

**DOCUMENT OF ANSWERS - QUESTIONS AND COMMENTS**  
**REQUEST FOR INFORMATION FROM SUPPLIERS - RFI**  
**MARKET RESEARCH**  
**MONOMEROS 002-2024**

The company Monómeros is pleased to respond to the questions and observations received within the Request for Information to Suppliers - Market Research, in order to build the terms and conditions of the International Open Bidding process to contract the "Supply of a Continuous N<sub>2</sub>O Emissions Monitoring System - CEMS, for the Nitric Acid production plant of the Simon Bolivar Complex".

**I. NOTES OF CLARIFICATION.**

Monómeros clarifies to the interested suppliers that the definitive terms of the selection and contracting process will be **published later** in Monómeros' web page, once the market conditions are verified and the requirements to be demanded to the suppliers interested in participating and being awarded the contract are defined. The International Open tender will be carried out according to the parameters defined by the General Statute of Public Procurement in force in Colombia.

In the same sense, it is clarified that a substantive and written response will be given to any observation made by the interested suppliers in the present market research stage, even if the observation is presented outside the term established in the schedule (extemporaneous); the above in order to provide clarification on the consultations made by Monómeros and to obtain a response from the suppliers through the sending of the quotation.

In the present stage of market research, suppliers shall **NOT** send any accreditation or certification documents, except for the required **budget quotation**, whose format is established in **Annex 2**. This measure is taken in order to expedite the quotation evaluation process and to avoid forcing interested suppliers to go through unnecessary administrative procedures.

It is recommended that interested suppliers **rigorously examine** the contents of the Request for Information, **Annex 1A - Technical Specifications - Requirements for Goods and Services** and other documents that are an integral part of this process, emphasizing that it is the sole responsibility of the interested parties to be familiar with their contents in their entirety.

It is clarified to the suppliers interested in participating in the present stage of market research that the commercial proposals and their quotations **will not be published or socialized** to the other interested parties, and whose power is reserved by Monómeros in

order to establish fair, transparent and equitable conditions in the process of the International Open tender that is intended to take place once the present stage of the process is completed.

In this sense, all suppliers are invited, once all their questions, concerns or observations have been resolved and all and each one of the goods and services required by Monómeros in Technical Annex 1A have been verified, to send their budget quotation (**Annex 2. Quotation and consultation format**), as well as the answers to the consultations made in the present process **only** to the e-mail [licitacionabatimiento@monomeros.com.co](mailto:licitacionabatimiento@monomeros.com.co) provided for such purpose.

The information provided by the interested parties will be used by Monómeros for the construction of the contractual terms and conditions.

## II. LIST OF QUESTIONS AND COMMENTS RECEIVED.

### 1. Observations - Questions made by INSOLTEC LTDA.

*1. We request to send us two or three isokinetic measurements of the plant of the point where we want to measure the emissions.*

It is clarified that Monómeros does have these reports which are made to comply with the environmental authority. However, these reports can only be shared with the successful bidder after signing a confidentiality agreement. Additionally, Monómeros considers that the information published in the downloadable annexes contains the necessary information for the proponents to prepare their proposals, which include relevant information of the required isokinetic measurements.

*2. Please provide a list of the sample components to be measured with the minimum, normal and maximum process ranges. Also indicate what other components accompany the sample and in what ranges they are present in the sample, clearly indicating the unit of measurement of each one.*

All this requested information is available in the annexes published at: <https://www.monomeros.com.co/market-research-of-the-supply-of-nitrous-oxide-n2o-monitoring-technology/>

Annex 1A. Technical Specifications CEMS.

Annex 1B. Datasheet FIT-11E02.

Annex 1C. Datasheet AIT-11E02.

**3. From the sample point it is required:**

**3.1 Minimum, normal and maximum pressure.** (Reported in Annex 1C).

**3.2 Minimum, normal and maximum temperature.** (Reported in Annex 1C).

**3.3 Stack diameter, thickness and material of the stack walls.** (Reported in Annex 1C).

**3.4 Indicate whether the mechanical facility to install the sampling shall be provided by Monomers or by the supplier.** (To be provided by Monómeros).

**3.5 Indicate the minimum, normal and maximum values of particulate matter. Indicate minimum, normal and maximum gas velocity.**

For the nitric acid industry, particulate matter is not likely to be found in stack emissions.

The stack gas velocity is 36.54 m/s, this value should be used for the calculations, since this type of plant operates at a relatively constant flow rate.

**3.6 Confirm the height from ground level at which the sampling point is to be installed.**

Please use the specifications defined in Annex 1A - CEMS Technical Specifications, in which Monomers informed that the successful Supplier will be responsible for providing the probe and sampling line for connection to the process, taking into account a distance between the sampling and the analyzer of at least 25 meters.

**3.7 Confirm the maximum concentration of water present in the sample.**

A maximum value of 1.4% in gas phase is estimated.

**3.8 Confirm the value in degrees Celsius of the maximum acid dew point.**

A maximum value of 80°C is estimated to avoid condensation of gases from the Monómeros nitric acid plant stack.

**4. Please confirm if the scope will only include supply or if installation is also required.**

Please use the specifications defined in Annex 1A - Technical specifications CEMS, Numeral 10.3. In which it is informed that Monómeros will be responsible for the installation of the equipment according to supplier's instructions and under supplier's supervision, the supplier will only be in charge of the supply and technical assistance service for installation and start-up.

***5. In case installation is required, please confirm if it will be at zero meters from electrical, mechanical and civil facilities. Otherwise, we suggest a visit to the plant to collect the information for the respective costing.***

The installation will be in charge of the client according to the scope described in Annex 1A - Technical Specifications CEMS, Numeral 10.3.

***6. Only data sheets for the oxygen sensor and flow transmitter are attached. Please share the data sheets for the other gases to be measured.***

The N<sub>2</sub>O analyzer data sheet is reported in Annex 1C. Datasheet AIT-11E02.

***7. Please indicate the type of communications output required. (Reference is made to digital, analog or in the case of communication protocols please indicate which one it should be).***

Modbus RTU, Modbus TCP.

***9. Confirm the voltage available at the plant for this equipment. (Reported in Annex 1C).***

***10. Confirm if the plant has air and nitrogen supply to purge the equipment to comply with the area classification.***

Equipment purging is not required.

***11. Please confirm if the plant has a Shelter for the installation of the analyzer and if it exists, please confirm if it has an air conditioning system. Please confirm the dimensions available for the installation of the analyzer inside the Shelter.***

The cabinet will be located in a temperature controlled room, which will be in charge of Monómeros.

**1. Observations - Questions made by AUTOMATION S.A.**

- 1. For this type of installation it is suggested to locate the cabinet that houses the analyzer components in a Shelter with controlled temperature conditions, is this facility available, can it be built by the end user, or will it be part of the scope of the proposal?*

The cabinet will be located in a temperature controlled room, which will be provided by Monómeros.

- 2. The scope of the components to be analyzed are N<sub>2</sub>O and O<sub>2</sub> has the possibility of extending the scope to components such as CO, CO<sub>2</sub> etc. been contemplated, either at the time of system acquisition or perhaps as an addition in the future?*

Ammonia combustion does not generate CO, CO<sub>2</sub> emissions. And for this project, we will only purchase the measurement system for N<sub>2</sub>O, O<sub>2</sub> and gas flow. However, Monómeros will be able to contemplate the future installation of NO and NO<sub>2</sub> (NO<sub>x</sub>) measurement modules, in case the equipment contemplated in this project allows the addition of the new measurement modules.

- 3. We understand that all equipment assembly activities will be in charge of the end customer with the permanent advice of the supplier, are we correct? Also confirm if it is necessary for the supplier to have its own HSEQ personnel present at the time of the activities.*

The equipment assembly activities will be in charge of Monómeros with the supplier's advice.

In the above terms, we respond to the observations and questions made to the Request for Information to Suppliers - RFI.

In evidence of the foregoing, this document is hereby published on the twenty-ninth (29th) day of February of the year 2024, subscribes the present document.

The Structuring Committee.