

# STATUS OF AIR EMISSION REPORTING UNDER THE AIR CONVENTION IN MOLDOVA 2022 TO 2024



# **STATUS OF AIR EMISSION REPORTING UNDER THE AIR CONVENTION IN MOLDOVA 2022 TO 2024**

**REGIONAL REPORT ON OUTPUT 2.3, ACTIVITY 2.3.3 FURTHER  
IMPROVING NATIONAL AIR QUALITY POLLUTANT EMISSION  
INVENTORIES**



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Water and Data in Eastern Partner Countries

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## **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>

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## List of abbreviations

ADA.....	Austrian Development Agency
BQE .....	Biological Quality Elements
DoA.....	Description of Action
DG NEAR.....	Directorate-General for Neighbourhood and Enlargement Negotiations of the European Commission
EaP .....	Eastern Partners
EC.....	European Commission
EECCA .....	Eastern Europe, the Caucasus and Central Asia
EMBLAS.....	Environmental Monitoring in the Black Sea
EPIRB.....	Environmental Protection of International River Basins
ESCS .....	Ecological Status Classification Systems
EU .....	European Union
EUWI+.....	European Union Water Initiative Plus
GEF.....	Global Environmental Fund
ICPDR .....	International Commission for the Protection of the Danube River
INBO.....	International Network of Basin Organisations
IOW/OIEau .....	International Office for Water, France
IWRM .....	Integrated Water Resources Management
NESB .....	National Executive Steering Board
NFP .....	National Focal Point
NGOs.....	Non-Governmental Organisations
NPD .....	National Policy Dialogue
OECD.....	Organisation for Economic Cooperation and Development
RBD .....	River Basin District
RBMP .....	River Basin Management Plan
Reps .....	Representatives (the local project staff in each country)
ROM.....	Result Oriented Monitoring
ToR.....	Terms of References
UBA.....	Umweltbundesamt GmbH, Environment Agency Austria
UNDP .....	United Nations Development Programme
UNECE.....	United Nations Economic Commission for Europe
WFD .....	Water Framework Directive

**Country Specific Abbreviations Moldova**

AAM.....Agency “Apele Moldovei”

AGMR.....Agency for Geology and Mineral Resources

AMAC.....Association of Apacanals

ANRE.....National Agency for Economic Regulation of the Energy Sector  
(also regulates WSS)

EAM .....Environment Agency Moldova

MoAgri.....Ministry of Agriculture (of the Republic of Moldova)

MoENV.....Ministry of Environment (of the Republic of Moldova)

Moldova.....Republic of Moldova

SHS.....State Hydrometeorological Service

## Executive Summary

The objective of this report is to document the 2022, 2023 and 2024 status of air emission inventories submitted under the Air Convention (Convention on Long Range Transboundary Air Pollution) by Moldova and to document the steps taken by the EU4Env project to accompany Moldova in air emission inventory reporting in 2023 and 2024. Moldova has submitted an air emission inventory under the Air Convention in 2022 several months after the submission deadline. The submission was still in an old reporting format. In 2022 and 2024 Moldova reported emission data for the whole time series 1990 to 2020. This is good practice. Moldova has not submitted an air emission inventory under the Air Convention in 2023.

To further improve the air emission inventory the following points could be addressed:

- Report air emission data every year
- Report an Informative Inventory Report every year
- Report projected emissions regularly, according to the reporting requirements (every 4<sup>th</sup> year)
- Report gridded and LPS data regularly, according to the reporting requirements (every 4<sup>th</sup> year)
- Improve the transparency of the Informative Inventory Report by including more detailed description of the methodology used to calculate emissions

An expert from Moldova participated in the in-depth review of air emission inventories submitted under the Air Convention (CLRTAP stage 3 review) in 2024. The centralised review meeting in 2024 was also used to discuss issues related to the inventory of Moldova with the expert from Moldova.

## 1. Purpose

The purpose of this report is

1. to document the 2022 status of air emission inventories submitted under the Air Convention (CLRTAP, Convention on Long Range Transboundary Air Pollution) by Moldova. This status can be seen as the baseline.
2. to document the steps taken to accompany Moldova in air emission inventory reporting in 2023 and 2024, as well as to document the status of 2023 and 2024 reporting of air emission inventories. In a last step areas for further improvement are identified.

## 2. Air emissions inventories submitted by Armenia

### 2.1. Background on Reporting Requirements under the Air Convention

Article 8 of 1979 LRTAP Convention (Air Convention)<sup>1</sup> states that: "The Contracting Parties, within the framework of the Executive Body referred to in article 10 and bilaterally, shall, in their common interests, exchange available information on: data on emissions at periods of time to be agreed upon, of agreed air pollutants, starting with sulphur dioxide, coming from grid-units of agreed size; or on the fluxes of agreed air pollutants, starting with sulphur dioxide, across national borders, at distances and at periods of time to be agreed upon..."

EB Decision 2022/2 (UNECE, 2022 (a))<sup>2</sup> further specifies the pollutants (Annex I (b)):

*"The air pollutants referred to in article 8 (a) of the Convention shall be emissions of: sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), non-methane volatile organic compounds (NMVOCs), carbon monoxide (CO), particulate matter (referring in particular to PM<sub>2.5</sub> and PM<sub>10</sub> and, if a Party considers it appropriate, total suspended particulate matter (TSP) and black carbon (BC)), heavy metals (in particular, cadmium (Cd), lead (Pb), mercury (Hg) and, if a Party considers it appropriate, arsenic (As), chromium (Cr), copper (Cu), nickel (Ni), selenium (Se) and zinc (Zn)) and persistent organic pollutants (in particular, hexachlorobenzene (HCB), polychlorinated biphenyls (PCBs), dioxins and furans (PCDD/F) and polycyclic aromatic hydrocarbons (PAHs)), using as guidance the definitions given in the Guidelines;"*

All pollutants mentioned in EB Decision 2022/2 have to be reported, unless the information is not available or the EB Decision lists them as "if a Party considers it appropriate".

Also in the UNECE reporting Guidelines Parties to the Air Convention are formally required to report on the substances and for the years set forth in the Air Convention and the protocols and their amendments that they have ratified and that have entered into force for them (UNECE Reporting Guidelines, UNECE, 2022 (b))<sup>3</sup>.

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1 UNECE 1979: The 1979 Geneva Convention on Long-range Transboundary Air Pollution. United Nations Economic Commission for Europe; available at <http://www.unece.org/fileadmin//DAM/env/lrtap/full%20text/1979.CLRTAP.e.pdf>

2 UNECE 2022 (a); ECE/EB.AIR/150, Decision 2022/2 Reporting of emissions and projections data under the Convention and its protocols in force; available at [https://unece.org/sites/default/files/2023-03/Decision%202022\\_2%20%28E%29.pdf](https://unece.org/sites/default/files/2023-03/Decision%202022_2%20%28E%29.pdf)

3 UNECE 2022: Guidelines for Reporting Emissions and Projections Data under the Convention on Longrange Transboundary Air Pollution. United Nations Economic Commission for Europe 23 / 27

The core guidance documents for reporting air emission inventories under the Air Convention are the UNECE Reporting Guidelines (UNECE, 2022(b))<sup>4</sup> and the EMEP/EEA Inventory Guidebook<sup>5</sup>. Summary information on reporting can be found at <https://www.ceip.at/reporting-instructions>.

Moldova has accepted the following Protocols: 1984 EMEP Protocol, 1998 Heavy Metals Protocol and the 1998 POP Protocol.

Table 1 Ratification status of the LRTAP Convention and related protocols for the beneficiary countries of the EU4Environment and data project

Ratification status of the LRTAP Convention and related protocols													
	1979 LRTAP Convention	1984 EMEP Protocol	1985 Sulphur Protocol	1988 NO <sub>x</sub> Protocol	1991 VOC Protocol	1994 Sulphur Protocol	1998 Heavy Metals Protocol		1998 POP Protocol			1999 Gothenburg Protocol	
	Geneva Convention	Geneva Protocol	Helsinki Protocol	Sofia Protocol	Geneva Protocol	Oslo Protocol	Aarhus Protocol	2012 Amendment	Aarhus Protocol	2009 Amendment I	2009 Amendment II	2012 Amendment	
<b>Armenia</b>	1997 (AC)	2014 (AC)	N	N	N	N	N	N	N	N	N	N	N
<b>Azerbaijan</b>	2002 (AC)	N	N	N	N	N	N	N	N	N	N	N	N
<b>Georgia</b>	1999 (AC)	2013 (AC)	N	N	N	N	N	N	N	N	N	N	N
<b>Moldova</b>	1995 (AC)	2016 (AC)	N	N	N	N	2002	N	2002	N	N	N	N
<b>Ukraine</b>	1980	1985 (AT)	1986 (AT)	1989 (AT)	N	N	N	N	N	N	N	N	N

Note: (AC) = Accession; (AT) = Acceptance

(ECE/EB.AIR/GE.1/2022/20– ECE/EB.AIR/WG.1/2022/13). [https://unece.org/sites/default/files/2022-08/ECE\\_EB.AIR\\_GE.1\\_2022\\_20-2210473E.pdf](https://unece.org/sites/default/files/2022-08/ECE_EB.AIR_GE.1_2022_20-2210473E.pdf)

<sup>4</sup> Available at:

[https://www.ceip.at/fileadmin/inhalte/ceip/00\\_pdf\\_other/2022/emissions\\_reporting\\_guidelines\\_2023\\_final.pdf](https://www.ceip.at/fileadmin/inhalte/ceip/00_pdf_other/2022/emissions_reporting_guidelines_2023_final.pdf)

<sup>5</sup> <https://www.eea.europa.eu/publications/emep-eea-guidebook-2023>

## 2.2. Status of reporting air emission inventory data in 2022

Moldova has submitted an air emission inventory under the Air Convention in 2022 several months after the submission deadline. The submission was still in an old reporting format. In 2022 Moldova reported emission data for the whole time series 1990 to 2020. This is good practice.

### Statement from Moldova

The IIR was submitted and published on the CEIP web page on November 2, 2022.

The legal base was considerable improved in 2022.

- [Law No. 98/2022 on atmospheric air quality](#), is aligned to
  - Directive 2008/50/EC on ambient air quality and cleaner air for Europe and;
  - Directive 2004/107/EC on arsenic, cadmium, mercury, nickel, and polycyclic aromatic hydrocarbons in ambient air.
- [Law No. 227/2022 on industrial emissions](#), is aligned to
  - Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated prevention and control)
  - Directive of the European Parliament and of the Council of 25 November 2015 on the limitation of atmospheric emissions of certain pollutants from medium combustion plants.
- [Law on fluorinated greenhouse gases, adopted in the first reading of the Parliament, December 1, 2022, is aligned to](#)
  - Regulation (EU) no. 517/2014 of the European Parliament and of the Council of April 16, 2014 regarding fluorinated greenhouse gases and repealing Regulation (EC) no. 842/2006.

Para 33 of the UNECE Reporting Guidelines (UNECE, 2022(b)) states “...A complete time series, including the base or reference year and all other years for which emissions and projections are to be reported, should be calculated using the same methodologies throughout the time series to ensure that the inventory reflects real changes in emissions rather than changes in methodologies. Recalculations should be made if there are changes in methodologies or changes in the manner in which emission factors and activity data are obtained or used, or if estimates are provided for sources that have existed since the reference year but that were not accounted for in previous submissions. Parties should apply any recalculations to every relevant year in the full time series to ensure consistency across years.”

Though the requirement of reporting full time series is phrased using the softer word “should” and not “shall” almost all Parties report full time series. The reporting of full time series – as done by Moldova – greatly improves the usability of the data within the work of the Air Convention. In 2022 Moldova reported all emission inventory data for all pollutants that are listed in the reporting template. Moldova also provided activity data in the reporting template. Reporting of activity data helps with the interpretation of the emission data and fosters the review activities.

The air emission inventory data is accompanied by a report that describes the methodologies used to calculate the air emissions. This report is called Informative Inventory Report. Moldova has submitted an Informative Inventory Report in 2022, but several months after the reporting deadline. The Informative Inventory Report contains important information already, however the methods used to calculate emissions are not described transparently enough.

2022 was not a reporting year for gridded data, LPS data or projections. Moldova did not report projected emission data, gridded emission data or LPS in 2022 or before.

### 2.3. Status of reporting air emission inventory data in 2023- Moldova

Moldova has not submitted an air emission inventory under the Air Convention in 2023.

Moldova has not submitted an Informative Inventory Report in 2023.

Statement from Moldova

In 2023 the adopted the Law No. 368/2023 on meteorological and hydrological activity, aligned to the WMO principles, was developed.

### 2.4. Status of reporting air emission inventory data in 2024 – Moldova

Moldova has submitted an air emission inventory under the Air Convention in 2024 several months after the submission deadline. The submission was still in an old reporting format. In 2024 Moldova reported emission data for the whole time series 1990 to 2022, which is seen as good practice. In 2024 Moldova reported all emission inventory data for all pollutants that are listed in the reporting template. Moldova also provided activity data in the reporting template. Reporting of activity data helps with the interpretation of the emission data and fosters the review activities.

Moldova has submitted an Informative Inventory Report in 2024, but several months after the reporting deadline. The Informative Inventory Report contains important information already, however the methods used to calculate emissions are not described transparently enough.

Statement from Moldova

By the Government Decision from May 14 2024, it was approved the **Regulation of the reduction of certain atmospheric pollutants (SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>2.5</sub>, NMVOC, and NH<sub>3</sub>)**.

### 2.5. The following activities were carried out during the reporting period:

1. The status of reporting was assessed in 2022, 2023 and 2024.
2. Areas for improvement of the Air emission inventories were discussed with Moldavian experts but capacity building action on air emission inventories was not seen as priority
3. Support of air emission inventories in 2023 was not possible. No air emission inventory was prepared
4. Experts from Moldova were invited to the in-depth review of air emission inventories submitted under the Air Convention (CLRTAP stage 3 review) in 2023 and 2024. A Moldavian expert participated in the in-depth review of air emission inventories submitted under the Air Convention (CLRTAP stage 3 review) in 2024. More details of the review are documented in the workshop report and "Participation in CLRTAP in-depth review 2024".

Statement from Moldova on activities related to air emission reporting outside the EU4Water and Data Programme

5. Experts from Moldova were trained by IIASA in the estimation of the emissions ceilings of certain air pollutants.

## 2.6. The following results were achieved:

1. The status of reporting in 2022, 2023 and 2024 was documented (present report)
2. Areas for inventory improvement were identified. See section 2.7.
3. During the centralized review in Vienna (June 2024) the Moldavian expert contributed to the technical discussion of inventory compilation methods.

Statement from Moldova

4. The legal base on air quality was improved essentially.

## 2.7. General suggestions for improvement of the air emission inventory

1. Report air emission data every year, in due time
2. Report an Informative Inventory Report every year, in due time
3. Report projected emissions regularly, according to the reporting requirements (every 4<sup>th</sup> year)
4. Report gridded and LPS data regularly, according to the reporting requirements (every 4<sup>th</sup> year).

Statement from Moldova

The LPS report is submitted annually for 2 sources to the European Energy Community.

5. Improve the transparency of the Informative Inventory Report by including more detailed description of the methodology used to calculate emissions

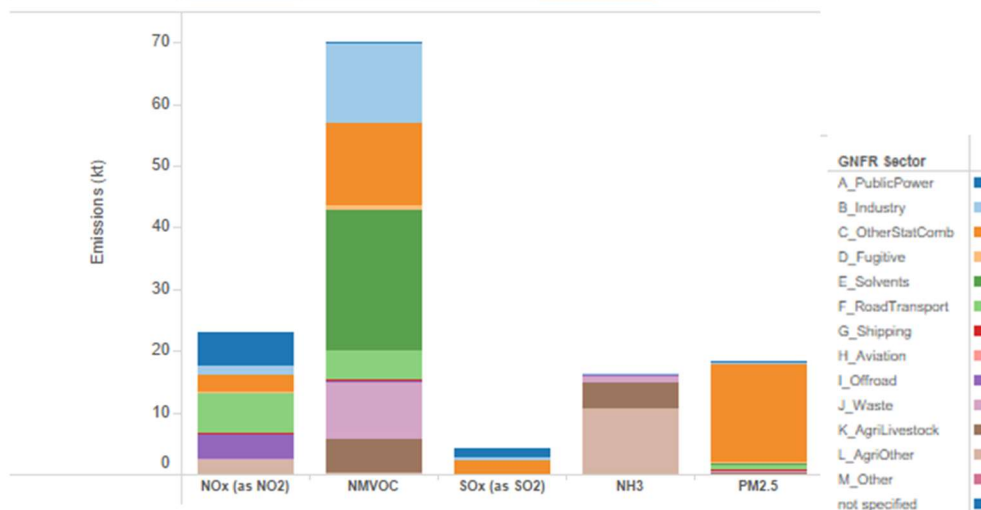
### 3. Annexes

Overview of reporting of Moldova 2022 to 2024.

Inventory submission (initial)		Years reported		IIR pages	
Date 2022	10.10.2022	2022	1990-2020 + AD	2022	86
Date 2023	No Submission	2023	-	2023	-
Date 2024	13.09.2024	2024	1990-2022 + AD	2024	70

#### 2024 Submission / Republic of Moldova / 2022 data

GNFR Sector	NOx (as NO <sub>2</sub> )	NMVO	SOx (as SO <sub>2</sub> )	NH <sub>3</sub>	PM <sub>2.5</sub>
A_PublicPower	5.37	0.15	1.37		0.06
B_Industry	1.62	13.06	0.48	0.00	0.48
C_OtherStatComb	2.74	13.40	2.31	0.16	15.96
D_Fugitive	0.00	0.74	0.00		0.00
E_Solvents	0.01	22.58	0.00	0.01	0.40
F_RoadTransport	6.55	4.84	0.01	0.19	0.68
G_Shipping	0.00	0.00	0.00		0.00
H_Aviation	0.12	0.01	0.01		0.00
I_Offroad	4.01	0.41	0.00	0.00	0.21
J_Waste	0.23	9.20	0.01	1.15	0.39
K_AgriLivestock	0.07	5.36		4.17	0.07
L_AgriOther	2.29	0.35	0.00	10.72	0.11



The Air emission inventory 2022 and 2024 of Moldova are available at:

<https://www.ceip.at/status-of-reporting-and-review-results>

The stage 1 and stage 2 reports compiled by CEIP provide feedback on the air emission inventories to the countries.

Stage 1: An initial check of submissions for timeliness and completeness;

Stage 2: A synthesis and assessment of all national submissions with respect to consistency and comparability of data with recommendations for data quality improvement;

The reports are available at:

<https://www.ceip.at/status-of-reporting-and-review-results>



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