



Republic of North Macedonia

**Ministry of Environment  
and Physical Planning**

Air Quality Monitoring Unit

Macedonian Environmental Information Center

**Questions and Answers**

Reference: TRAP/MoEPP/MK/2018/TD03

**“Supply of Air Quality Monitoring Equipment”**

Deadline for requesting clarifications from the contracting authority: 18.02.2020, 16:00 h Local Time

Deadline for submission of tenders: 10.03.2020, 14:00 h Local time

Last date on which clarifications are issued by the contracting authority: 28.02.2020

Questions		Answers	
Q1.	Ad item 2 and 3 (also included in item 1) – Automatic analyzer for measuring of suspended particulate matter PM10 and PM2.5: As there are combined instruments on the market which will measure PM10 and PM2.5 at the same time, we kindly ask to accept a combined analyzer, if the full Test Report	A1.	Please be informed that the requirements stipulated in the Technical Specification for Item 2 and 3 (also included in Item 1) should be fulfilled by the tenderer as stated (separate instruments for PM10 and for PM2.5).



Republic of North Macedonia

**Ministry of Environment  
and Physical Planning**

Air Quality Monitoring Unit

Macedonian Environmental Information Center

	demonstrates the equivalency of the tested analyzer with the reference method according to the EN12341:1999 or EN12341:2014.		
Q2.	Items 1 & 2 & 3 " Automatic analyzer for measuring of suspended particulate matter PM10/PM2.5": For PM monitors is requested the certification according to the equivalence to the reference method EN1234. Considering that the conformity to the latest standard is required, and considering that for the PM10 and PM2.5 for Quality Assurance of the automatic measure the latest standard is EN16450:2017, we kindly ask to clarify, that the certification according to EN16450:2017 for item 1& 2 & 3 is also requested.	A2.	Please be informed that the requirements stipulated in the Technical Specification for Item 1, 2 and 3 (Automatic analyzer for measuring of suspended particulate matter PM10/PM2.5) should be fulfilled by the tenderer as stated in Item 2.2 and Item 3.2 (which is included in Item 1). Additional certification according to EN16450:2017 for Item 2.2 and Item3.2 (which is included in Item 1) is not requested.
Q3.	Item 1 & 4 "Sulphur dioxide (SO2) analyser": for the SO2 analyser are required the following minimum technical characteristic: Ranges: 0 -- 50, 100, 200, 500, 1.000, 10.000 and 20.000 ppb. Lower detectable limit: ≤ 0.4 ppb. Zero noise: ≤ 0.25 ppb. This requirements above mentioned could be an unjustifiable obstacle to competitive tendering because	A3.	Please be informed that the requirements stipulated in the Technical Specification for Item 4.3 (also included in Item 1), for different ranges (but not out of the specified range 0 – 20.000 ppb) are acceptable, if they are in accordance with the performed Type approval report and issued certificate of conformity for certification range.



Republic of North Macedonia

**Ministry of Environment  
and Physical Planning**

Air Quality Monitoring Unit

Macedonian Environmental Information Center

	<p>only few manufacturer can comply with it. In order to not exclude any potential eligible manufacturers please confirm, therefore, that Full type EU Approved reference instruments, for the measurement of Sulphur dioxide as described in EN14212:2012 will be considered acceptable by the Contracting authority and the Evaluation Committee also if has different instrumental ranges, higher lower detectable limits, and higher Zero noise features.</p>		<p>The requirements stipulated in the Technical Specification for Item 4.5 and Item 4.6 (also included in Item 1) are the minimum ones and have to be fulfilled by the tenderer as stated.</p>
<p><b>Q4.</b></p>	<p>Item 1 &amp; 5 “Nitrogen dioxide and oxides of nitrogen (NO - NO<sub>2</sub> - NO<sub>X</sub>) analyzer”: for the NO - NO<sub>2</sub> - NO<sub>X</sub> analyser are required the following minimum technical characteristic: Ranges: 0 -- 50, 100, 200, 500, 1.000, 10.000 and 20.000 ppb. Lower detectable limit: ≤ 0.4 ppb depending on averaging time. Zero noise: ≤ 0.25 ppb. This requirements above mentioned could be an unjustifiable obstacle to competitive tendering because only few manufacturer can comply with it. In order to not exclude any potential eligible manufacturers please confirm, therefore, that Full type EU Approved reference instruments, for the measurement of Nitrogen dioxide and</p>	<p><b>A4.</b></p>	<p>Please be informed that the requirements stipulated in the Technical Specification for Item 5.3 (also included in Item 1), for different ranges (but not out of the specified range 0 – 20.000 ppb) are acceptable, if they are in accordance with the performed Type approval report and issued certificate of conformity for certification range. The requirements stipulated in the Technical Specification for Item 5.5 and Item 5.6 (also included in Item 1) are the minimum ones and have to be fulfilled by the tenderer as stated.</p>



Republic of North Macedonia

**Ministry of Environment  
and Physical Planning**

Air Quality Monitoring Unit

Macedonian Environmental Information Center

	oxide as described in EN14211:2012 will be considered acceptable by the Contracting authority and the Evaluation Committee also if has different instrumental ranges, higher lower detectable limits, and higher Zero noise features.		
Q5.	<p>Item 1 &amp; 6 “Carbon monoxide (CO) analyzer”: for the CO analyser are required the following minimum technical characteristic: Ranges: 0-1, 2, 5, 10, 20, 50, 100, 200, 500 and 1.000 ppm. Lower detectable limit: <math>\leq 0.04</math> ppm. Zero noise: <math>\leq 0.02</math> ppm.</p> <p>This requirements above mentioned could be an unjustifiable obstacle to competitive tendering because only few manufacturer can comply with it. In order to not exclude any potential eligible manufacturers please confirm, therefore, that Full type EU Approved reference instruments, for the measurement of Carbon monoxide as described in EN14626:2012 will be considered acceptable by the Contracting authority and the Evaluation Committee also if has different instrumental</p>	A5.	<p>Please be informed that the requirements stipulated in the Technical Specification for Item 6.3 (also included in Item 1), for different ranges (but not out of the specified range 0 – 1.000 ppm) are acceptable, if they are in accordance with the performed Type approval report and issued certificate of conformity for certification range.</p> <p>The requirements stipulated in the Technical Specification for Item 6.5 and Item 6.6 (also included in Item 1) are the minimum ones and have to be fulfilled by the tenderer as stated.</p>



Republic of North Macedonia

**Ministry of Environment  
and Physical Planning**

Air Quality Monitoring Unit

Macedonian Environmental Information Center

	ranges, higher lower detectable limits, and higher Zero noise features.		
<b>Q6.</b>	<p>Item 1 &amp; 7 “Ozone (O3) analyzer”: for the O3 analyser are required the following minimum technical characteristic: Ranges: 0 – 100, 200, 500, 1.000 and 10.000 ppb. Lower detectable limit: <math>\leq 0.04</math> ppm. Zero noise: <math>\leq 0.02</math> ppm. This requirements above mentioned could be an unjustifiable obstacle to competitive tendering because only few manufacturer can comply with it. In order to not exclude any potential eligible manufacturers please confirm, therefore, that Full type EU Approved reference instruments, for the measurement of ozone as described in EN14625:2012 will be considered acceptable by the Contracting authority and the Evaluation Committee also if has different instrumental ranges, higher lower detectable limits, and higher Zero noise features.</p>	<b>A6.</b>	<p>Please be informed that the requirements stipulated in the Technical Specification for Item 7.3 (also included in Item 1), for different ranges (but not out of the specified range 0 – 10.000 ppb) are acceptable, if they are in accordance with the performed Type approval report and issued certificate of conformity for certification range. We would like to emphasize that in the Technical specification, for Item 7.5 is specified that the Lower detectable limit should be: <math>\leq 0.5</math> ppb and it is different than in your question (Lower detectable limit: <math>\leq 0.04</math> ppm). Also, in the Technical specification, for Item 7.6 is specified that the Zero Noise should be: <math>\leq 0.25</math> ppb and it is different than in your question (Lower detectable limit: <math>\leq 0.02</math> ppm). The requirements stipulated in the Technical Specification for Item 7.5 and Item 7.6 (also included in Item 1) are the minimum ones and have to be fulfilled by the tenderer as stated.</p>



Republic of North Macedonia

**Ministry of Environment  
and Physical Planning**

Air Quality Monitoring Unit

Macedonian Environmental Information Center

<b>Q7.</b>	Item 1 & 9 “PM10 (PM2.5, PM1) sequential standard reference sampler”: Considering that EN12341:2014 rules the PM air quality sampling, is not specified if the sampler should have the certification according the EN12341:2014 and so an official certification letter of compliancy to the latest standard issued by an accredited laboratory (TUV, MCERTS).	<b>A7.</b>	Please be informed that the requirements stipulated in the Technical Specification for Item 9.12 Features and Item 9.13 Inlets (also included in Item 1), regarding the certification, are the minimum ones and have to be fulfilled by the tenderer as stated. Additional certification according to EN12341:2014 for Item 9 (also included in Item 1) is not requested. The official Declaration on compliance of the sequential standard reference sampler with the requirements of the EN12341:2014 issued by manufacturer from the evaluation committee will be also taken into consideration if available.
<b>Q8.</b>	Item 1 & 9 “PM10 (PM2.5, PM1) sequential standard reference sampler”: Considering that the instrument should be installed in a shelter and also is required connection to the data logger and an SD slot, we ask if is acceptable that the instrument will not have the USB port.	<b>A8.</b>	Please be informed that the requirements stipulated in the Technical Specification for Item 9.7 Interface, Item 9.12 Features (also included in Item 1), regarding the USB port are the minimum ones and have to be fulfilled by the tenderer as stated.



Republic of North Macedonia

**Ministry of Environment  
and Physical Planning**

Air Quality Monitoring Unit

Macedonian Environmental Information Center

			<p>Connection to the data logger is required and have to be fulfilled by the tenderer as stated in Item 9.12 Features (also included in Item 1).</p> <p>SD slot is not required in the Technical specification.</p> <p>We would like to emphasize that in the Technical specification for Item 9.13 Installation (also included in Item 1) and Item 9.12 Features (also included in Item 1), the sequential standard reference sampler should be installed next to the monitoring station and should have the housing for external (outdoor) use and have to be fulfilled by the tenderer as stated.</p>
<b>Q10.</b>	<p>Item 1 &amp; 9 “PM10 (PM2.5, PM1) sequential standard reference sampler”: Considering that the instrument should be installed in a shelter we ask if is acceptable that the instruments will not have wheels but could be relocated and carried.</p>	<b>A10.</b>	<p>Please be informed that the requirements stipulated in the Technical Specification for Item 9.12 Features (also included in Item 1), regarding the “Base: Mobile platform with wheels for easy transfer and manipulation of the sampler” are the minimum ones and have to be fulfilled by the tenderer as stated.</p> <p>We would like to emphasize that in the Technical specification for Item 9.13 Installation (also included in Item 1) and Item 9.12 Features (also included in Item 1), the sequential standard reference sampler should be</p>



Republic of North Macedonia

**Ministry of Environment  
and Physical Planning**

Air Quality Monitoring Unit

Macedonian Environmental Information Center

			installed next to the monitoring station and should have the housing for external (outdoor) use and have to be fulfilled by the tenderer as stated.																					
<b>Q11.</b>	Considering that the quantity for the item to be supplied are the following: <table border="1"><thead><tr><th>Nr</th><th>Air Quality Monitoring Equipment</th><th>Place of delivery</th></tr></thead><tbody><tr><td>1</td><td>Air quality Monitoring station (includes the following set of analyzers: PM2.5, PM10, O3, NO-NO2-NOx, SO2 and CO analyzers, container, Calibration gases with calibrator and zero gas generator meteorological equipment, Data acquisition system (Data logger, 4G GSM router and software), PM10 (PM2.5, PM1) sequential standard reference sampler, PC (lap-top)</td><td>City of Gevgelija</td></tr><tr><td>2</td><td>Automatic analyzer for measuring of suspended particulate matter PM10</td><td rowspan="8">Existing station Bitola 1, City of Bitola</td></tr><tr><td>3</td><td>Automatic analyzer for measuring of suspended particulate matter PM2.5</td></tr><tr><td>4</td><td>Sulphur dioxide (SO2) analyzer</td></tr><tr><td>5</td><td>Nitrogen dioxide and oxides of nitrogen (NO - NO2 - NOX) analyzer</td></tr><tr><td>6</td><td>Carbon monoxide (CO) analyzer</td></tr><tr><td>7</td><td>Ozone (O3) analyzer</td></tr><tr><td>8</td><td>Meteorological equipment</td></tr></tbody></table>	Nr	Air Quality Monitoring Equipment	Place of delivery	1	Air quality Monitoring station (includes the following set of analyzers: PM2.5, PM10, O3, NO-NO2-NOx, SO2 and CO analyzers, container, Calibration gases with calibrator and zero gas generator meteorological equipment, Data acquisition system (Data logger, 4G GSM router and software), PM10 (PM2.5, PM1) sequential standard reference sampler, PC (lap-top)	City of Gevgelija	2	Automatic analyzer for measuring of suspended particulate matter PM10	Existing station Bitola 1, City of Bitola	3	Automatic analyzer for measuring of suspended particulate matter PM2.5	4	Sulphur dioxide (SO2) analyzer	5	Nitrogen dioxide and oxides of nitrogen (NO - NO2 - NOX) analyzer	6	Carbon monoxide (CO) analyzer	7	Ozone (O3) analyzer	8	Meteorological equipment	<b>A11.</b>	Please be informed that the requirements stipulated in the Technical Specification that all individual analyzers described in the Items 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11, have to be installed in the existing monitoring station Bitola 1 (in case of sequential standard reference sampler next to the existing station) located in City of Bitola and in addition, the requirements stipulated in the Technical Specification for Item 1.1, all individual analyzers described in the Items 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11, have to be installed in the new station (in case of sequential standard reference sampler next to the new station) at location in City of Gevgelija.
Nr	Air Quality Monitoring Equipment	Place of delivery																						
1	Air quality Monitoring station (includes the following set of analyzers: PM2.5, PM10, O3, NO-NO2-NOx, SO2 and CO analyzers, container, Calibration gases with calibrator and zero gas generator meteorological equipment, Data acquisition system (Data logger, 4G GSM router and software), PM10 (PM2.5, PM1) sequential standard reference sampler, PC (lap-top)	City of Gevgelija																						
2	Automatic analyzer for measuring of suspended particulate matter PM10	Existing station Bitola 1, City of Bitola																						
3	Automatic analyzer for measuring of suspended particulate matter PM2.5																							
4	Sulphur dioxide (SO2) analyzer																							
5	Nitrogen dioxide and oxides of nitrogen (NO - NO2 - NOX) analyzer																							
6	Carbon monoxide (CO) analyzer																							
7	Ozone (O3) analyzer																							
8	Meteorological equipment																							



Republic of North Macedonia

**Ministry of Environment  
and Physical Planning**

Air Quality Monitoring Unit

Macedonian Environmental Information Center

9	PM10 (PM2.5, PM1) sequential standard reference sampler		
10	Data acquisition system (Data logger, 4G GSM router and software)		
11	PC (Laptop)		
12	Training	Gevgelija and Bitola	

And considering that all the items from 2 to 11 should be delivered in the existing station of Bitola, is not clear if the new air quality monitoring station should be supplied also with analyzer described at item 2-3-4-5-6-7-10-11, please confirm.