CSIR - NATIONAL PHYSICAL LABORATORY
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No. 14-VII/PS(3049)25PB/T-95 **Date : 17-10-2025**

INVITATION OF EXPRESSION OF INTEREST (EOI)
For the procurement of "Gas Sensor Testing System"

CSIR-National Physical Laboratory, New Delhi is one of the earliest national laboratories set up under the Council of Scientific & Industrial Research. CSIR-NPL is the custodian of National Standards and maintains the Indian Standard Time (IST). It is mandated to be India's National Measurement Institute (NMI) by an act of Parliament. CSIR-NPL disseminates precision measurements that are needed for the growth of Indian science and industry as well as for the legal metrology needs of the nation. Over the years the laboratory has developed expertise in the subject enabling it to shift its basis for measurement standard from 'artifact' to quantum standards. The laboratory provides apex level calibration services in the country; offering National Accreditation Board for Testing and Calibration Laboratories (NABL), the national accreditation body in the country.

EOI are hereby invited through Central Public Procurement (CPP) Portal https://epublishing.gov.in/eprocure through **OFFLINE HARD COPY** of offers from manufacturers, their authorized distributors and Indian Agent of Foreign principals, if any, under the provision of various policy initiatives and notifications issued by various Ministries / Departments of the Govt. of India for purchase of items listed below:

EOI Ref No.: 14-VII/PS(3049)25PB/T-95

Procurement of "Gas Sensor Testing System"

Last date of submission: 31 October, 2025 upto 3.00 PM

Date of opening : 03 November, 2025 at 3.00 PM

Interested bidders may download the EOI document/details from our website: **www.nplindia.in** under link of TENDER/PIC or from **CPP Portal (ePublishing)** website **https://eprocure.gov.in/epublish** under tender ID **2025_CSIR_816143_1** and if you need any technical query may contact through e-mail singhp.nplindia@csir.res.in

Sd/
Sr. Controller of Stores and Purchase

Subject : Invitation for Expression of Interest (EOI) for the procurement of "Gas Sensor Testing System".

CSIR-National Physical Laboratory, New Delhi has the responsibility of realizing the units of physical measurements based on the International System (SI units) under the subordinate legislations of weights & Measures Act 1956 (reissued in 1988 under the 1976 Act). NPL also has the statutory obligation to realize, establish, maintain, reproduce and update the national standards of measurement & calibration facilities for different parameters. CSIR-NPL is the custodian of National Standards and maintains the Indian Standard Time (IST). It is mandated to be India's National Measurement Institute (NMI) by an act of Parliament. CSIR-NPL disseminates precision measurements that are needed for the growth of Indian science and industry as well as for the legal metrology needs of the nation. Over the years the laboratory has developed expertise in the subject enabling it to shift its basis for measurement standard from 'artifact' to quantum standards. The laboratory provides apex level calibration services in the country; offering National Accreditation Board for Testing and Calibration Laboratories (NABL), the national accreditation body in the country.

Broad Objectives:

EOI are hereby invited from reputed engineering/fabricating companies/firms for putting up "Gas Sensor Testing System". Complete Turnkey solution including specified hardware components and integrated accessories with a single software for making a fully automated system for testing all commercial air quality gas sensors. The system must consists dynamic gas mixing solution including water vapour), capable of control the flow, reference measurement systems (certified).

Eligibility Criteria:

Firms can apply with technical datasheet and/or scheme, along with the documentary evidence for work of similar nature done in the past. The firms should also meet the other required parameters to eligible for participating in the EOI as given below and are required to submit following information along with their applications:

1.) Name of the firm with their constitution/proprietorship/partnership details etc., with the date of establishment/registration & Manufacturer's authorization certificate/OEM authorization to be submitted.
2.) List of similar orders successfully completed in the last three years as above with testimonials from department concerned and the details of contact persons, if any.
3.) The firm should not have incurred any loss in more than two years during the last five years ending 31st March 2025.
4.) Declaration of blacklisting/non-blacklisting by the prospective bidder should be submitted.
5.) List of works in hand giving nature of work, department, cost, date of start and completion with present progress and the contact details of clients.
6.) Balance sheet of the firm for previous two years (2023-2024 and 2024-2025) must be enclosed with the offer certified by charted accountant evidencing turnover.
7.) The article of association in order to know the standing of the firm.

8.) **The EOI will be of "Non-committal" in nature** i.e. keeping in view that after EOI stage and to avoid getting trapped into a legacy technology, if there is any likelihood of further participation by many more bidders, the second stage bidding may not be restricted only to the shortlisted bidders of EOI stage. Thereafter in the second stage, normal OTE/GTE bidding may be done.

Un-priced Offers against this EOI should be submitted to "The Director, CSIR-NPL, Dr. K.S. Krishnan Marg, New Delhi-110012, Main Building, Room No. 160, Purchase Branch as per the requirement. Last date of submission of EOI is 31 October 2025 upto 3.00 PM. Shortlisted eligible firms shall be called for making a presentation at a later date.

If any information furnished by the applicant is found incorrect at a later stage, it shall be liable to be debarred from tendering/taking up of work in CSIR. CSIR-NPL reserves the right to verify the particulars furnished by the applicant; independently. CSIR-NPL reserves the right to reject any prospective application without assigning any reason.

Gas Sensor Testing System

Complete Turnkey solution including specified hardware components and integrated accessories with a single software for making a fully automated system for testing all commercial air quality gas sensors. The system must consists dynamic gas mixing solution including water vapor), capable of control the flow, reference measurement systems (certified).

Key Requirement of the system, along with other components required:

Dynamic Gas Generation System: Consists of two calibrators (one dedicated to hydrogen) to automatically create a mixture with target concentrations of the following components: O_2, CO, NH_3, NO, NO_2, SO_2, H_2S, N_2H_4, CO_2, CH_4, LPG, H_2.

Other components:

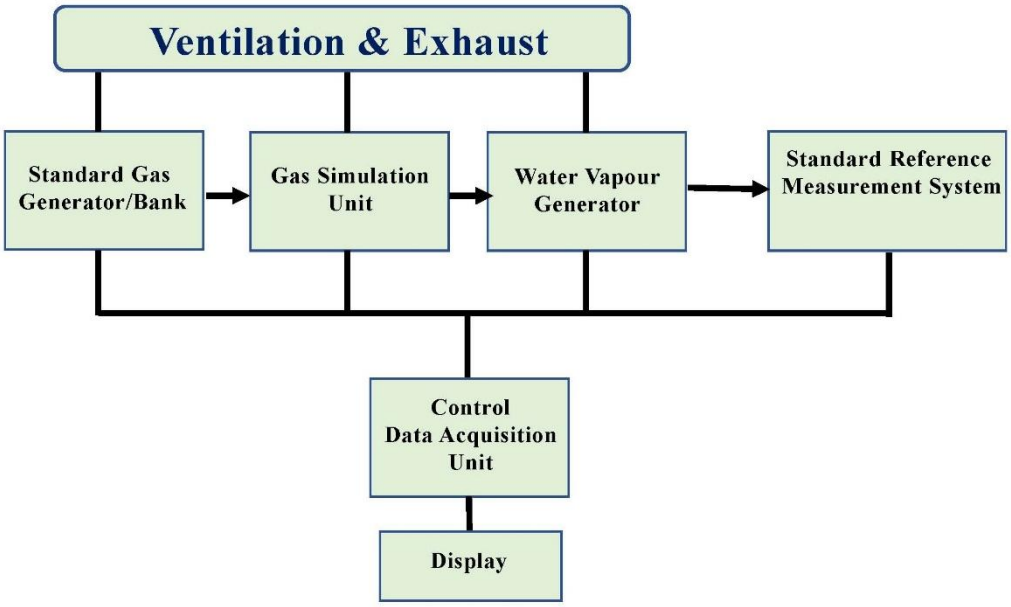
<table>
<tr><th>S. No.</th><th>Other components required</th></tr>
<tr><td>1.0</td><td>Gas Sensor Testing System</td></tr>
<tr><td>1.1</td><td>Capable to generate mixer of gases as per the requirements with moisture to simulate the ambient condition of gases (listed in Table 1.1).

Table 1.1
<table>
<tr><th>Gas</th><th>Range</th><th>Lower Detection limit</th></tr>
<tr><td>H_2</td><td>0.1 - 4%</td><td>0.1%</td></tr>
<tr><td>O_2</td><td>0.5 - 25 %</td><td>0.5%</td></tr>
<tr><td>CO</td><td>20 ppb - 100 ppm</td><td>20 ppb</td></tr>
<tr><td>NH_3</td><td>1 ppb - 100 ppm</td><td>1 ppb</td></tr>
<tr><td>H_2O</td><td>0.01-3%</td><td>0.01%</td></tr>
<tr><td>NO</td><td>20 ppb - 100 ppm</td><td>20 ppb</td></tr>
<tr><td>NO_2</td><td>0.2 ppb - 20 ppm</td><td>0.2 ppb</td></tr>
<tr><td>SO_2</td><td>0.4 ppb - 20 ppm</td><td>0.4 ppb</td></tr>
<tr><td>H_2S</td><td>0.4 ppb - 10 ppm</td><td>0.4 ppb</td></tr>
<tr><td>N_2H_4</td><td>5 ppb - 1 ppm</td><td>5 ppb</td></tr>
<tr><td>CO_2</td><td>0.1 - 100%</td><td>0.1%</td></tr>
<tr><td>CH_4</td><td>0.1 - 100%</td><td>0.1%</td></tr>
<tr><td>LPG</td><td>0.1 - 100%</td><td>0.1%</td></tr>
</table></td></tr>
<tr><td>1.2</td><td>Software controlled gas heating unit</td></tr>
<tr><td>1.3</td><td>Standard calibration system for chromatographs, mass spectrometers, and gas sensors</td></tr>
<tr><td>1.4</td><td>Gas injection system with all fittings & fixtures</td></tr>
<tr><td>1.5</td><td>Automatic data acquisition system with time stamp</td></tr>
<tr><td>1.6</td><td>Certified reference measurement systems for gases listed in Table 1.1 with the specifications mentioned therein</td></tr>
<tr><td>1.7</td><td>The system inbuilt with vibration test of sensors</td></tr>
<tr><td>1.8</td><td>The system must have three test cells</td></tr>
<tr><td>1.9</td><td>Data handling unit with customized software, with a suitable display unit</td></tr>
<tr><td>1.10</td><td>The system must have integrated high purity Nitrogen, Hydrogen, and Zero Air gas generator with Automatic Selection Switch</td></tr>
</table>

End Use & Scope of system:

The Gas Sensor Testing System will be used for gas sensor testing and calibration, and to support the industry, MSMEs, and startups. It will be a unique platform to provide services to commercial sensor manufacturers and sensor developers at academic and research institutes.

Schematic diagram of the system



Any Other Requirement :

1. **Uncertainty Budget & Traceability:** The integrator must provide the traceable chart, calibration certificates & uncertainty budget of the entire system.
2. **Installation & Commissioning the system**: The integrator install & commission the facility by its own resources (which includes standard gases, VOCs, all fitting/fixing & electrical connections).
3. **Warranty:** One year standard warranty of the entire system.
4. **Training**: Provide hands-on training to five persons with training certificate.