

Invitation to Bid

ItB26/03170

Additional Questions & Answers

Ref. no. **ItB26/03170**

Date: **10 March 2026**

Subject: ITB26/03170: Strengthening the Air Quality Monitoring Infrastructure in the Republic of Moldova

| QUESTION | ANSWER |
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| <p>Regarding the mini meteorological stations that measure wind direction, wind speed, temperature, atmospheric pressure, air humidity and solar radiation intensity), at specification no. 2 from absolute pressure sensor is requested a range of 300 - 1100 hPa. We consider that the lower limit specified in the tender (300 hPa) is extremely restrictive and, in our experience, has a limited relevance for real meteorological applications. In this regard, please clarify if you accept an absolute pressure sensor with a range of 600 to 1100 hPa.</p> | <p>We would like to clarify that the requirement regarding trace-level measurement capability was included in view of the beneficiary's operational needs and the technical objectives of the project. At the same time, the certification requirement aims to ensure compliance with applicable international standards and to guarantee equipment performance through independent assessments.</p> <p>The Contracting Authority considers that the two requirements are not contradictory. However, in order to ensure clarity and the non-discriminatory nature of the procedure, it is accepted that the demonstration of trace-level measurement capability may be provided through:</p> <ul style="list-style-type: none">• test reports issued by accredited independent bodies; and/or• official technical documentation of the manufacturer, supported by measurable and verifiable results. |

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| | <p>The requirement regarding possession of the relevant certification remains unchanged.</p> |
| <p>Item 34-35-36-37 – Fire alarm sensor, Indoor temperature sensor, Entry door opening alarm sensor We request whether all these type of sensors can be connected directly to datalogger without dedicated logger or panel</p> | <p>Fire alarm sensor, indoor temperature sensor, door opening alarm sensor, etc. may be integrated either directly into the data logger or through a dedicated system (alarm panel / physical security system), depending on the technical solution proposed by the bidder.</p> <p>No specific technical architecture is imposed; however, the proposed solution must cumulatively meet the following conditions:</p> <ul style="list-style-type: none"> • ensure continuous monitoring of the respective parameters; • allow the generation of local alarms and the transmission of remote alerts; • ensure an adequate level of reliability and security; • ensure protection against unauthorized access to the cabinet. <p>Responsibility for the design and implementation of a robust, compliant, and functional technical solution lies with the bidder, who shall demonstrate in the technical proposal the method of integration and operation of the alert system.</p> |
| <p>In relation to the “Revised Annex 1_Equipment Services and Technical Specifications > Technical specification > 13. Fire extinguisher > 1 “Fire extinguisher with powder OP-5” and given that the air quality monitoring station contains equipment with fans or airflow, optical components and sensors, electronic circuit boards, connectors, relays, terminal blocks, and other fine components for which dry</p> | <p>The Contracting Authority confirms that the requirement for equipping the station with an OP-5 type dry powder fire extinguisher is intended to ensure an appropriate means of first intervention in case of fire.</p> <p>Given the nature of the equipment installed inside the station (sensitive electrical and electronic equipment), the contracting authority considers the delivery of a CO₂ extinguisher acceptable as an equivalent alternative, provided that it is certified according</p> |

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| <p>chemical powder from a fire extinguisher may cause contamination and damage. Please confirm whether the delivery of a CO₂ fire extinguisher for electrical installations is acceptable as an alternative to a dry powder extinguisher, since CO₂ leaves no residue and significantly reduces the risk of equipment damage.</p> | <p>to applicable standards and ensures an equivalent extinguishing capacity for the identified risks. The proposed solution must comply with fire safety regulations and be suitable for use in technical spaces with live electrical equipment.</p> |
| <p>Regarding the “Revised Annex 1_Equipment Services and Technical Specifications > Technical specification > 22. Automated online analyzer for volatile organic compounds (BTEX) – (benzene, toluene, ethylbenzene, and xylene) > 17 “Automatic calibration: system shall support zero/span checks (with calibration gas input).” Please confirm whether the requirement refers strictly to the capability of the analyzer, or whether the calibration gas for the volatile organic compounds (VOC) analyzer must be included. If it is the latter, please specify whether it is a single-component calibration gas (e.g., benzene) with response factors/conversions, or a multi-component gas mixture, and also indicate the concentration(s), the required certificate uncertainty (expanded uncertainty, where applicable), the cylinder volume, and the required quantity.</p> | <p>The requirement set out in point 17 of Technical Specification 22 refers to the analyzer’s ability to perform automatic zero and span checks by introducing calibration gas, namely to the technical functionality of the equipment. Regarding the automatic online calibration of the volatile organic compounds (VOC) analyzer (BTEX – benzene, toluene, ethylbenzene, and xylene), in order to ensure correct calibration in accordance with technical practice applicable to air quality monitoring equipment, it is necessary to use:</p> <ul style="list-style-type: none"> - zero gas (synthetic air or high-purity nitrogen, free of VOCs); - a certified multicomponent mixture containing at least benzene, toluene, ethylbenzene, and xylene. <p>The multicomponent gas mixture used for calibration must be certified, with traceable concentrations and declared uncertainty in accordance with applicable standards for reference materials.</p> |
| <p>In relation to the “Revised Annex 1_Equipment Services and Technical Specifications > Technical specification > 45. Calibration gas cylinder with valve SO₂ > 46. Calibration gas cylinder with valve NO > 47. Calibration gas cylinder with valve CO”</p> | <p>The cylinders corresponding to the calibration gases specified in Technical Specifications 45 (SO₂), 46 (NO), and 47 (CO) are included in the supply and will remain the property of the Contracting Authority. Therefore:</p> |

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| <p>Given that special-gas cylinders must be periodically inspected by accredited bodies and, after a certain number of uses, refurbished by specialized manufacturers, please clarify whether the cylinders used to supply the calibration gases are included in the supply and will remain the property of the Contracting Authority, or whether the gases may be supplied in rented/leased cylinders for the duration of the 2 year mentioned period.</p> | <ul style="list-style-type: none"> • the cylinders will be delivered as an integral part of the supply, together with the corresponding calibration gases; • they must comply with the regulations applicable to pressure vessels and be accompanied by the relevant technical documentation (declarations of conformity, certificates, markings, as applicable); • the cylinders must be new or in a certified technical condition suitable for safe use; • the supplied gases must be certified, with traceable concentrations and declared uncertainty, in accordance with the standards applicable to reference materials; • at the time of delivery, the calibration gases must have a remaining validity period of at least 24 months. <p>Responsibility for the use, storage, and subsequent periodic inspections of the cylinders after the warranty period will lie with the Contracting Authority, in accordance with the applicable regulatory framework.</p> |
| <p>Cylinders with a volume of 10 L are specified. Please confirm whether the supply of cylinders with a volume greater than 10 L is also acceptable.</p> | <p>The tender documentation indicates an indicative cylinder volume of 10 liters.</p> <p>The Contracting Authority notes that it may accept the supply of cylinders with a volume greater than 10 liters, provided that:</p> <ul style="list-style-type: none"> • they are compatible with the space available in the monitoring station and with the proposed structural solution; • their installation complies with the safety requirements applicable to pressure vessels; • the functioning of the equipment and access for operation and maintenance are not affected; • all technical and safety requirements specified in the documentation are met. |

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| | <p>The final cylinder volume remains at the discretion of the bidder, insofar as the proposed solution ensures the technical and operational compliance of the station.</p> |
| <p>Given that only the filling pressure and the geometric volume of the cylinders are specified, and that the required quantity for each calibration gas is not specified (this being left in the table to the bidder's choice), while the consumption of calibration gases depends primarily on the variable time intervals permitted by the measurement standards adopted by the Beneficiary, on the frequency of verification and calibration operations set out in the Beneficiary's procedures, and on the Beneficiary's operators' variable operating practices, and only to a much lesser extent on the "requirements of the maintenance manual", please indicate the minimum quantities required for each gas (either as the number of cylinders at the specified pressure and volume, or as free gas volume in Nm³ or equivalent at normal/standard conditions).</p> | <p>Minimum quantity of 10 l calibration gas cylinders (NO, CO and SO₂) is 2 pieces/component (2+2+2).</p> |
| <p>Taking into account the following:: The clarification question cited by "ITB26_03170_Question-Answers_06022026" > Question 2: NOX ITEM 19 > third paragraph "Regarding the span verification for the SO₂ and NO_X analyzers: is the use of a permeation tube or a cylinder required? In this regard, we note that the list of consumables includes calibration kits consisting of 3 calibration gas cylinders with valves (SO₂ (1), NO (1), CO (1) of 10 l each), but permeation tubes are not mentioned, while the permeation tube is specified in the description of the</p> | <p>The bidder can choose which method for automatic daily zero and span check is used/offered – permeation tubes for SO₂ and NO₂ OR gas cylinders. If gas cylinder method is used, gases needed for span checks has to be included in the offer.</p> |

instruments. We kindly ask you to clarify how you plan to carry out the zero and span checks for the instruments."

- The response provided by the Contracting Authority to the above-mentioned question: "Regarding zero-point verification and the use of permeation tubes Bidding documents does not impose a specific technical solution (e.g. internal oven or permeation tube) for zero-point verification. The requirement is that the proposed analyzer and calibration system allow for the verification and maintenance of zero-point stability, in accordance with the requirements of the applicable standards and with the operational procedures of automatic air quality monitoring networks. In this context: -- the use of permeation tubes is accepted where technically applicable; -- other equivalent technical solutions are also accepted, provided they ensure traceability, repeatability, and reliability of zero-point verification. "
- The requirements mentioned by the "Revised Annex 1_Equipment Services and Technical Specifications" > Technical specification > 19. Automatic analyzer for nitrogen oxides (NO, NO2, NOX)
 - > 19 "Zero / Span: Permeation oven, permeation tube, zero air cartridges (or other similar system)
 - > 18 "Function Control: Function control of 2 points (zero and span) automatically (every 23 or 25 hours), manual and remote controlled"(Which require the zero and span checks to be performed automatically daily every 23 or 25 hours, with the possibility to manage them manually and remotely as well.)

Please clarify the following points:

Supplied configuration must be capable of performing automatic span checks without operator intervention.

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| <p>The supplied configuration must be capable of performing automatic span checks without operator intervention or span checks remotely controlled by the operator, including at a daily frequency. Please confirm.</p> | |
| <p>In order to meet the requirement for daily automatic span verification and for manual remote span verification, each analyzer must necessarily be supplied with one of the following solutions: either a permeation tube system (oven + tube), internal or external, or an external calibration gas cylinder installed in each station. Please confirm these two choices, as no other practical technical solution can fulfil this requirement.</p> | <p>Yes, both options are accepted.</p> |
| <p>In order to meet the requirement for daily automatic span verification and for manual remote span verification, each analyzer must necessarily be supplied with one of the following solutions: either a permeation tube system (oven + tube), internal or external, or an external calibration gas cylinder installed in each station. Please confirm these two choices, as no other practical technical solution can fulfil this requirement.</p> | <p>Yes, both options are accepted</p> |
| <p>Item 23 - Sampler for cations and anions on PM2.5 filters Sampler for cations and anions on PM10 filters -sampler for heavy metals on PM10 filters Sampler for polycyclic aromatic hydrocarbons on PM10 filters - Sampler for Benzo[a]pyrene (polycyclic aromatic hydrocarbons) on PM10 filters Heavy metals sampler With regard to "item 24 manual volume sampler," it is requested "2 filter magazines per sampler: e.g. for 17 filters, Peltier element for cooling and heating the filter</p> | <p>The requirement regarding the existence of a Peltier element to maintain the temperature of the filter storage compartment at 20°C is intended to ensure controlled and stable temperature conditions for the storage of filters during the sampling period. This requirement does not necessarily imply a distinct active heating function, but rather the system's ability to maintain the set temperature of 20°C under varying ambient conditions. Where the ambient temperature exceeds 20°C, a cooling function</p> |

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| <p>magazine 20°C."We would like to point out that Peltier or compressor-based systems are designed solely for cooling the filters and not for heating them. Furthermore, the applicable reference standards for particulate matter sampling do not require any heating of the filters. <u>We kindly ask you to clarify whether this is an error and whether only a cooling system is required, without any heating function.</u></p> | <p>is required. Where the ambient temperature is below the reference value, maintaining the temperature may be achieved through appropriate technical solutions integrated into the equipment. We confirm that any technical solution ensuring the maintenance of the filter storage compartment at 20°C is acceptable, without explicitly requiring a dedicated heating system, provided that applicable standards for atmospheric particulate sampling are respected.</p> |
| <p>Item 42 - Deployment and Operations - Point 3 Referring to item 42, We would like to ask for the following clarification regarding the server hardware: "3. Ensure permanent 99% uptime functionality for core services" Does this demand mean that some kind of high availability (H/A) solution is needed? Will an offer with only one server hardware be classified as compliant?</p> | <p>This requirement defines the Supplier's responsibility to deliver a robust, high-quality solution with appropriate monitoring and diagnostic mechanisms that enable service restoration within the agreed downtime threshold (e.g., 99.0% availability, equivalent to no more than ~7 hours of downtime per month). In the event of a catastrophic failure, the solution shall support redeployment on a secondary, customer-provided hardware platform or within a cloud environment to restore service continuity.</p> |
| <p>Mini meteorological stations that measure wind direction, wind speed, temperature, atmospheric pressure, air humidity and solar radiation intensity. Regarding the wind speed sensor and the wind direction sensor of the Mini meteorological station, for the accuracy different values have been established for cup or ultrasonic version, while for the resolution only one value has been established. We want to highlight that a resolution of 0,01 m/s for the wind speed is specific for ultrasonic wind speed sensors and cannot be met by any cup wind speed sensors available. We ask if it's acceptable a cup sensor with a resolution of the wind speed of 0,05 m/s.</p> | <p>For a mechanical cup sensors a minimum resolution of 0.05 m/s is acceptable.</p> |

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| <p>Position 20 (Automatic analyzer for carbon monoxide (CO)) – according to the specification max range was requested 0-1000. Then it decreased to 0-300 ppm. As per regulatory standards set by EPA, maximum 8 hours average results for ambient air are 9 ppm and 1 hour average is 35 ppm, so maximum range 0-200 is quite enough for ambient air monitoring. Please clarify if range 0-200 will acceptable?</p> | <p>Yes. It is acceptable.</p> |
| <p>Position 25 (Automatic precipitation sampler (EMEP)) – according to the specifications operation temperature range is: –25 °C ... +50 °C. In Minutes of the Pre-Bidding Meeting /answer for question 52 was: "Accordingly, the concern regarding operation at –25°C does not apply under the local conditions". So please clarify if –20 °C ... +50 °C will be acceptable?</p> | <p>According to the Minutes of the pre-bid meeting of 22 January 2026, it was clarified that the concern regarding operation at –25°C does not apply under local conditions, taking into account the positive operational experience of the equipment used within the national cross-border monitoring system at the Leova station.</p> <p>This clarification did not modify the technical requirement regarding the operating range, but confirmed its suitability for the climatic conditions of the Republic of Moldova.</p> <p>Therefore, the requested operating range remains –25°C to +50°C, and the proposal to limit it to –20°C is not considered compliant.</p> |
| <p>Pease let us know which vendors software do you have (if you have) for the existing AQMS ?</p> | <p>Currently, in the Republic of Moldova operate two automatic air quality monitoring stations: one industrial-type station manufactured by ENVEA, which uses CONGREGO software, and a second traffic-type station, model HORIBA, which uses BREITFFUS software.</p> |
| <p>Regarding the specifications for a 0–50 LPM flow meter: while 0 LPM is the logical state when the pump is off, most manufacturers define their operational range based on a</p> | <p>The specification “Range: 0 to min. 50 L/min” was intended to ensure that the equipment is capable of measuring flow rates up</p> |

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| <p>minimum detectable flow (e.g., 0.5–50 LPM or 0.05–50 LPM). This represents the lowest flow rate the instrument can accurately measure while the pump is running at its minimum speed. Please clarify if there is a specific minimum flow rate requirement for this application, or if any meter with a 50 LPM maximum capacity is acceptable, given that all units will read 0 LPM when the system is inactive.</p> | <p>to at least 50 L/min, while allowing the display of 0 L/min when no flow is present (e.g., when the system is inactive). As, from a technical standpoint, most manufacturers define the measurement range starting from a minimum detectable flow rate (e.g., 0.05 L/min, 0.5 L/min, etc.), the Contracting Authority accepts flowmeters whose lower measurement limit is different from 0 L/min, provided that:</p> <ul style="list-style-type: none">• the upper measurement range is at least 50 L/min;• the equipment meets the accuracy requirement of $\pm 3\%$ of the reading value within the measurement range specified by the manufacturer;• the lower measurement limit is appropriate for the intended application and documented in the technical datasheet;• all other requirements specified in the technical specifications (measurement under actual and standard conditions, temperature and pressure measurement, traceable calibration certificate, etc.) are fulfilled. |
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