



EOI No.: NAL/PUR/NTF/118/21-Z

Dated: 29-October-2021

EXPRESSION OF INTEREST [Non - COMMITAL]

FOR

**Operations and Maintenance of Compressed Air Facilities at NTAF
Division, CSIR-NAL IN GOCO MODEL**

**COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH
NATIONAL AEROSPACE LABORATORIES
P.B. NO.1779, HAL AIRPORT ROAD, KODIHALLI,
BENGALURU-560017**



Council of Scientific and Industrial Research
National Aerospace Laboratories
PB No.1779, HAL Airport Road, Bengaluru – 560 017, Karnataka-India
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Website: www.nal.res.in
ISO:9001:2015 Certified

INVITATION / NOTICE INVITING FOR EXPRESSION OF INTEREST (EOI)

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research, an autonomous body under Department of Scientific and Industrial Research (Government of India), New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites an Expression of Interest (EOI) from reputed and competent Bidders for the **“Operations and Maintenance of Compressed Air Facilities at NTAF Division in Government Owned Company Operated (GOCO) model”**. Bidders are requested to submit all the required documents for Bidder evaluation as per Pre-qualification criteria.

1. EOI / Tender Document can be downloaded free of cost directly from the Central Public Procurement Portal (CPPP) of Government of India website, <https://www.eprocure.gov.in/epublish/app>. A copy of the EOI / Tender Document is also available on CSIR-NAL Website, www.nal.res.in.
2. The address for obtaining further information:
The Senior Controller of Stores & Purchase
Purchase Section
CSIR- National Aerospace Laboratories
PB No.1779, HAL Airport Road, Kodihalli, Bengaluru – 560017
Karnataka-India
Tel # : 080 25086040/6041/6044
Fax # : 080 25269611
Email : purchasek@nal.res.in, mkala@nal.res.in
3. The prospective bidders should adhere to due dates specified in Tender Details corresponding to this Tender on E-Tender portal <https://www.eprocure.gov.in/epublish/app>.

4. The Schedule for Submission of EOI / Bids and Opening of Bids is as follows: -

Date & Time of Submission of EOI / Bid		Date and Time of Opening of Bid	
Date	Time (IST) Hrs	Date	Time (IST) Hrs
30-Nov-2021	10:00	30-Nov-2021	11:00

5. The Participants are requested to submit documentary evidence to prove technical capabilities, client list, experience and credentials.
6. The bidders should necessarily be from INDIA.
7. The Director, CSIR-National Aerospace Laboratories (NAL), Bengaluru, India reserves the right to accept or reject any bids or accept all EOI / Tenders either in part or in full or to split the order, or to annul the bidding process without assigning any reasons there for.

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29-11-21

**Sr. Controller of Stores & Purchase
For and on behalf of CSIR**

1. Brief Description

The objective of this EOI is to select the suitable Company / Contractor for the following major tasks related to Operations and Maintenance of Compressed Air Facilities and infrastructure at NTAF Division of CSIR-NAL

- Operations of Compressors and dryer systems, cooling water systems, water treatment plants.
- Continuous charging of air receiver systems (during testing periods)
- Routine maintenance of the auxiliary systems
- Routine inspection and cleaning of air receiver systems and air ductings.

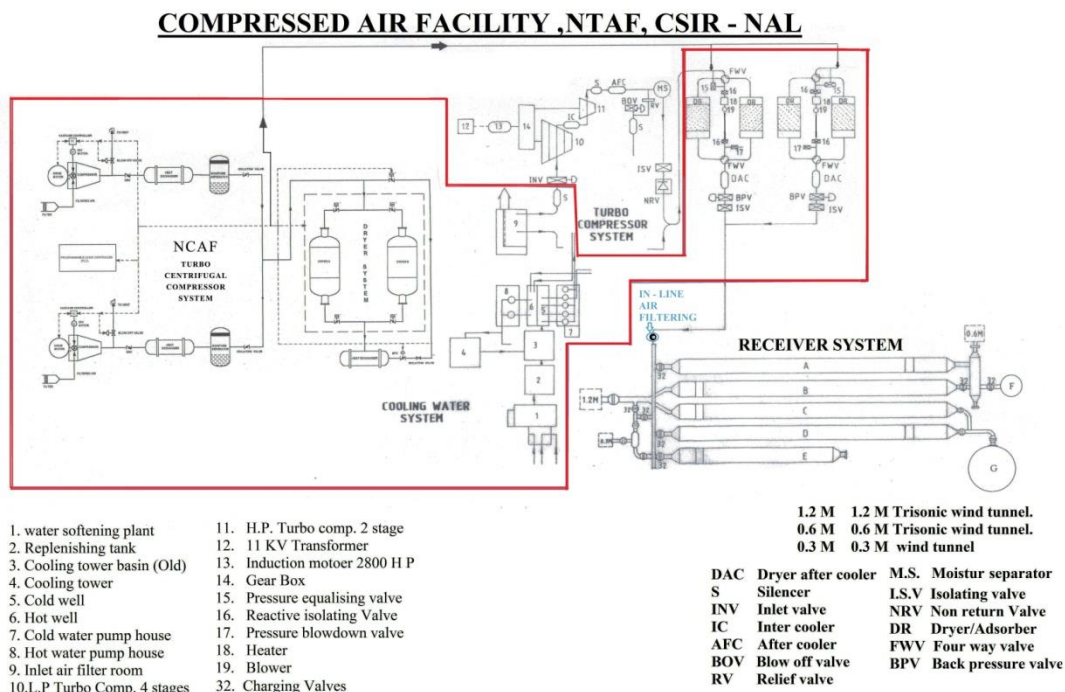
The selected Contractor / bidder shall be an established Company/Contractor with relevant experience in the tasks mentioned above.

Details for Operations and Maintenance of Compressed Air Facility at NTAF Division, CSIR-NAL

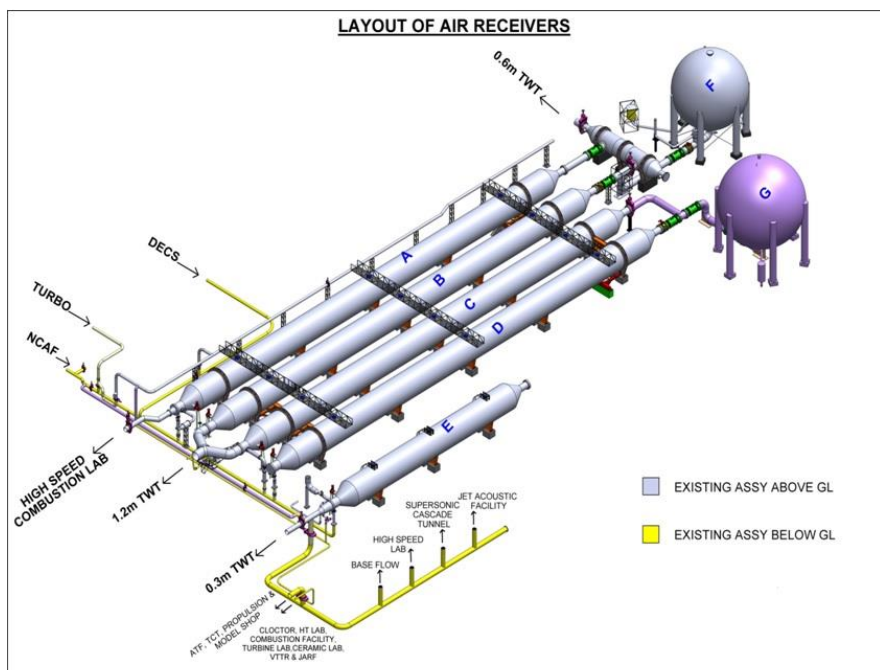
The National Trisonic Aerodynamic Facilities (NTAF) division of CSIR-NAL has been serving the country as a nucleus of research and development in high speed aerodynamics since the last five decades. Every Indian aerospace vehicle has graduated out of CSIR-NAL's 1.2m x 1.2m trisonic wind tunnel. The NTAF is well known for its long and proven experience in providing high quality vital and strategic experimental aerodynamic data required for complex aerospace programmes of the country with the unique ability to develop novel and advanced test techniques. The NTAF is operated as national facility founded by three major users viz., ISRO, DRDO and CSIR and maintained by CSIR-NAL. The NTAF has contributed immensely to all the National programmes of CSIR-NAL, DRDO, ISRO and HAL with utmost security and confidentiality.

To conduct tests in the facilities, stored dry air (volume~4500 m3) compressed to about 11 bar pressure using compressors is used.

The compressed air facility which supplies air for all the test facilities at National Wind Tunnel Centre Campus is shown schematically below;



Highlighted portion and the receiver system are proposed for O&M



The Compressed Air Facility at CSIR-NAL comprises of a centrifugal compressor plant (2 Compressors - NCAF), along with its associated dryer systems, dryer reactivation systems, cooling water system, water treatment plants and a network of air ducting with air storage receiver system.

Gross features of the equipments are as under;

Centrifugal compressors:2 Nos	
Make	Joy Cooper
No. Of stages	4
Motor Rating	2815 HP, 11KV each
Free Air Delivery	283 cu.m/min each
Air delivery pressure	165 psig

Dryers systems :3 Nos.	
Dryer Vessels	6
Type	Dual Adsorption type
Desiccant used	Silica Gel
Capacity of volume flow	20000SCFM
Desiccant Load	7500kg/Dryer vessel
Drying cycle	3-4 hrs
Reactivation cycle	8-10 hrs
Outlet air humidity	0.0001 lb/lb
Dewpoint	less than or equal to -38 deg C
Heater rating	340 KW
Reactivation temp	204 deg C

Cooling Water Tower : 1 No	
Make	Shriram Tower Tech
Type	Induced Draught counter flow
Structure	RCC
No. Of Cells	3
No. Of Fans	3
Type of fan blade	Adjustable Pitch, FRP
Amount of water to be cooled	1215 cu.m/hr
Cooling range	8-9 deg C
Hold up volume in basin	150000 ltrs

Water Treatment Plant : 2 Nos.	
Make	1. Ion exchange India
	2. Dexter Watertech
Process	Ion exchange
Capacity	360 ltrs/min
Water quality	pH 7-7.5
Total hardness	less than 5 ppm
Alkalinity	less than 90 ppm

Storage system	
Type	5 Cylindrical and 2 spherical receivers
Volume	4500 cu.m
No. Of reservoirs	7
No. Of valves	30 (motorised gate/butterfly valves)
Ducting includes universal pipe joints and bellows	

Note for Bidders

NTAF compressors (2 Nos.) are under the AMC of Ingersoll Rand which includes the compressor hardware and drive software maintenance.

Spares

Will be provided by CSIR-NAL after due diligence
Desiccant for dryers (Silica gel) will be supplied by CSIR-NAL

Maintenance

Handling equipment and manpower (minimal, if required) will be provided for maintenance by CSIR-NAL.

Audit of air quality

Will be under CSIR-NAL purview.
Calibration of health monitoring systems will be under CSIR-NAL
AMC of compressors (from Ingersoll Rand) are also under CSIR-NAL's purview.

Requirement from Bidders

1. To operate and maintain the above systems with adequate trained man power
2. Routine maintenance of the equipments used.
3. Days of operation : 6 days per week
4. Timings : 0630 hrs to 2200 hrs Mon-Fri and Sat 0900 hrs- 1700 hrs

2. Eligibility Criteria

The eligibility criteria for the Company/Contractors to submit their Bids / EOI are as below:

- i. The Bidder should be a Company/Contractor engaged on O&M of large compressed air facilities in the country.
- ii. The companies / contractors desirous of submitting their Bids / EOIs shall have a currently valid accreditation with ISO-9001:2015 or as relevant.
- iii. More than 3 years of experience in O & M of compressor systems of capacity 5000 cfm (>10 bar pressure) and above.

- iv. The Company / contractor shall possess Human Resource with adequate knowledge, expertise and experience in the areas of centrifugal compressors of the capacity of 5000 cfm (and >10 bar pressure) and above.
- v. Experience in operating cooling water systems and water treatment plants.
- vi. Handling of valves(air) and compressed air receiver system management
- vii. Knowledge of SCADA and PLC working environment.

2.1 General Notes

1. Companies/Contractors will have to sign an NDA with CSIR-NAL to further participate in the tender process, **when the RFQ is raised.**
2. A detailed technical and commercial proposal to be submitted by the Companies/Contractors during the EOI bid process on the basis of actual (on-field) assessment of all the systems on-site.
3. **The qualified Companies/Contractors may visit CSIR-NAL, Bengaluru, for thorough assessment of magnitude of work involved.**
4. CSIR-NAL expects that the qualified Company/Contractor would implement the best industrial practices to further optimise manpower requirements.
5. Any damage to CSIR-NAL property by manpower deployed by Company/Contractor must be fully borne by the Company/Contractor.
6. The Company/Contractor is completely responsible for the safety of the deployed personnel at CSIR-NAL
7. **CSIR-NAL reserves the right to split, add, remove or modify any of the Work Packages at any point of time.**

3 Other Terms

3.1 EOI Document

The detailed EOI document shall be downloaded from CPPP Portal <https://www.eprocure.gov.in/epublish/app> and CSIR-NAL website www.nal.res.in at free of cost.

3.2 Clarifications on the EOI / Tender Document

Any clarification in the EOI / Tender document may be sent in writing to the following address or through email:

The Senior Controller of Stores & Purchase
Purchase Section

CSIR- National Aerospace Laboratories

PB No.1779, HAL Airport Road, Kodihalli,

Bengaluru – 560017, Karnataka-India

Tel # : 080 25086040/6041/6044 ; Fax # : 080 25269611

Email purchasek@nal.res.in, mkala@nal.res.in

However, no extension of the time or date will be provided on the ground that CSIR-NAL has not responded to any query/clarification raised by Any Bidder.

3.3 Amendment to Terms and Conditions of EOI

- 3.3.1 CSIR-NAL may at its discretion or as a result of a query, suggestion or comment of any Bidder, may modify the EOI / Tender document by issuing an amendment or a corrigendum at any time before opening the EOI / Tender. Any such Addendum or Corrigendum will be uploaded on CPPP Portal

<https://www.eprocure.gov.in/epublish/app> and CSIR-NAL's website www.nal.res.in and the same will be binding on all the Bidders, as the case may be.

3.3.2 CSIR-NAL at its discretion may extend the due date of submission of quotation and the decision of CSIR-NAL in this respect would be final and binding on the respondents. In the event of changes in the time schedule, CSIR-NAL shall notify the same on CPP Portal <https://www.eprocure.gov.in/epublish/app> and CSIR-NAL website www.nal.res.in. Interested Bidders are advised to check the above websites regularly for corrigendum / addendum, if any, which will be published.

3.3.3 No oral modification or interpretation of any provisions of this EOI / Tender enquiry shall be valid. Written communication shall be issued by CSIR-NAL when changes, clarifications or amendments to the document are deemed necessary by CSIR-NAL at its sole discretion.

3.4 Submission and sealing of Bids

3.4.1 Submission, Sealing and Marking of Bids

3.4.1.1 The bidders may submit their duly sealed bids generally by post or by hand.

3.4.2 Sealing of Bids in the case of bids invited on Single Bid Basis:

3.4.2.1 The Bidder shall mark the Bids as "Original" and "Copy". The Original and copy bids shall be sealed in an envelope.

Marking of Envelopes:

a)	The inner and outer envelopes shall be addressed to the Purchaser indicated at Clause No.3.2
b)	The name and address of Bidder, Tender No., due date and warning "Do not open before" to be completed with the time and date as specified in the Invitation for bids.
c)	All envelopes should be superscribed with: <ul style="list-style-type: none"> • EOI/Tender Number..... • Due Date..... Time..... • Name of the Bidder..... • Addressed to: The Director CSIR-National Aerospace Laboratories PB NO.1779, Kodihalli, HAL Airport Road Bengaluru - 5600017 Karnataka-India

3.4.2.2 If the outer envelope is not sealed and marked as required above, the Purchaser will assume no responsibility for the bid's misplacement or premature opening of the submitted bid. In such cases, bids received in open condition within the due date and time will be accepted at the risk of the bidder if the same is presented to the Sr. Controller of Stores & Purchase before expiry of the due date and time of opening of the bids.

3.5 The submission of EOI should be in English language and should be free from correction, over writing, erasures etc. Duly authorized representative of the Applicant shall sign on each page of the EOI and related documents. The documents should be prepared in such a way so as to provide a straight forward, concise description of Applicant and capabilities to satisfy the requirements of this enquiry.

3.6 If at any time during the examination, evaluation and comparison of EOI / Tenders, CSIR-NAL at its discretion can ask the Bidder for the clarification of its submitted documents. The request for

clarification and the response shall be in writing. However, no post submission of EOI / Tender / clarification at the initiative of the Bidder shall be entertained.

- 3.7 All cost and expenses associated with preparation and submission of EOI response shall be borne by the Bidder while submitting the EOI. CSIR-NAL shall have no liability, in any manner in this regard, or if it decides to terminate the process of short listing for any reason whatsoever.
- 3.8 No Agent/Agents or third party/parties are engaged by CSIR-NAL in this process.
- 3.9 CSIR-NAL is not responsible for any firm/agency expression or representing to express himself/herself/themselves to be the agent or third party representing CSIR-NAL in this process.
- 3.10 It is advised to deal directly with CSIR-NAL representative who is the signatory to this document.
- 3.11 Disregard of any instruction may result in offer being ignored.
- 3.12 This EOI and subsequent tender is governed by TERMS AND CONDITIONS of CSIR-NAL.
- 3.13 Canvassing by respondents in any form, including unsolicited letters on documents submitted or post corrections shall render their response liable for rejection summarily.
- 3.14 Conditional offers will be summarily rejected. EOI / Tender document, which is found to be incomplete in content and / or attachments and / or authentication etc. is liable to be rejected.
- 3.15 EOI / Tenders that are incomplete in any respect or those that are not consistent with the requirements as specified in this document may be considered non-responsive and may be liable for rejection and no further correspondence will be entertained with such Bidders.
- 3.16 Request for proposal (RFP)/Tender will be online through e-Tender Central Public Procurement Portal (CPPP) of Government of India, <https://etenders.gov.in>.**
- 3.17 CSIR-NAL reserves the right to accept a response to EOI enquiry notification or reject any or all of them or withdraw the Notice at any stage of processing without assigning any reason whatsoever. Such an event would not cause obligation of any kind to CSIR-NAL.
- 3.18 Bidder evaluation criteria**
 - 3.18.1 Bidder evaluation will be made by a Committee constituted by the Director, CSIR-NAL.