

Call for Expressions of Interest and Proposal

#016 - Job Title: To provide a required low-cost sensor system to measure air quality (PM2.5), ensuring air quality monitoring at the 3 models of climate- resilient and environmentally sustainable healthcare facilities (CRESHCFs), ultimately supporting healthier environments for patients and staff

1. Background:

To achieve Viet Nam Prime Minister's commitment on zero-carbon emission for Viet Nam by 2050, WHO has been supporting the health sector to apply WHO Global Framework for Climate Resilient and Environmentally Sustainable Healthcare facilities (CRESHCFs) by building three (03) models for CRESHCFs in Nghe An, Lao Cai and Ben Tre provinces and preparing for scale- up throughout the country. When building those models, four (04) components including 1) Capacity Building; 2) WASH in healthcare facilities; 3) Green energy and 4) Infrastructure, technology and products, have been improved to increase climate resilience and environmental sustainability. Several initiatives have been made for green-house gas (GHG) emission inventory and reduction; however, all three models still lack equipment to measure air pollutants (especially PM2.5 as a main concerned pollutant) for monitoring air quality to protect their healthcare workers and patients.

In healthcare facilities where incinerators are still in use, monitoring air quality is essential to assess current conditions and develop effective strategies for reducing GHG emissions, such as replacement of the incinerators or reducing emissions at the source. In addition, having equipment to monitor air quality allows the hospital management to raise awareness among both healthcare workers and patients, reinforcing the facility's commitment to environmentally sustainable medical services and practices.

Low-cost sensors are widely applied for monitoring air quality in communities, institutions and households; however, they have yet to be implemented in healthcare facilities. Therefore, as an initiative, WHO Viet Nam aims to pilot the use of low-cost sensors to improve monitoring air quality in the three CRESHCF models to draw lessons learnt before scaling up.

WHO Viet Nam is looking for a service provider to provide low-cost sensor systems for the three CRESHCF models. These sensors will support data collection, inform emission reduction strategies, and enhance environmental sustainability in health care settings.

2. Planned timelines (3 months)

- Start Date: 25 June 2025
- End Date: 15 September 2025

3. Work to be performed

Method(s) to carry out the activity

Under the supervision of the WHO Country Office in Viet Nam, the contractual partner should develop the three low-cost sensor systems for CRESHCF models, including Yen Thanh District Hospital in Yen Thanh, Nghe An province; Bac Ha District Hospital, Lao Cai province and Cu Lao Minh Regional Hospital, Ben Tre province throughout the contract period.

It should ensure that the required low-cost sensor systems will be fully installed and put into operation. The contractual partner needs to conduct a technical survey and assessment for design, budget estimate, construction and installation of the following main components:

- Hardware: low-cost sensors, 3 sensors for each hospital site at the appropriate locations.
- Software: software for data management and use.

Selected sites: 3 specific sites will be selected based on the survey to represent air quality of the hospitals.

Output: Technical survey and assessment, designing, constructing, installing and putting into operation the required low-cost sensor system meeting minimum technical specifications at the hospital

- Deliverable 1.1: A technical survey and assessment report to prepare for installation by 1 July 2025
- Deliverable 1.2: The required low-cost sensor system (both hardware and software) installed by 1 September 2025
- Deliverable 1.3: A training on operation and maintenance (O&M) for the required low-cost sensor system conducted at three CRESHCF models. By 15 September 2025

4. Specific requirements

The bidder should submit the following documents:

- Technical proposal on how to carry out the tasks and meet technical specifications (please refer to Annex 1)
- Financial proposal (sealed in separate envelope)
- Documents to prove the following requirement

The technical and financial proposals should include the following sections:

- Profile of the bidder including experience in providing low-cost sensor service
- Background information on low-cost sensor system (hardware and software)
- Technical arrangements: configuration of the system, construction, installation and operation
- Training arrangements: training materials, training schedule and implementation, operation and maintenance manual

Requirements for the company/institution:

- Business licence on low-cost sensor system for air quality monitoring registered in Viet Nam
- Demonstrated experiences in working on the required low-cost sensor system

Requirements for the project leader:

- At least 7 years of experiences in the area of air quality monitoring system

Competencies:

- Technical expertise: Knowledge of PM2.5 sensor systems, data collection, and integration in healthcare environments.
- Industry knowledge: Understanding of healthcare facility standards and climate resilience frameworks.
- Operational capabilities: Reliable sensor supply, efficient deployment, maintenance, and user training.
- Project management: Scalable implementation, stakeholder collaboration, and problem-solving for challenges.

5. Place of assignment

Anywhere in Viet Nam

6. Medical clearance

Not applicable

7. Travel

The contractual partner's team is required to travel to the three CRESHCFs sites. Cost should be included in the proposal.

8. Budget

Please take note of the following when submitting proposal:

- The contractor will be responsible for paying taxes, if any.

Full proposal with estimation of costs and supporting documents should be received **on/or before 12 June 2025** and should be addressed to:

Administrative Officer
World Health Organization
UN Building, 304 Kim Ma Street,
Hanoi, Viet Nam



OR

wpvnmaplicants@who.int

For further information on this Call for Expressions of Interest and Proposal, please contact:

wpvnmhle@who.int

Annex 1: Technical specifications of the required low-cost sensor systems for monitoring air quality (PM 2.5)

No	Products/Service	Specifications	Unit	Quantity	Notes
1	Hardware - Sensor	For measuring: Temperature (0-65 0C) Humidity (0-100%) PM2.5 (0.0 – 99 µg/m3)	9	9	The equipment should be highly resilient—features such as auto-recovery, auto-reconnect, remote configuration/support capabilities, backup power, and stable connectivity
		Data receiving and transferring SIM			
	Initial installation service	At the selected sites in the three model hospitals			
	Training on operation and maintenance			3 on-site trainings	Training materials, manual and training reports are needed
2	Software				
	Software for exploitation and management of data	Allowing access to data and exporting data, warning when reaching thresholds and linking to data system	Package/ year	1	
3	Warranty	Warranty for the whole system (hardware and software) after installation	Package/ year	1	