MONTENEGRO: EU SUPPORT FOR AIR QUALITY MANAGEMENT AND MONITORING
Abstract

This case study investigates to what extent policy dialogue and EU financial support contribute to Montenegro’s progress aligning with the EU Acquis for air quality management and monitoring. Two contracts under the IPA 2014 action, “Strengthening the Capacities for Air Quality Management in Montenegro” were selected for in-depth study. This case study explores main efforts, challenges and conditions faced when implementing these contracts. Specific focus is on the strengths and weaknesses of the indirect management mode under the Central Financing and Contracting Unit (CFCU). The case study draws on the evidence collected for the 2021 “Evaluation of the European Union’s Cooperation with Montenegro 2012-2019”. Its findings are based on evidence from document analysis, and interviews with national authorities, stakeholder institutions, experts and European Commission representatives.
Between 2012-2019 the Government of Montenegro was working to align with the EU acquis on air quality management, and also to strengthen institutional capacities for planning and implementation of air quality management. The government adopted several laws to align with relevant Directives in this area, including an amendment to the Law on Air Protection (Official Gazette of Montenegro, No. 25/10, 40/11, and 43/15) and a new Law on Industrial Emissions (Official Gazette of Montenegro, No. 017/19), which are in line with the EU acquis. The legal framework has been fully aligned with EU acquis on air quality, except in regard to Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants.

Since 2009, Montenegro has monitored air quality in compliance with the EU legislation (the Directive 2008/50/EC). The network for air quality monitoring included seven automatic stations to meet requirements set out in Directives 2008/50/EC and 2004/107/EC. Air quality data are monitored in line with Directives 2008/50/EC and 2004/107/EC and reported nationally and to the EU through EIONET. Since December 2016, the Common Air Quality Index – CAQI – has been published for Montenegro and presented in five categories (from green — very low concentrations of pollutants to red — very high).

The highest concentrations of PM10, a pollutant, were recorded in Pljevlja, Nikšić and Podgorica over the period 2012-2019. Besides this, there were recorded sometimes high values of SO2, NOx and CO emissions from stationary sources of air pollution, particularly in Pljevlja due to the thermal power plant. Plans for air quality management were developed for these most affected municipalities (Nikšić, Pljevlja and Podgorica). Air quality management was also planned and managed by the National Strategy for Air Quality Management with the Action Plans for the period 2013-2016 (adopted in 2013) and 2017-2020 (adopted in 2017). There was a high rate of implementation of the 2013-2016 Action Plan (around 85%), and a bit lower for the period 2017-2019 (2017 - 100%, 2018 - 57%, 2019 - 80%). These plans took a holistic approach, combining institution building (e.g., legal and institutional framework and administrative capacities), activities for air quality monitoring, preventive activities (e.g., in transport, agriculture, clean technologies) and activities to reduce emissions of air pollutants (e.g., the Pljevlja power station, the “Željezara” steel factory in Nikšić). A new strategy for air quality management is under preparation, together with the National Programme for Progressive Reduction of National Emissions (to be in line with Directive (EU) 2016/2284). There was a lack of data for the Air Pollutant Emission Inventory since 2011 caused by technical issues and insufficient human resources in the Agency for Nature and Environment Protection of Montenegro. This inventory was updated with data for the period 2012-2018, as well as with complete time series of 1990 in accordance with the new methodology. The updated inventory was completed in March 2020 with support of the Austrian Environment Agency.

3 http://www.epa.org.me/vazduh/caqi
4 % of fully or partially implemented measures
### Responsibilities for Air Quality

<table>
<thead>
<tr>
<th>Institution</th>
<th>Responsible for:</th>
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<tbody>
<tr>
<td>Ministry of Sustainable Development and Tourism (MSDT)*</td>
<td>Establishing legal framework in line with EU legislation</td>
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<td></td>
<td>Monitoring implementation of the legislation</td>
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<tr>
<td>Agency for Nature and Environment Protection of Montenegro (EPA)</td>
<td>Managing the network of air quality monitoring stations</td>
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<td>Modelling, zoning, drawing up and implementation of air quality plans in the event of excessive pollutants</td>
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<td>Reporting on air quality</td>
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<td>Informing public about air quality</td>
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<td>Submission of data on air quality to the European Environment Agency through EIONET**</td>
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<tr>
<td>Centre for Eco-toxicological Research (CETI)</td>
<td>Air quality monitoring at measuring points in the national network for air quality monitoring</td>
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<tr>
<td>Institute of Hydrometeorology and Seismology (IHS)</td>
<td>Air quality monitoring at the EMEP station for monitoring cross-border transmission of pollution</td>
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<td>Local government authorities</td>
<td>Development and implementation of local air quality plans</td>
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### Actions supporting air quality monitoring

This case study is focused on the IPA 2014 Action “Strengthening the capacities for air quality management in Montenegro” (‘the Action’) which had the general objective, “to achieve full compliance with the requirements of the Air Quality acquis” and the specific objective “to complete the monitoring network in line with the Air Quality Directives (2008/50/EC and 2004/107/EC) and the Convention on Long-range Transboundary Air Pollution (CLRTAP) and the European Monitoring and Evaluation Programme (EMEP Protocol”**. Implementation of this Action was under management of the Directorate for Finance and Contracting of the EU Assistance Funds (CFCU), with monitoring support by the Project Implementation Unit (PIU) of the MSDT. There were two contracts related to this Action, one service contract related to review of air quality zones in line with Directive 2008/50 and another supply contract related to procurement of necessary stations and required equipment for the existing monitoring network. The EU contributed to this Action with a total value of EUR 0.93 million. The Ministry of Sustainable Development and Tourism was the main beneficiary of this Action, while the final beneficiary institutions are EPA and IHS.

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About the contracts

The contract “Strengthening the capacities for air quality management, CFCU/MNE/039” signed on 30 June 2017 and concluded on 30 December 2017.

The purpose:

• To conduct a review of air quality zones in line with Articles 5.2 and 9 of Directive 2008/50/EC and to re-design air quality monitoring network in accordance with air quality modelling results and EU acquis requirements.

• To perform capacity building activities for the relevant institutions related to quality assurance for ambient air quality assessment and air quality network management.

EU contribution: EUR 80,750.00

The contract “Supply for air quality management, CFCU/MNE/075” signed on 04 December 2018 and concluded on 26 September 2019.

The purpose:

Procurement, delivery, installation, commissioning, training and warranty for:

• Equipment for automatic fixed measuring stations for ambient air quality monitoring (equipment for upgrading 7 existing and establishing 3 new automatic fixed measuring stations for the system for ambient air quality monitoring),

• Laboratory equipment (ion chromatograph (anions and cations) and Inductively Coupled Plasma Mass Spectrometry (ICP MS)) and related consumables)

EU contribution: EUR 849,575.00

Relevance and Action Identification

The Project has been very relevant. The Action was in line with Directive 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe in the Law on Air Protection (“Off. Gazette of Montenegro”, No. 25/10, 040/11, 43/15). As stipulated in Articles 5.2 and 9 of this Directive, as well as in the national legislation, air quality zones should be reviewed every five years. The first national network for air quality monitoring was established in 2010 with measurements from seven automatic fixed stations and one EMEP station. The project responded to the need to review this national network for air quality monitoring and to procure outdated equipment to enable a stable system of measurement. It
also responded to the need for establishing measurements in accordance with the EMEP requirement, which implied better positioning of EMEP station and the procurement of equipment. This Action was identified based on the Action Plan for the period 2013-2016 of the National Strategy for Air Quality Management, especially concerning the following measures:

- to ensure donors’ funds for the improvement of air quality monitoring networks through the procurement of additional equipment (establishment of an additional automatic measuring stations, equipping of the EMEP station, replacement of old air quality analysers, etc.),

- to ensure donors’ funds for completion of the air quality monitoring program (e.g., analyses of chemical composition of particulate matter at the EMEP station) by equipping the IHS laboratory.

This Action also contributed to the achievement of operational goal 1 of the Strategy’s Action Plans for the period 2017-2020 defined as “improvement of legal and institutional framework, capacity building related to air quality management”. In addition, it contributed the measure under the National Strategy with Action Plan for Transposition, Implementation and Enforcement of the EU Acquis on Environment and Climate Change 2016-2020 (NEAS), the “extension of the network of measuring stations for monitoring air quality and reallocation of the existing measuring posts, reconstruction of the EMEP station and purchase of the additional analytical equipment for laboratory”.

There was a long timeframe between the identification of issues in 2012 to start of implementation in 2017 and 2018. There was a long timeframe between identification of issues to implementation of this Action. IPA 2014 Action Document was developed based on the collaboration of NIPAC Office, the MSDT and the final beneficiary institutions (EPA, IHS). IPA 2014 Action Document was adopted in 2014 and the financial agreement for IPA 2014 was signed at the end of 2015. CFCU contracted the first contract of this action on 30 June 2017 and another contract on 4 December 2018. As the idea for this EU assistance was developed in 2012, the needs of the beneficiary institutions were changed. For example, procurement of terrain vehicle was mentioned in Action Document, but it was excluded in the tender phase since additional equipment was outdated and there was an urgent need for procurement of additional analysers. This has prolonged the contracting phase because the CFCU need to modify requirement of a tender specification to reflect the real needs. Stakeholders confirmed that this adjustment took additional time and effort of responsible institutions.

In addition, contracts of the Action were linked as the contracting on the second (supply) contract could be done only after the completion of the first (service) contract. Namely, one of results of the service contract was a technical specification document for procurement of equipment that was developed based on the review of air quality monitoring networking. This technical specification document served as a base for launching the supply contract for procurement of necessary stations and equipment for the existing monitoring network. Interviews with national stakeholders confirmed

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* European Monitoring and Evaluation Programme (EMEP) is programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe [https://www.emep.int/index.html](https://www.emep.int/index.html)

that delays in contracting service contract caused significant delays in contracting the supply contract (more than a year). This supply contract signed only six days before the contracting deadline (10 December 2018), so there was a high risk that this contract would not have been signed until the contracting deadline.

A change of rules from IPA I to IPA II affected the indirect management of Action’s contract. The service contract of this Action was the first contract that the CFCU managed according to IPA II rules. Interviews with stakeholders confirmed that rules were changed significantly, including the preparation of tender documentation. This additionally slowed down the management of these contracts by CFCU.

There were issues regarding the preparation of the technical specification for procurement of equipment, which was at first assessed by EUD as too restricted. This was later clarified as the specification reflected the real needs and country context. Stakeholders confirmed that this technical specification enabled the procurement of high-quality equipment. However, the final beneficiary institutions confirmed that there is a need for deeper understanding and capacities of CFCU for tender preparation to adapt each tender to specific situations. For example, a warranty period for equipment was 12 months and not 24 months which is common practice for procurement of equipment. Interviews pointed out that EPA was highly engaged in development of the Action idea and technical specification, while IHS representative could be more involved in this stage. It was also stressed that IHS were not responsive enough to agreed deadlines.

Interviews indicated there were issues concerning agreed deadlines of the procurement plan by all actors (CFCU, EUD and beneficiary institutions). Further, a lack of final beneficiaries’ understanding of EU contracting procedures resulted in frequent delays in providing feedback information to the CFCU.
**Intervention delivery**

The implementation of the service contract under Action was successfully completed. Final beneficiaries were highly satisfied with the service of the consultant that was received. As a result of this contract, the air quality monitoring network and air quality zones were redesigned following the requirements of EU legislation and the capacity of the institutions related to quality assurance for air quality assessment and network management was strengthened. There were some minor issues regarding understanding that the consultant should prepare entire tender documentation of needed equipment and not just technical specification. This misunderstanding was resolved on time and did not affect the contract implementation.

As a result of this contract, the air quality monitoring network and air quality zones were redesigned based on EU requirements and the institutions for air quality assessment and network management were strengthened.

Implementation of the supply contract was delayed as the final beneficiaries were not able to set up all preconditions for installation and use of equipment on time. Namely, as a results of supply contract highly valuable equipment was ensured, such as analysers, calibration equipment, infrastructure (e.g., container with cabinets for equipment, air conditioning, fire protection and electrical installation), laboratory instruments, etc. By the end of the supply contract, IHS did not ensure all preconditions for using procured laboratory equipment (such as Ion Chromatograph and Inductively Coupled Plasma with Mass Spectrometry (ICP MS) that is necessary to comply with the analysis requirements in accordance with the EMEP Programme and national Law\(^{11}\). A premise for the laboratory was provided in 2020 after the finalization of the supply contract. Stakeholders stated that providing premises for the laboratory was hindered by long administrative procedures to obtain a building permit, firefighting approval, and other permits needed for the establishment of a laboratory. However, this laboratory equipment is still not used as the laboratory has not been accredited at the time of this evaluation.

There were also some issues in setting all preconditions for the construction of EMEP station for monitoring of transboundary air pollution in Velimlje (municipality of Nikšić) that implies the installation of a container with cabinets for equipment, air conditioning, fire protection and electrical installation. The established EMEP station was not in function for 7-8 months as one equipment was damaged by a thunderstorm and required replacement. There is a need for ensuring protection against lightning on EMEP station, for which IHS has not allocated funds. Regarding the installation of the equipment by EPA, the evaluation found that there were smaller delays (around 20 days) in this regard as EPA did not have all necessary permits for the installation of equipment for fixed stations on time. Interviews with EPA and ISH staff confirmed that they were trained for the use of provided equipment.

**Capacity Changes**

Strengthening of the capacities for air quality management can be assessed by the following three indicators as defined by the Action Plan of the National Strategy for Air Quality Management for the period 2017-2020:

- number of automatic fixed stations for air quality monitoring,
- regular air quality reporting, and
- Air Pollutant Emission Inventory and reporting to LRTAP\(^{12}\).

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\(^{11}\) This refers to a required chemical analysis of the samples that were sampled in the EMEP station.

\(^{12}\) The Convention on Long-range Transboundary Air Pollution
The Action directly contributed to the extension of the national network for air quality monitoring by two automatic fixed stations for air quality monitoring (Kotor, Bijelo Polje) and one EMEP station (Nikšić). Therefore, the number of stations for air quality monitoring has been increased from 7 to 10. As part of the revision and redesign of air quality monitoring network, the service contract also contributed to repositioning existing monitoring stations (regarding location, type of pollutants to be measured). The supply contract contributed to the installation of new equipment for monitoring at the measuring points and analysis of air quality. Besides, as results of this EU support the Decree on amendments and supplements to the Decree on establishing a network of measuring points for monitoring the quality of air (Gazette of Montenegro, No. 064/18) was adopted.

Montenegro is now reporting regularly on air quality to EEA (EIONET). The last Report on air quality was submitted in 2020 covering data from 2019. Document review and interviews with stakeholders confirmed that the installed new equipment contributed to better reporting on air quality regarding data quality and quantity (wider territory covered with data). Project funded under Multi-country IPA programme contributes also to this reporting improvement as it ensured that EPA uses RAVEN software that converts data that need to be sent to EIONET. The evaluation found that reporting to EMEP on Transboundary Air Pollution is still not improved, as IHS lacks software for data validation from the EMEP station and laboratory equipment is still not used.

The Action to some extent tackled the issue of the lack of an Air Pollutant Emission Inventory. There was no reporting on the Air Pollutant Emission Inventory between 2013 and 2019. At the time of contract implementation, the last Montenegro report to LRTAP Convention of 2013 covered only data on air pollutant emission from 1990-2011. To overcome this, the Action performed a rapid assessment of emissions to redesign the AQ monitoring network. The final report noted that “it was out of the tasks of this work the complete update of the emissions inventory. However, in order to obtain consistent results with models application it is necessary to adjust the inventory to 2015 to take in particular account of the evolution of the main emission key point sources of the country as well as the main diffuse key categories of pollution......Emissions for key sources macro sectors has been updated to the year 2015 using all the available statistical information and updated emission factors from last release of EMEP/EEA Air pollutant emission inventory guidebook (2016).” After this Action was finalised, Montenegro continued to report to LRTAP Convention in 2020 when the air pollutant emission inventory was updated with data from 1990-2018. This updated inventory was completed in March 2020 with the support of the Austrian Environment Agency.

**Key Performance and Process Changes**

Montenegro has achieved a relatively advanced level of legislative alignment with the EU Acquis in the area of air quality. The Action contributed to Montenegro progress in compliance with the requirements of the EU acquis on air quality. In particular, the Action contributed to alignment with EU Directive 2015/1480/EU related to locations of the measurements station as Decree on estab-

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lishment of a network of measuring points for air quality monitoring (Official Gazette of Montenegro no. 064/18 dated 4.10.2018.) was amended. The Action supported implementation of the Directive 2008/50/EC (on air quality and cleaner air in Europe) and Directive 2004/107/EC (As, Hg, Ni and PAH – “4 Daughter Directive”). Please see Table 1 below.

Montenegro has achieved a relatively advanced level of legislative alignment with the EU Acquis in the area of air quality.

Table 1.
Overview of measures and EU directives that were linked with implementation of the Action

<table>
<thead>
<tr>
<th>Regulation title</th>
<th>Measure</th>
<th>Achievements</th>
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<tr>
<td>Directive 2008/50/EC (on air quality and cleaner air in Europe - AAQ)</td>
<td>Extension of a measurement station network for air quality monitoring and reallocation of the existing measurement points, reconstruction of EMEP station and procurement of additional analytical laboratory equipment</td>
<td>IPA Project “Strengthening the capacities for air quality management in Montenegro” (2014/032-803.09/ME/ Air Quality was successfully closed on September 27, 2019. The air quality monitoring network has been extended to 10 (compared to previous 7) automatic stations, including the reconstruction of EMEP station for monitoring of transboundary air pollution, installed in Velimlje (Municipality of Nikšić). Additional measurement and analytical equipment, planned through the Project, was procured.</td>
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As there were missing Air Pollutant Emission Inventory with data of 2012-2019, other related measures for alignment with and implementation of Directive on the reduction of national emissions of certain atmospheric pollutants 2016/2284/EU were not able to be implemented. Such as, development of the projections of emissions and defining national programme for progressive emission reduction, proposing national emission ceilings to the CLRTAP Secretariat, amending of the Decree on the National Emission Ceilings, etc. These measures were shifted from the NEAS Action Plan 2018-2020 to the Action Plan for the fulfilment of closing benchmarks for Chapter 27. Fully alignment with this Directive 2016/2284/EU and its implementation is one of the 8 closing benchmarks that need to be fulfilled in order to close the chapter 27.

“On air quality, Montenegro fully aligns with the revised Directive on the reduction of national emissions of certain atmospheric pollutants (NEC Directive 2016/2284/EU). Montenegro presents an analysis of cost-effective emission control strategies for 2020 and 2030, which shall serve as a basis for final agreement between the EU and Montenegro on its reduction obligations under the NEC Directive. Montenegro reports on an annual basis its emissions, in line with the Directive and the Convention on Long-range Transboundary Air Pollution and develops a National Air Pollution Control Programme. Furthermore, Montenegro enhances the preparation for the implementation of the acquis in this area, by regularly taking measures to reduce national air pollution, particularly in zones where EU limit values for air quality are exceeded, and by developing or updating air quality plans, as envisaged by the Directive on ambient air quality and cleaner air for Europe (Directive 2008/50/EC).”

Source: https://www.eu.me/en/poglavlje-27-zivotna-sredina-i-klimatske-promjene/

Sustainability

Sustainability of the Action might be hindered by limited financial resources for procurement of consumable material, additional equipment, or replacement parts. Stakeholders noted that internal procurements are taking too long, affecting the operability of the equipment. There were regular calibrations and servicing of measuring instruments performed by the Institute for Energy and Environmental EKONERG. The Centre for Toxicological Research has been entrusted with the collection of data on the measurement locations for fixed measurements in the national network established to monitor air quality according to the annual program of air quality monitoring. However, the sustainability of the EMEP station will depend on the additional effort of IHS to ensure the protection of equipment at this station, data validation and the
use of laboratory equipment for analysing air quality following the EMEP Programme and national legislation. Sustainability of revised national network for air quality monitoring was ensured by adoption of the Decree on the amendments of the Decree on establishment of a network of measuring points for air quality monitoring (Official Gazette of Montenegro no. 064/18 dated 4.10.2018).

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**Recommendations**

In order to improve the situation in this area:

- Final beneficiary institutions and the newly formed Ministry of Ecology, Spatial Planning and Urbanism should guarantee sustainable funding for maintenance of the revised national network for air quality monitoring.

- HIS should speed up accreditation of laboratory for air quality to performed requirements of EMEP Programme and national legislation, to ensure protection against lightning on EMEP station and to provide software for the validation of EMEP station data.

- EUD, CFCU, NIPAC Office should ensure that final beneficiaries must be engaged in all phases of the project from the planning, contracting and implementation, to ensure ownership.

- EC should ensure that further support to the procurement of equipment requires that all preconditions be met by beneficiary institutions before the start of the project implementation to provide timely response to needs and priorities.

- Ministry of Ecology, Spatial Planning and Urbanism should work on implementation of Directive on the reduction of national emissions of certain atmospheric pollutants 2016/2284/EU.