST invoice and the screenshot of GST portal confirming payment of GST.

14. Scope of Supply

Scope of supply (Bid price to include all cost components) : Supply Installation Testing Commissioning of Goods and Training of operators and providing Statutory Clearances required (if any)

15. Purchase Preference (Centre)

Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated

23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for percentage of 25% of total value.

16. **Purchase Preference (Centre)**

Purchase Preference linked with Local Content (PP-LC) Policy:

The bid clause regarding "Preference to Make In India products" stands modified in this bid and shall be governed by the PPLC Policy No. FP-20013/2/2017-FP-PNG dated 17.11.2020 issued by MoP&NG as amended up to date. Accordingly, bidders with Local Content less than or equal to 20% will be treated as "Non Local Supplier". The prescribed LC shall be applicable on the date of Bid opening. Sanctions on the bidders for false / wrong declaration or not fulfilling the Local Content requirement shall be as per the PPLC policy. Further following additional provisions are added in the certification and verification of local content provision of the Preference to Make in India clause:

- i. In case of foreign bidder, certificate from the statutory auditor or cost auditor of their own office or subsidiary in India giving the percentage of local content is also acceptable. In case office or subsidiary in India does not exist or Indian office/subsidiary is not required to appoint statutory auditor or cost auditor, certificate from practicing cost accountant or practicing chartered accountant giving the percentage of local content is also acceptable.
- ii. Along with Each Invoice: The local content certificate (issued by statutory auditor on behalf of procuring company) shall be submitted along with each invoice raised. However, the % of local content may vary with each invoice while maintaining the overall % of local content for the total work/purchase of the pro-rata local content requirement. In case, it is not satisfied cumulatively in the invoices raised up to that stage, the supplier shall indicate how the local content requirement would be met in the subsequent stages.
- iii. The bidder shall submit an undertaking from the authorized signatory of bidder having the Power of Attorney along with the bid stating the bidder meets the mandatory minimum LC requirement and such undertaking shall become a part of the contract.

17. **Past Project Experience**

Proof for Past Experience and Project Experience clause: For fulfilling the experience criteria any one of the following documents may be considered as valid proof for meeting the experience criteria:a. Contract copy along with Invoice(s) with self-certification by the bidder that service/supplies against the invoices have been executed.b. Execution certificate by client with contract value.c. Any other document in support of contract execution like Third Party Inspection release note, etc.**Proof for Past Experience and Project Experience clause:** For fulfilling the experience criteria any one of the following documents may be considered as valid proof for meeting the experience criteria:a. Contract copy along with Invoice(s) with self-certification by the bidder that service/supplies against the invoices have been executed.b. Execution certificate by client with contract value.c. Any other document in support of contract execution like Third Party Inspection release note, etc.

18. **Past Project Experience**

The Bidder / OEM {themselves or through reseller(s)}, should have executed project for supply and installation / commissioning of same or similar Category Products during preceding 3 financial years (i.e. current year and three previous financial years) as on opening of bid, as per following criteria:

- (i) Single order of at least 35% of estimated bid value; or
- (ii) Two orders of at least 20% each of estimated bid value; or
- (iii) Three orders of at least 15% each of estimated bid value.

Satisfactory Performance certificate issued by respective Buyer Organization for the above Orders should be uploaded with bid. In case of bunch bids, the Category related to primary product having highest bid value should meet this criterion

19. **Buyer Added Bid Specific ATC**

Buyer Added text based ATC clauses

- a) **ALL PARTIES HAVE TO DO THE DEMONSTRATION OF THEIR INSTRUMENT AT HOCL F OR TECHNICAL BID ACCEPTANCE**
- b) **THE PARTIES SHOULD PROVIDE A FREE CALIBRATION FOR A PERIOD OF FIVE YEARS FOR THE VIBRATION ANALYZER AND ITS ACCESSORIES. THE QUOTED RATES SHALL BE INCLUSIVE OF THE RATES FOR THE CALIBRATION FOR 5 PERIODS.**
- c) **CALIBRATION CERTIFICATES ALONG WITH THE TRACEABILITY CERTIFICATES, WARRANTY & GUARANTEE CERTIFICATES FOR VIBRATION ANALYZERS, PROBES AND OTHER ACCESSORIES, OPERATION AND INSTRUCTION MANUALS SHOULD BE PROVIDED ALONG WITH SUPPLY**
- d) **THE EQUIPMENT SHOULD BE INTRINSICALLY SAFE & EXPLOSION PROOF FOR APPLICATION INSIDE PHENOL & H2O2 PLANT AREAS AND CERTIFICATE FOR THE SAME SHALL ALSO BE SUBMITTED ALONG WITH THE SUPPLY.**
- e) **SUCCESSFUL TENDERER SHALL DEPOSIT AN AMOUNT EQUIVALENT TO 3% OF THE VALUE OF ORDER AS SECURITY DEPOSIT/PBG WITHIN 21 DAYS OF THE ORDER TOWARDS SATISFACTORY EXECUTION OF THE ORDER. NO INTEREST WILL BE PAID ON THIS AMOUNT BY HOCL. PBG SHALL BE VALID FOR A PERIOD OF MIN 1 YEAR FROM SUPPLY/INSTALLATION & COMMISSIONING**
- f) **DULY FILLED, SIGNED AND SEALED SPECIFICATION SHEET SHOULD BE SUBMITTED ALONG WITH TECHNICAL BID. IF ANY DEVIATION, PLEASE INDICATE SEPARATELY**

20. **Buyer Added Bid Specific ATC**

Buyer uploaded ATC document [Click here to view the file.](#)

21. **Certificates**

Bidder's offer is liable to be rejected if they don't upload any of the certificates / documents sought in the Bid document, ATC and Corrigendum if any.

22. **Certificates**

Material Test Certificate Should Be Sent Along with The Supply. The Material Will Be Checked by Buyer's Lab & the Results of the Lab will be the Sole Criteria for Acceptance of the Item.

23. **Certificates**

The bidder is required to upload, along with the bid, all relevant certificates such as BIS licence, type test certificate, approval certificates and other certificates as prescribed in the Product Specification given in the bid document.

Disclaimer/अस्वीकरण

The additional terms and conditions have been incorporated by the Buyer after approval of the Competent Authority in Buyer Organization, whereby Buyer organization is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any eccentricity / restriction arising in the bidding process due to these ATCs and due to modification of technical specifications and / or terms and conditions governing the bid. Any clause(s) incorporated by the Buyer regarding following shall be treated as null and void and would not be considered as part of bid:-

1. Definition of Class I and Class II suppliers in the bid not in line with the extant Order / Office Memorandum issued by DPIIT in this regard.
2. Seeking EMD submission from bidder(s), including via Additional Terms & Conditions, in contravention to exemption provided to such sellers under GeM GTC.
3. Publishing Custom / BOQ bids for items for which regular GeM categories are available without any Category item bunched with it.
4. Creating BoQ bid for single item.
5. Mentioning specific Brand or Make or Model or Manufacturer or Dealer name.
6. Mandating submission of documents in physical form as a pre-requisite to qualify bidders.
7. Floating / creation of work contracts as Custom Bids in Services.
8. Seeking sample with bid or approval of samples during bid evaluation process.
9. Mandating foreign / international certifications even in case of existence of Indian Standards without specifying equivalent Indian Certification / standards.
10. Seeking experience from specific organization / department / institute only or from foreign / export experience.
11. Creating bid for items from irrelevant categories.
12. Incorporating any clause against the MSME policy and Preference to Make in India Policy.
13. Reference of conditions published on any external site or reference to external documents/clauses.
14. Asking for any Tender fee / Bid Participation fee / Auction fee in case of Bids / Forward Auction, as the case may be.

Further, if any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller within 4 days of bid publication on GeM. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations.

[This Bid is also governed by the General Terms and Conditions/ यह बिड सामान्य शर्तों के अंतर्गत भी शासित है](#)

In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws./जेम की सामान्य शर्तों के खंड 26 के संदर्भ में भारत के साथ भूमि सीमा साझा करने वाले देश के बिडर से खरीद पर प्रतिबंध के संबंध में भारत के साथ भूमि सीमा साझा करने वाले देश का कोई भी बिडर इस निविदा में बिड देने के लिए तभी पात्र होगा जब वह बिड देने वाला सक्षम प्राधिकारी के पास पंजीकृत हो।बिड में भाग लेते समय बिडर को इसका अनुपालन करना होगा और कोई भी गलत घोषणा किए जाने व इसका अनुपालन न करने पर अनुबंध को तत्काल समाप्त करने और कानून के अनुसार आगे की कानूनी कार्यवाई का आधार होगा।

---Thank You/धन्यवाद---



HINDUSTAN ORGANIC CHEMICALS LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)
AMBALAMUGAL, ERNAKULAM DISTRICT, PIN – 682
302PHONE: (0484) 2720911

Item Number	Item Description	Quantity (NO)
1	<p>Vibration analyzer with provisions for bearing condition monitoring, vibration monitoring, temperature monitoring, non contact speed measurement etc... Including probes, transducers and other accessories like flame proof case etc. and also PC software for data backup and vibration signature analysis of the readings taken. The detailed technical specification requirement is attached.</p> <p>Preferred Makes : M/s SPM Instruments (SPM Lenova Diamond) / M/s Pruftechnik Aimil Condition Monitoring Pvt Ltd (VIBEXPERT II) / M/s Aecom (Falcon Essential) & M/s IRD Mechanalysis (Falcon Essential) / Bentley – Nevada / Rockwell Automation</p> <p>The scope of supply includes the calibration of the vibration analyzer and the accessories for a minimum period of 5 years</p>	1

NOTE:

- a) **ALL PARTIES HAVE TO DO THE DEMONSTRATION OF THEIR INSTRUMENT AT HOCL FOR TECHNICAL BID ACCEPTANCE**
- b) **THE PARTIES SHOULD PROVIDE A FREE CALIBRATION FOR A PERIOD OF FIVE YEARS FOR THE VIBRATION ANALYZER AND ITS ACCESSORIES. THE QUOTED RATES SHALL BE INCLUSIVE OF THE RATES FOR THE CALIBRATION FOR 5 PERIODS.**
- c) **CALIBRATION CERTIFICATES ALONG WITH THE TRACEABILITY CERTIFICATES, WARRANTY & GUARANTEE CERTIFICATES FOR VIBRATION ANALYZERS, PROBES AND OTHER ACCESSORIES, OPERATION AND INSTRUCTION MANUALS SHOULD BE PROVIDED ALONG WITH SUPPLY**
- d) **THE EQUIPMENT SHOULD BE INTRINSICALLY SAFE & EXPLOSION PROOF FOR APPLICATION INSIDE PHENOL & H₂O₂ PLANT AREAS AND CERTIFICATE FOR THE SAME SHALL ALSO BE SUBMITTED ALONG WITH THE SUPPLY.**
- e) **SUCCESSFUL TENDERER SHALL DEPOSIT AN AMOUNT EQUIVALENT TO 3% OF THE VALUE OF ORDER AS SECURITY DEPOSIT/PBG WITHIN 21 DAYS OF THE ORDER TOWARDS SATISFACTORY EXECUTION OF THE ORDER. NO INTEREST WILL BE PAID ON THIS AMOUNT BY HOCL. PBG SHALL BE VALID FOR A PERIOD OF MINIMUM 1 YEAR FROM SUPPLY/INSTALLATION & COMMISSIONING**
- f) **DETAILED TECHNICAL SPECIFICATION IS AS FOLLOWS.**

TECHNICAL SPECIFICATIONS FOR THREE CHANNEL VIBRATION ANALYSER WITH LATEST CONDITION MONITORING SOFTWARE

Vibration analyzer with provisions for bearing condition monitoring, vibration monitoring, temperature monitoring, non-contact speed measurement, single plane balancing etc... Including probes, transducers and other accessories like flame proof case etc. and also PC software for data backup and vibration signature analysis of the readings taken. The preferred technical specification for the vibration analyzer is attached here with.

<u>Sr.No</u>	<u>Specification</u>	<u>Requirement</u>	<u>Vendor Confirmation</u>
<u>Data Collector Specifications and requirements</u>			
a)	<u>Weight:</u>	Light weight (2.0 Kg max. with battery Pack),	
b)	<u>Display:</u>	<ul style="list-style-type: none"> • Large view area (4" wide screen minimum), • TFT/ LCD type color display with high resolution with automatic or adjustable back light • Contrast adjustment arrangement suitable for clear view at bright day light and night conditions. 	
c)	<u>Number of Channels:</u>	<ul style="list-style-type: none"> • Capable of simultaneous real time data capture from all the channels without multiplexing. • Should have an additional channel for speed and temperature measurements. 	
d)	<u>Speed and Temperature Measurement:</u>	Should have the facility to measure both contact & non contact type speed measurement and temperature measurement.	
e)	<u>Dynamic Range:</u>	Greater than 100 dB.	
f)	<u>Storage Memory:</u>	Minimum 1GB with provision for expansion up to 4GB/8GB	

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g)	<u>Battery Life:</u>	Rechargeable battery and shall be capable of minimum continuous use up to 10 hrs. Data should be saved automatically in the event of a low battery.	
h)	<u>PC Communication Interface:</u>	USB 2 or higher (direct connection to PC) / Ethernet / Wi-Fi	
i)	<u>Operating Temperature:</u>	-10°C to 50°C	
j)	<u>Environmental Protection:</u>	IP 65 or better	
k)	<u>Shock Protection:</u>	Min 1m drop test certified according to IEC 60079-0	
l)	<u>Input Channels:</u>	<ul style="list-style-type: none"> • Vibration: Three Channel Vibration analyzer with synchronized inputs. • RPM/ Tacho: 1- separate channel for Speed measurement. • Temperature: 1 – separate/in-built temp channel for non-contact temp. measurements 	
m)	<u>Operating System:</u>	Should be compatible with all variants/upgrades of Microsoft Windows (including Windows 10).	
Features of Data Collector / Analyzer			
a)	<u>Types of Measurement:</u>	<p>Overall accelerations, overall velocity, overall displacement, overall bearing vibration (envelope acceleration value/shock pulse/Bearing defect factor/kurtosis), time waveform, demodulated spectrum, FFT measurement capability with symptoms</p> <ul style="list-style-type: none"> • RMS, Peak, Peak- to- Peak, Calculated peak and calculated peak-peak • Filters – DC to 40 KHz • Severity – ISO 10816-3 / ISO 2372 or user defined. • Resolution- 25600 lines 	

b)	<u>Measurement Range / Accuracy</u>	<u>Bearing Monitoring:</u> dBm/dBc: -9 to 99 dBsv LR/HR: -19 to 99 dBsv <u>Tachometer:</u> Measuring Range : 1 to 120000 RPM	
c)	<u>Vibration Transducer Types:</u>	Any transducers (disp., vel. or acc.) with voltage output	
d)	<u>Vibration Measuring Techniques:</u>	ISO 2372, ISO 10816, FFT with symptoms, EVAM, Cepstrum, Orbit, Current analysis, 3 channels simultaneously, balancing etc.	
e)	<u>Overall Display:</u>	i) Display of overall velocity, overall acceleration and Bearing Condition Factor ii) Choice to view the low, medium and high frequency range spectra on the same screen iii) Facility to view amplitude units (acc./vel./displacement) in a variety of industry standard units and scale of amplitude axis in linear/logarithmic/decibels axis on the captured FFT. iv) View both high frequency (bearing, gear and rotor bar information) and low frequency (shaft speed, alignment, looseness, etc.) ranges on the same spectrum. The software should have features of setting alarms on narrow and broad frequency bands. v) "Zoom" displays of frequency axis to separate closely spaced frequency components.	
f)	<u>Envelope Spectrum Display:</u>	Envelope Spectrum shall be available for antifriction bearing and gear box analysis.	
g)	<u>Orbit Display:</u>	The analyzer should have the capability to view orbit plots	
h)	<u>Time Waveform Display</u>	The analyzer should be capable of time waveform capture & should be capable of deriving FFT from the recorded Time Waveform	
i)	<u>Slow Speed measurements:</u>	Instruments should have the facility to do the slow speed measurements for machine speed < 30 RPM to find out the problems in early stages.	

Required Capabilities of System: Data capturing (Route with tree structure displayed for ease of navigation) / off route Data Collection) for the following analysis along with suitable display: -

a)	<u>FFT Analysis:</u>	<ul style="list-style-type: none"> ● Frequency Range – DC to 40 kHz ● FFT Resolution –25600 lines ● Windows – Hanning, rectangular and flattop ● Analysis Functions – Spectrum, Time waveform, Envelope, Cepstrum, Orbit, (amplitude & phase), waterfall plot. ● Zoom FFT – Should be available with Zoom function. ● Averaging – Linear, peak hold etc. ● Overall and Band Alarms. 	
b)	<u>Antifriction Bearing Measurement and Analysis:</u>	Capability for bearing health monitoring based on envelope acceleration value/shock pulse/defect factor/kurtosis/peak Value methods	
c)	<u>Bearing Noise:</u>	Instruments should have the facility to listen to the bearing noise from the same accelerometer using headphones. Headphones with attachments to Vibration Analyzer shall be supplied.	
d)	<u>Automatic Fault Diagnosis</u>	Instrument shall have the facility to perform an automatic fault diagnosis on the machine with faults and recommendations given by the instrument itself along with a star rating as a confidence level for the diagnosed fault	
<u>Software: Database Management System:</u>			
a)	The software should be supplied to handle large databases of more than 2 GB within the same tree structure for historical analysis. The instrument should have facility to import/export the route from instrument to upload/download to the software database for ease of machine trial operations.		
b)	Easy & faster communication with the data collector and transfer of all data stored in the data collector.		
c)	Periodical overall data trend & narrow band parameter trend, FFT spectral trend in waterfall manner, etc. shall be available		
d)	Should be able to perform post-collection filtering & FFT, based on required frequency range, on the collected time waveform.		
e)	Should have in-built database of antifriction bearings of different manufacturers along with the bearing defect frequencies, and facility for manual addition of new data to the database.		
f)	Should be able to overlay any two collected spectra, and/or characteristic defect frequencies on collected spectra for comparison & analysis.		
g)	Should have the facility to show the machine train status at a glance with threshold violation information.		

h)	Should have a dashboard like Human Machine Interface (HMI) to help to visualize the machines of a complete plant at a glance with threshold violation information.	
i)	The software should be able to generate reports for managing the condition monitoring program through the computer.	
j)	The software should be supplied with minimum THREE Read and Write Licenses to install and use the software on the three PCs for simultaneous operation.	
k)	The software system should be of the latest version with facility for future up-gradation.	
l)	The software should have a password protection facility.	
<u>Supportability:</u>		
a)	The OEM should have a local support / service center available in India which should be capable of supporting the data logger, sensors and software/ hardware for at least 10 years	
b)	The firm marketing the product should be backed and counter guaranteed by the OEM for supportability and all services rendered. The firm should be the sales / service responsibility of the OEM in India.	
c)	Bidder to provide a certificate of guarantee for back up support for a min period of 10 years.	
<u>Training:</u>		
	The bidder should conduct a training module covering all the Theoretical & Practical aspects of the applications of the subject and the product at HOCL premises. The course material for the training module shall be supplied from of cost.	
<u>List of items/accessories to be supplied within the package and should not be limited to the below as the package should have all the features meeting the tender specification:</u>		
	<ol style="list-style-type: none"> 1. Vibration Analyzer including sensors / transducers for vibration measurement and probes/sensors for bearing condition monitoring including case, communication cables, rechargeable batteries and battery adapters with cable, carrying strap with safety buckle 2. PC software with Read and Write Licenses - Qty: 1 3. Non-Contact RPM Measurement probes – Qty – 1no. 4. Non-Contact Temperature Measurement kit- Qty: 1 5. Headphone with connectivity to instrument- Qty: 1 	

Note: