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

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

Funded by the European Union

EU4Environment
Water and Data in Eastern Partner Countries

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

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

Funded by the European Union

EU4Environment
Water and Data in Eastern Partner Countries

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ABOUT THIS REPORT

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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 Georgia

MENRP..... Ministry of Environment and Natural Resources Protection

NEA..... National Environment Agency

NWP..... National Water Partnership

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 Georgia and to document the steps taken by the EU4Env project to accompany Georgia in air emission inventory reporting in 2023 and 2024. Georgia has submitted an air emission inventory under the Air Convention in 2022, 2023 and 2024 in time. Following good practices Georgia reported emission data for the whole time series.

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

- Report projected emissions regularly
- Improve the transparency of the Informative Inventory Report by including more detailed description of the methodology used to calculate emissions and justifications for recalculations
- Explain fluctuations in the time series in the Informative Inventory Report
- Include the missing chapter on gridded data in the Informative Inventory Report
- Use higher tier (more complex) methods for the calculation of key categories in the air emission inventory

An Georgian expert participated in the in-depth review of air emission inventories submitted under the Air Convention (CLRTAP stage 3 review) in 2023 and 2024. The centralised review meetings in Vienna in May 2023 and June 2024 were also used to discuss issues related to the Georgian inventory with the Georgian experts.

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 Georgia. This status can be seen as the baseline.
2. to document the steps taken to accompany Georgia in air emission inventory reporting in 2023 and 2024, as well as to document the status of 2023 rand 2024 reporting of air emission inventories. In a last step areas for further improvement are identified.

2. Air emissions inventories submitted by Georgia

2.1. Background on Reporting Requirements under the Air Convention

Article 8 of 1979 LRTAP Convention (Air Convention)[1] 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))[2] 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_x), nitrogen oxides (NO_x), ammonia (NH_3), non-methane volatile organic compounds (NMVOCs), carbon monoxide (CO), particulate matter (referring in particular to $PM_{2.5}$ and PM_{10} 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))[3].

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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*

[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))[4] and the EMEP/EEA Inventory Guidebook[5]. Summary information on reporting can be found at https://www.ceip.at/reporting-instructions.

Georgia has accepted the following Protocols: 1984 EMEP 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 Con-vention	1984 EMEP Protocol	1985 Sulphur Protocol	1988 NO_x 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 Amend-ment	Aarhus Protocol	2009 Amend-ment I	2009 Amend-ment II		2012 Amend-ment
Armenia	1997 (AC)	2014 (AC)	N	N	N	N	N	N	N	N	N	N	N
Azerbaijan	2002 (AC)	N	N	N	N	N	N	N	N	N	N	N	N
Georgia	1999 (AC)	2013 (AC)	N	N	N	N	N	N	N	N	N	N	N
Moldova	1995 (AC)	2016 (AC)	N	N	N	N	2002	N	2002	N	N	N	N
Ukraine	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

[4] *available at: https://www.ceip.at/fileadmin/inhalte/ceip/00_pdf_other/2022/emissions_reporting_guidelines_2023_final.pdf*

[5] *https://www.eea.europa.eu/publications/emep-eea-guidebook-2023*

2.2. Status of reporting air emission inventory data in 2022

Georgia has submitted an air emission inventory under the Air Convention in 2022 on time. Georgia uses the current NFR – reporting template6 which is considered good practise. In 2022 Georgia reported emission data for the whole time series 1990 to 2020. This is good practice.

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 Georgia – greatly improves the usability of the data within the work of the Air Convention.

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. Georgia has submitted an Informative Inventory Report in 2022, but several weeks after the reporting deadline.

In 2022 Georgia reported all emission inventory data for all pollutants that are listed in the reporting template. Georgia 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.

2022 was nor reporting year for gridded data, LPS data or projections. Georgia had reported projections and gridded data and LPS data in an earlier submission.

2.3. Status of reporting air emission inventory data in 2023

Georgia has submitted an air emission inventory under the Air Convention in 2023 in time. In 2023 Georgia reported emission data for the whole time series 1990 to 2021. This is good practice.

[6] *NFR – Nomenclature for Reporting. The NFR template is available under https://www.ceip.at/reporting-instructions/annexes-to-the-2023-reporting-guidelines*

Georgia has submitted an Informative Inventory Report in 2023, two weeks after the reporting deadline, which is an improvement compared to 2022. The content of the Informative Inventory Report is similar in quality compared to previous version. Though the Informative Inventory Report contains a lot of information already, the methods used to calculate emissions are not described transparently enough.

As in the previous year, in 2023 Georgia reported all emission inventory data for all pollutants that are listed in the reporting template and activity data.

2023 was not a reporting year for gridded data and LPS data. Georgia had reported gridded data and LPS data in an earlier submission. 2023 was a reporting year for projections. Georgia did not report projected emission data in 2023.

2.4. Status of reporting air emission inventory data in 2024

Georgia has submitted an air emission inventory under the Air Convention in 2024 in time. In 2024 following good practices Georgia reported emission data for the whole time series 1990 to 2022.

Georgia has submitted an Informative Inventory Report in 2024, almost two months after the reporting deadline. The content of the Informative Inventory Report is similar in quality compared to previous version. Though the Informative Inventory Report contains a lot of information already, the methods used to calculate emissions are not described transparently enough.

As in the previous year, in 2024 Georgia reported all emission inventory data for all pollutants that are listed in the reporting template and activity data.

2024 was not a reporting year for gridded data and LPS data. Georgia had reported gridded data and LPS data in an earlier submission.

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

1. The status of reporting was assessed in 2022. Several ad hoc meetings with Georgian experts were held to discuss areas for improvement, gather the Georgian views on the matter and to draft ideas for possible support.
2. Projected emission data was identified as priority areas for inventory support
3. Ad hoc exchange was offered for the reporting of air emission inventories in 2023 and 2024.
4. A Georgian expert participated in the in-depth review of air emission inventories submitted under the Air Convention (CLRTAP stage 3 review) in 2023 and 2024. The centralised review meetings in Vienna in May 2023 and June 2024 were also used to discuss issues related to the Georgian inventory with the Georgian expert. Technical corrections are improved emission calculations carried out by the expert review team during the centralised review. Technical corrections can be used as a starting point for the preparation of the next inventory submission (inventories are submitted annually). A technical correction was also calculated for Georgia for NO_x emissions from the manure management sector. The dialogue that was possible during the centralised review due to the presence of the Georgian expert greatly facilitated the calculation of this technical correction. More details of the review are documented in the workshop report “Participation in CLRTAP in-depth review 2023” and “Participation in CLRTAP in-depth review 2024”.

5. Austrian experts provided capacity building support to Georgia for the preparation of projected emission data. A summary report “Recommendations for Projections in Georgia” outlining possibilities for an efficient calculation of projected emission data was sent to the Georgian inventory expert.

2.6. The following results were achieved:

1. The status of reporting in 2022 was documented (present report)
2. Areas for inventory improvement were identified (see section 2.7)
3. The status of reporting in 2023 and 2024 was documented (present report)
4. The Georgian Informative Inventory Report was submitted much earlier in 2023 compared to 2022.
5. The Georgian Inventory Team is informed about an improved calculation of emissions related to manure management.
6. Possibilities for an efficient calculation of projected emission data are outlined in the report “Recommendations for Projections in Georgia”

2.7. General suggestions for improvement of the air emission inventory

1. Report projected emissions regularly
2. Improve the transparency of the Informative Inventory Report by including more detailed description of the methodologies used to calculate emissions and justifications for recalculations
3. Explain fluctuations in the time series in the Informative Inventory Report
4. Include the missing chapter on gridded data in the Informative Inventory Report
5. Use higher tier (more complex) methods for the calculation of key categories in the air emission inventory

3. Annexes

Overview of air emission reporting of Georgia in 2022, 2023 and 2024.

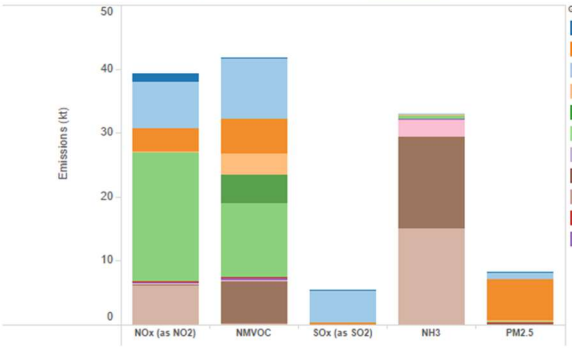
Inventory submission (initial)	
Date 2022	10.02.2022
Date 2023	14.02.2023
Date 2024	15.02.2024

Years reported	
2022	1990-2020 + AD
2023	1990-2021 + AD
2024	1990-2022 + AD

IIR pages	
2022	58
2023	60
2024	62

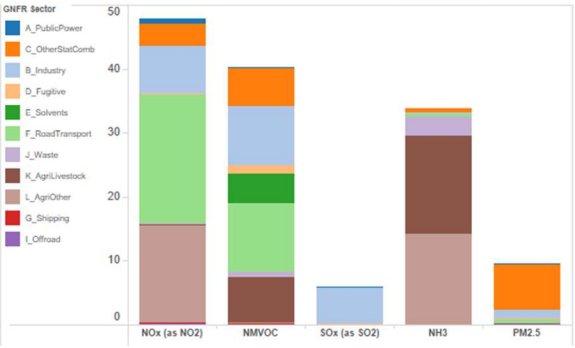
2024 Submission / Georgia / 2022 data

GNFR Sector	NOx (as NO2)	NMVOC	SOx (as SO2)	NH3	PM2.5
A_PublicPower	1,28	0,04	0,01		0,01
B_Industry	7,42	9,39	5,24	0,03	1,20
C_OtherStatComb	3,60	5,52	0,19	0,07	6,47
D_Fugitive	0,00	3,28	0,01	0,00	0,00
E_Solvents		4,43			0,02
F_RoadTransport	20,26	11,85	0,08	0,69	0,29
G_Shipping	0,02	0,00	0,00		0,00
I_Offroad	0,32	0,40	0,00	0,00	0,02
J_Waste	0,01	0,19	0,00	2,81	0,01
K_AgriLivestock	0,36	6,62		14,43	0,30
L_AgriOther	6,04	0,19		14,98	0,01



2023 Submission / Georgia / 2021 data

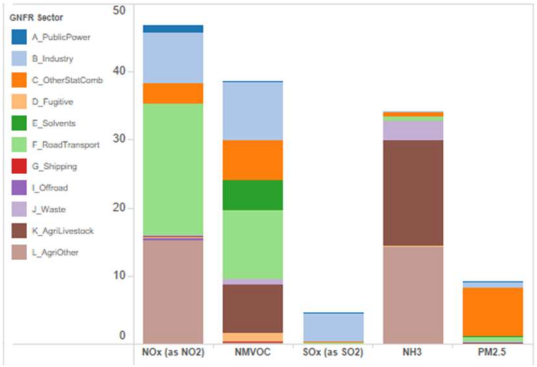
GNFR Sector	NOx (as NO2)	NMVOC	SOx (as SO2)	NH3	PM2.5
A_PublicPower	0,84	0,03	0,00		0,00
B_Industry	7,31	9,18	5,69	0,03	1,27
C_OtherStatComb	3,45	6,18	0,16	0,69	7,31
D_Fugitive	0,01	1,39	0,03	0,00	0,00
E_Solvents		4,48			0,02
F_RoadTransport	20,36	10,80	0,06	0,67	0,67
G_Shipping	0,02	0,00	0,00		0,00
I_Offroad	0,35	0,19	0,00	0,00	0,02
J_Waste	0,01	0,84	0,01	2,89	0,00
K_AgriLivestock	0,38	7,04		15,29	0,32
L_AgriOther	15,08	0,18		14,25	0,01



Emission (kt)
0,00 19,22

2022 Submission / Georgia / 2020 data

GNFR Sector	NOx (as NO2)	NMVOC	SOx (as SO2)	NH3	PM2.5
A_PublicPower	1,05	0,03	0,01		0,00
B_Industry	7,52	8,62	4,26	0,04	1,02
C_OtherStationaryComb	3,04	5,93	0,16	0,66	7,08
D_Fugitive	0,01	1,18	0,03	0,00	0,00
E_Solvents		4,46			0,02
F_RoadTransport	19,22	10,06	0,06	0,62	0,74
G_Shipping	0,02	0,00	0,00		0,00
I_Offroad	0,34	0,17	0,00	0,00	0,02
J_Waste	0,01	0,84	0,00	2,97	0,00
K_AgriLivestock	0,39	7,16		15,50	0,32
L_AgriOther	15,24	0,18		14,35	0,01



The Georgian Air emission inventories 2022, 2023 and 2024 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

The stage 3 report 2023 and 2024 provide specific recommendations for the improvement of reporting air emissions from the sector agriculture and industrial processes and product use - Solvents

The reports are available at:

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

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