

REGIONAL REPORT ON OUTPUT 2.3: AIR AND WASTE MANAGEMENT DATA AND STATISTICS ARE IMPROVED FOR POLICY-RELEVANT USE

PUBLIC REPORT



Funded by
the European Union

EU4Environment
Water and Data in Eastern Partner Countries

EU4Environment in Eastern Partner Countries:
Water Resources and Environmental Data (ENI/2021/425-550)

ABOUT THIS REPORT

AUTHORS

Johannes Mayer, Environment Agency Austria

of the related Technical Reports:

Maria Krasteva, Environment Agency Austria (waste)

Christian Nagl, Environment Agency Austria (air quality)

Sabine Schindlbacher, Environment Agency Austria (air pollutant inventories)

DISCLAIMER

This document was produced with the financial support of the European Union and written by the partners of the EU4Environment – Water and Data consortium. The views expressed herein can in no way be taken to reflect the official opinion of the European Union or the Governments of the Eastern Partnership Countries. This document and any map included herein are without prejudice to the status of, or sovereignty over, any territory, to the delimitation of international frontiers and boundaries, and to the name of any territory, city or area.

IMPRINT

Owner and Editor: EU4Environment-Water and Data Consortium

Umweltbundesamt GmbH

Spittelauer Lände 5

1090 Vienna, Austria

Office International de l'Eau (IOW)

21/23 rue de Madrid

75008 Paris, FRANCE

Reproduction is authorised provided the source is acknowledged.

June 2025

ABOUT EU4ENVIRONMENT – WATER RESOURCES AND ENVIRONMENTAL DATA

This Programme aims at improving people's wellbeing in EU's Eastern Partner Countries and enabling their green transformation in line with the European Green Deal and the Sustainable Development Goals (SDGs). The programme's activities are clustered around two specific objectives: 1) support a more sustainable use of water resources and 2) improve the use of sound environmental data and their availability for policy-makers and citizens. It ensures continuity of the Shared Environmental Information System Phase II and the EU Water Initiative Plus for Eastern Partnership programmes.

The Programme is implemented by five Partner organisations: Environment Agency Austria (UBA), Austrian Development Agency (ADA), International Office for Water (OiEau) (France), Organisation for Economic Co-operation and Development (OECD), United Nations Economic Commission for Europe (UNECE). The action is co-funded by the European Union, the Austrian Development Cooperation and the French Artois-Picardie Water Agency based on a budget of EUR 12,75 million (EUR 12 million EU contribution). The implementation period is 2021-2024.

<https://eu4waterdata.eu>

CONTENTS

LIST OF ABBREVIATIONS	5
1. INTRODUCTION	6
ARMENIA	6
AZERBAIJAN	6
GEORGIA	6
MOLDOVA	6
UKRAINE	7
2. ACTIVITY 2.3.1: ADAPTING WASTE DATA COLLECTION TO THE NEEDS OF WASTE MANAGEMENT POLICIES	8
2.1. REGIONAL	8
2.1. ARMENIA	8
2.2. AZERBAIJAN	8
2.3. GEORGIA	9
2.4. MOLDOVA	9
2.5. UKRAINE	9
3. ACTIVITY 2.3.2: FURTHER IMPROVING AIR QUALITY MONITORING AND RELATED DATA SERVICES	10
3.1. REGIONAL	10
3.1. ARMENIA	10
3.2. AZERBAIJAN	10
3.3. GEORGIA	10
3.4. MOLDOVA	11
3.5. UKRAINE	11
4. ACTIVITY 2.3.3: FURTHER IMPROVING NATIONAL AIR POLLUTANT EMISSION INVENTORIES	11
4.1. REGIONAL	11
4.1. ARMENIA	11
4.2. AZERBAIJAN	12
4.3. GEORGIA	12
4.4. MOLDOVA	12
4.5. UKRAINE	12
5. ANNEXES	13
ACTIVITY 2.3.1: ADAPTING WASTE DATA COLLECTION TO THE NEEDS OF WASTE MANAGEMENT POLICIES	13
ACTIVITY 2.3.2: FURTHER IMPROVING AIR QUALITY MONITORING AND RELATED DATA SERVICES	13
ACTIVITY 2.3.3: FURTHER IMPROVING NATIONAL AIR POLLUTANT EMISSION INVENTORIES	13

List of abbreviations

APENA.....	EU-funded Technical Assistance project for Ukraine
AR	Armenia
AZ.....	Azerbaijan
CEIP	Centre on Emission Inventories and Projections (CLRTAP)
CEPA	Comprehensive and Enhanced Partnership Agreement
CLRTAP	Convention on Long-Range Transboundary Air Pollution
EaP	Eastern Partnership
EEA.....	European Environment Agency
EU	European Union
EPR.....	Extended Producer Responsibility
EU	European Union
EU4GRE.....	EU for Green Recovery East Programme (from 2025)
GE	Georgia
JFTESI	Joint Task Force on Environmental Statistics and Indicators
MD	Moldova
MEPNR.....	Ministry of Environmental Protection and Natural Resources (Ukraine)
SEIS	Shared Environmental Information System
SOER2025	European State-of-the-Environment Report 2025
UA	Ukraine
UNECE.....	United Nations Economic Commission for Europe
UNFCCC.....	United Nations Framework Convention on Climate Change
UNIDO.....	United Nations Industrial Development Organisation

1. Introduction

The EU4Environment Water and Data programme aimed to improve air and waste management data and statistics for policy relevant use in line with the European engagements and international obligations. Three Activities have been outlined and their goals and implementation re-checked in policy-level dialogues with the beneficiaries in all EaP countries to identify interests and key development issues.

- Activity 2.3.1: Adapting **waste data** collection to the needs of waste management policies
- Activity 2.3.2: Further improving **air quality monitoring** and related data services
- Activity 2.3.3: Further improving national **air quality pollutant emission inventories**.

During the Inception Phase of the Programme the following status as regards air and waste management data and statistics was assessed.

Armenia

Through its Comprehensive and Enhanced Partnership Agreement (CEPA) with EU, Armenia has engaged itself towards European regulations and good implementation practices. Waste data reporting procedures are established to Environmental Authorities and the State Statistical Committee. A concept for modernising air quality monitoring according European requirements had been developed, and its implementation will need investments in automated air quality monitoring stations. The national air pollutant emission inventory had been delivered in 2022 to the Convention on Long-Range Transboundary Air Pollution (CLRTAP).

Azerbaijan

Azerbaijan was in a process of modernising waste management practices in Baku and throughout the country. Automated air quality monitoring stations have been installed mainly in the capital area, and national air pollutant emission inventories have been delivered to the Convention on Long-Range Transboundary Air Pollution (CLRTAP).

Georgia

Through the EU Association Agreement and recent membership application with confirmed “European perspective” Georgia had engaged itself towards European regulations and good implementation practices. Georgia has been the first country in the region to implement *Extended Producer Responsibility regulations* for specific waste streams – which creates new challenges for reporting and assessment of waste management data. Over the past years an operational air quality monitoring network had been developed in line with the requirements of the EU air quality directives, and national air pollutant emission inventories had been regularly delivered to CLRTAP.

Moldova

Through EU association agreement and recent membership application Moldova has engaged itself towards European regulations and good implementation practices. For supporting approximated

legislation, a waste management information system had been established. Automated air quality monitoring stations are to be installed in Chisinau, and national air pollutant emission inventories have been delivered to CLRTAP.

Ukraine

Through the EU association agreement and recent membership application with granted candidate status, Ukraine had engaged itself fully towards European regulations and good implementation practices. New air quality and waste management legislation had been developed, with the new waste management near to adoption by the Parliament. Development and implementation of modernised air quality monitoring still requires enhanced dialogue between the competent authorities, while national air pollutant emission inventories has been delivered to CLRTAP with support through the EU-funded APENA project which substantially supported Ukraine on air and waste management until August 2023. All action activities will be designed and timed to support implementation of new air quality and waste management legislation, complementing the APENA work as required and building on achieved results of the EU-funded project.

Taking into account specific requirements in the countries, the following activities were agreed in 2022:

Waste data:

- to check the operational status and data use in waste management information system and/ or from waste management reporting and waste statistics;
- to do capacity-building on waste reporting and statistics developments and
- to support the update of the methodology and reporting procedures towards national policy and international co-operation requirements.

Air quality monitoring:

- to support the closing of established gaps;
- to support the awareness-raising on fine particulate matter in municipalities;
- AM: to accompany the implementation of an “air quality monitoring concept” for Armenia (with updates as required);
- AZ: to support the further improvement of air quality monitoring and related data services;
- AZ, GE, MD, UA: to check the current development status and plans for air quality monitoring network and laboratories;
- AZ, GE, MD: to support the provision of up-to-date air quality data from automated monitoring to European Air Quality index at EEA.

Air pollutant emission inventories:

- it had been agreed to accompany the 2023/2024 inventory deliveries;
- to do capacity-building on established gaps and
- to support the participation in the 2023 Level-3 audit of air pollutant inventories.

2. Activity 2.3.1: Adapting waste data collection to the needs of waste management policies

The activities were implemented and further developed at regional and country level in close co-operation and following specific requests of the Beneficiaries institutions, with an increasing focus on policy relevant and legal EU approximation requirements.

Specific country activities were undertaken with Ukraine (most intensively), Georgia and Azerbaijan, while Armenia and Moldova actively engaged in the regional activities.

2.1. Regional

An online introductory **Regional Workshop** on European Waste Management Reporting was held in February 2023, including both presentations on EU requirements and country presentations from Armenia, Georgia and Ukraine.

A **study visit** invitation for Ukrainian Parliament and Ministry experts to Vienna in December 2023 on Extended Producer Responsibility in packaging waste management, initiated by a presentation of the project team to the Verhovna Rada Environment Committee on Best European Practices in packaging waste management, was extended to Moldova and Georgia due to its regional relevance. In 2023 and 2024, substantial support was provided to Ukraine with focus on introducing the Extended Producer Responsibility in waste management legislation and its implementation.

Experts from all 5 countries participated in the **regional training** on waste and circular economy indicators organised by UNECE and Environment Agency Austria and hosted by UNIDO in Vienna in June 2024 <https://unece.org/environmental-policy/events/regional-training-production-and-use-waste-and-circular-economy>

The **first time calculation of Circular Material Use Rate for Ukraine** according to the Eurostat methodology (one of the environmental transition indicators for the country space of the EEA European State-of-the-Environment Report SOER 2025) was shared with all countries in the October 2024 Session of the Joint Task Force on Environmental Statistics and Indicators with follow-up dialogue.

Four of the five countries have answered the **2024 UNECE SEIS review request** on waste and circular economy indicators (report ECE/CEP/AC.10/2025/5).

2.1. Armenia

The Statistical Institute of Armenia regularly publishes waste generation data and presented its activities at the regional introductory workshop in February 2023. The Institute actively participated in the regional exchange on “circular material use rate” calculation and advocates its “data stewardship role” for environmental data as potential service to the Ministry in waste data / reporting issues.

2.2. Azerbaijan

Following exchanges with the Ministry of Ecology and Natural Resources on capacity-building priorities in waste management, a workshop on waste recycling was prepared for October 2023. The event was first postponed at short notice, and never held in 2024, since the Ministry of Ecology focused on the preparation and organisation of UNFCCC COP29 held in Baku in November 2024.

During and after the October 2024 JFTESI meeting, the Statistical Institute of Azerbaijan participated in data discussion on “Circular Material Use Rate” calculation.

2.3. Georgia

Being the first country in the Caucasus region to implement Extended Producer Responsibility regulations, the waste management department of the Ministry (MEPA) remained throughout the project in active operational dialogue with our expert team. Georgia also presented its EPR registry experience at the introductory regional workshop in February 2023.

In January and March 2024 two one-week trainings were provided in Tbilisi for the waste management staff of the Environment Ministry, covering a wide range of implementation issues linked to Extended Producer Responsibility in waste management for different waste streams.

2.4. Moldova

Moldovan experts participated in the Packaging Waste study visit to Vienna in December 2023 and regularly exchanged with the UBA expert team on technical issues.

During the programme period, Moldova managed the first fully electronic reporting cycle from enterprises on waste management data to the Moldovan Environment Agency (EAM) but did not have capacities to engage with waste management indicators or SEIS review reporting.

Datasets from the Moldovan waste database could be used for developing data access via API (Application Programming Interface) and related practical exercises in Output 2.4.

2.5. Ukraine

The most intensive country involvement was with Ukraine in support of the EU approximation and policy reform process in the waste management area: this is documented in a separate technical report. Based on support requests from the Ministry's (MEPNR) Waste Management Department and Reform Support Team, the work included technical and policy-level discussions, development of concepts and legal texts on all aspects of introducing Extended Producer Responsibility in waste management and related issues (deposit system etc), with an operational focus on the draft Packaging Waste Law under development in the Parliament. Substantial capacity-building and operational support could be provided to MEPNR and Rada experts on waste management legislation introducing Extended Producer Responsibility.

The more specifically data-related products included, among others, the development of a Waste Reporting Regulation (MEPNR approved the final version which is not yet published and might undergo further revision in the light of the EU accession process), the development of a methodology on calculating the market share of packaging producers (required to set up implementation of EPR) which MEPNR uses in the ongoing parliamentary discussions on the Packaging Waste Law, and presentations of the Austrian electronic waste data management system in February 2023.

The first time calculation of Circular Material Use Rate for EaP countries according to the Eurostat methodology (one of the environmental transition indicators for the country space of European State-of-the-Environment Report SOER 2025) could be based on data from Ukraine and shared with all countries in the region.

3. Activity 2.3.2: Further improving air quality monitoring and related data services

3.1. Regional

An assessment of the current status of Air Quality monitoring networks was undertaken for all five countries and can serve as a basis for further co-operation, also in the follow-up EU4GRE programme.

For awareness raising on health-endangering particulate matter pollution, a **regional online workshop** was held 7 Sep 2023 (Clean Air Day) for municipalities in all partner countries **in co-operation with the Covenant of Mayors East** with the attendance of around 120 municipalities (including around 70 from Ukraine). Five national follow-up online workshops were held in late September 2023, with a follow-up questionnaire resulting in responses from all 5 countries.

Armenia, Georgia and Moldova were operationally supported in air quality monitoring and/or data management development during the programme, while such support was provided to Ukraine through the Finnish Meteorological Institute (in the sense of the Team Europe Initiative).

The project team provided several presentations at the regional training in May 2025 in Geneva on air quality and air emissions indicators <https://unece.org/statistics/events/regional-training-air-quality-and-emissions-air-statistics-and-indicators>

3.1. Armenia

The project air quality team remained in continuous dialogue with the Armenian counterparts for assisting the first implementation steps of the air quality monitoring concept, including on the optimal siting of the first automated monitoring stations in Yerevan. The project team also supported the successful high-level government discussion on allocating national financing to automated stations required for modernising air quality monitoring towards European standards.

Armenian municipalities attended the regional and national workshops on health-endangering particulate matter pollution, with answers from several municipalities on the follow-up questionnaire.

Armenia also followed at expert level the update of the European Air Quality index.

3.2. Azerbaijan

Initial discussions with the Ministry of Ecology and the air quality monitoring team of the Caspian Sea Complex (managing the automated air quality stations for the Baku area) showed interest on future testings of updated of the European Air Quality index for national use.

Azeri municipalities attended the regional and national workshops on health-endangering particulate matter pollution, with one answer from Azerbaijan on the follow-up questionnaire.

3.3. Georgia

Georgian municipalities attended the regional and national workshops on health-endangering particulate matter pollution, with one answer from Georgia on the follow-up questionnaire.

In late 2024, operational support could be provided to re-establish technical readiness for reporting air quality data to EEA through updated Raven software and update of Georgian stations in the EEA European Air Quality Portal database.

Georgia also followed at expert level the update of the European Air Quality index, an adapted version of which is already used in the country.

3.4. Moldova

The Moldovan Environment Agency (EAM) was supported by the procurement and successful installation of an air quality data management software for the first automated traffic monitoring station in Chisinau.

24 Moldovan municipalities attended the regional and national workshops on health-endangering particulate matter pollution, with four answers from Moldova on the follow-up questionnaire.

3.5. Ukraine

70 Ukrainian municipalities attended the regional and national workshops on health-endangering particulate matter pollution, with only one answer on the follow-up questionnaire due to other priorities.

The project team participated in an introductory air quality management meeting for Ukrainian regions, and will follow up in the EU4GRE programme in close co-operation with the Finnish Meteorological Institute (FMI), which leads in “Team Europe spirit” on air quality-related support to Ukraine.

4. Activity 2.3.3: Further improving national air pollutant emission inventories

4.1. Regional

The annual air pollutant emission inventory submissions to the Centre on Emission Inventories and Projections ([CEIP](#)) under the CLRTAP Convention for 2022 to 2024 were evaluated for all partner countries and recommendations given (see technical reports in the Annex).

All partner countries were invited to participate with inventory experts in the centralized “third level” air pollutant emission inventory review in Vienna May 2023 (sector agriculture) and June 2024 (industrial processes and product use). This co-operation will continue with an invitation to participate in the May 2025 sectoral review as part of the EU4Green Recovery East Programme.

A training presentation on the Emission Inventory Reporting under the Convention on Long-range Transboundary Air Pollution was held in the regional “air indicator” training at UNECE/Geneva in May 2023.

4.1. Armenia

Air emission inventory and Informative Inventory Reports were submitted in 2022, 2023 and 2024.

Armenia participated for the first time in the Air Convention air emission inventory review in 2023 (agriculture), and again in 2024 (industrial processes and product use). This facilitated their networking with other international inventory experts.

4.2. Azerbaijan

An air pollutant emission inventory was submitted in 2024 (first time since 2019); the same applies to the accompanying Informative Inventory Report.

4.3. Georgia

Air emission inventory and Informative Inventory Reports were submitted in 2022, 2023 and 2024.

Georgia participated for the first time in the Air Convention air emission inventory review in 2023 (agriculture), and again in 2024 (industrial processes and product use), both times with a high level of expertise.

Additional expert exchange and support was provided for developing Emission Projections.

4.4. Moldova

Air emission inventory and Informative Inventory Reports were submitted in 2022 and 2024.

Moldova participated for the first time in the Air Convention air emission inventory review in 2024 (industrial processes and product use), facilitating their networking with other international inventory experts.

4.5. Ukraine

Air emission inventory and Informative Inventory Reports were submitted in 2022, 2023 and 2024, with support through the EU APENA project.

Due to the war situation, no participation of Ukraine was possible in Air Convention air emission inventory sectoral reviews in 2023 and 2024. The 2024 submission (with 2022 emission data) was the first one including an assessment of war-related emission changes.

5. Annexes

Activity 2.3.1: Adapting waste data collection to the needs of waste management policies

- 2.3.2-1: Waste Management and environmental reform in Ukraine (Technical Report)
- 2.3.2-2: Methodology for the assessment and calculation of packaging quantities placed on the Ukrainian market (Annex 606)
- 2.3.2-3: Summary of Key Points on Extended Producer Responsibility (EPR) for Management of Specific Waste Streams (Annex 802) and Agreement on Extended Producer Responsibility (EPR) for Packaging, Batteries, and Electrical and Electronic Equipment (Annex 803)
- 2.3.2-4: Mission report waste management/EPR training Tbilisi January 2024
- 2.3.2-5: Mission report waste management/EPR training Tbilisi March 2024

Activity 2.3.2: Further improving air quality monitoring and related data services

- 2.3.2-1: Assessment of Air Quality Monitoring Networks (Technical Report)

Activity 2.3.3: Further improving national air pollutant emission inventories

- 2.3.3-1: Status of Air Emission Reporting under the Air Convention in Armenia 2022-2024
- 2.3.3-2: Status of Air Emission Reporting under the Air Convention in Azerbaijan 2022-2024
- 2.3.3-3: Status of Air Emission Reporting under the Air Convention in Georgia 2022-2024
- 2.3.3-4: Status of Air Emission Reporting under the Air Convention in Moldova 2022-2024
- 2.3.3-5: Status of Air Emission Reporting under the Air Convention in Ukraine 2022-2024
- 2.3.3-6: Recommendations for Air Pollutant Emissions Projections in Georgia

www.eu4waterdata.eu

Implementing partners



Co-funded by

