



REPUBLIC OF ESTONIA  
ENVIRONMENT AGENCY



# Estonian Informative Inventory Report 1990-2022

## ANNEXES

Submitted under the Convention on Long-Range Transboundary Air  
Pollution

Tallinn 2024

## Data sheet

Title: Estonian Informative Inventory  
Report 1990-2022

Date: March 14<sup>th</sup> 2024

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Cover photo: Hüppassaare study trail.

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## ANNEX I – Inclusion/Exclusion of the Condensable Component from PM<sub>10</sub> and PM<sub>2.5</sub> Emission Factors

NFR	Source/sector name	PM emissions: the condensable component is		EF reference and comments
		included	excluded	
1A1a	Public electricity and heat production		X	National emission factors of TSP not included condensable component
1A1c	Manufacture of solid fuels and other energy industries		X	See comment for NFR 1A1a
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel		X	See comment for NFR 1A1a
1A2b	Stationary combustion in manufacturing industries and construction: Non-ferrous metals		X	See comment for NFR 1A1a
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals		X	See comment for NFR 1A1a
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print		X	See comment for NFR 1A1a
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco		X	See comment for NFR 1A1a
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals		X	See comment for NFR 1A1a
1A2gvii	Mobile Combustion in manufacturing industries and construction: (specified in the IIR)	X		EMEP/EEA Guidebook 2023: PM factors represent total PM emissions (filterable and condensable fractions)
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (specified in the IIR)		X	See comment for NFR 1A1a
1A3ai(i)	International aviation LTO (civil)	–	–	EMEP/EEA Guidebook 2019
1A3aii(i)	Domestic aviation LTO (civil)	–	–	EMEP/EEA Guidebook 2019
1A3bi	Road transport: Passenger cars	X		EMEP/EEA Guidebook 2023: Road transport PM mass emission factors in this chapter are considered to include both filterable and condensable material
1A3bii	Road transport: Light duty vehicles	X		EMEP/EEA Guidebook 2023: Road transport PM mass emission factors in this chapter are considered to include both filterable and condensable material
1A3biii	Road transport: Heavy duty vehicles and buses	X		EMEP/EEA Guidebook 2023: Road transport PM mass emission factors in this chapter are considered to include both filterable and condensable material
1A3biv	Road transport: Mopeds & motorcycles	X		EMEP/EEA Guidebook 2023: Road transport PM mass emission factors in this chapter are considered to include both filterable and condensable material
1A3bvi	Road transport: Automobile tyre and brake wear	–	–	EMEP/EEA Guidebook 2023
1A3bvii	Road transport: Automobile road abrasion	–	–	EMEP/EEA Guidebook 2023
1A3c	Railways	–	–	EMEP/EEA Guidebook 2023
1A3dii	National navigation (shipping)	–	–	EMEP/EEA Guidebook 2023
1A4ai	Commercial/institutional: Stationary			See comment for NFR 1A1a
1A4aii	Commercial/institutional: Mobile	X		EMEP/EEA Guidebook 2023: PM factors represent total PM emissions (filterable and condensable fractions)
1A4bi	Residential: Stationary	X	X	EMEP/EEA Guidebook 2023 for the solid, liquid and gaseous fuels. Emissions from wood burning are calculated using national factors (included condensable ) derived from measurements: <a href="https://klab.ee/wp-content/uploads/2024/03/Arendus2023_aruanne_final.pdf">https://klab.ee/wp-content/uploads/2024/03/Arendus2023_aruanne_final.pdf</a>
1A4bii	Residential: Household and gardening (mobile)	X		EMEP/EEA Guidebook 2023: PM factors represent total PM emissions (filterable and condensable fractions)

NFR	Source/sector name	PM emissions: the condensable component is		EF reference and comments
		included	excluded	
1A4ci	Agriculture/Forestry/Fishing: Stationary			See comment for NFR 1A1a
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	X		EMEP/EEA Guidebook 2023: PM factors represent total PM emissions (filterable and condensable fractions)
1A4ciii	Agriculture/Forestry/Fishing: National fishing	–	–	EMEP/EEA Guidebook 2023
1B1b	Fugitive emission from solid fuels: Solid fuel transformation			Facility specific EF. It is not known if the condensable part is included or not.
1B1c	Other fugitive emissions from solid fuels			Facility specific EF. It is not known if the condensable part is included or not.
1B2aiv	Fugitive emissions oil: Refining / storage			Facility specific EF. It is not known if the condensable part is included or not.
1B2c	Venting and flaring (oil, gas, combined oil and gas)			Facility specific EF. It is not known if the condensable part is included or not.
2A1	Cement production			Facility specific EF. It is not known if the condensable part is included or not.
2A2	Lime production			Facility specific EF. It is not known if the condensable part is included or not.
2A5a	Quarrying and mining of minerals other than coal			Facility specific EF. It is not known if the condensable part is included or not.
2A5b	Construction and demolition		X	EMEP/EEA Guidebook 2023
2A6	Other mineral products (specified in the IIR)			Facility specific EF. It is not known if the condensable part is included or not.
2B10a	Chemical industry: Other (specified in the IIR)			Facility specific EF. It is not known if the condensable part is included or not.
2B10b	Storage, handling and transport of chemical products (specified in the IIR)			Facility specific EF. It is not known if the condensable part is included or not.
2C1	Iron and steel production			Facility specific EF. It is not known if the condensable part is included or not.
2C3	Aluminium production			Facility specific EF. It is not known if the condensable part is included or not.
2C5	Lead production			Facility specific EF. It is not known if the condensable part is included or not.
2C6	Zinc production			Facility specific EF. It is not known if the condensable part is included or not.
2C7a	Copper production			Facility specific EF. It is not known if the condensable part is included or not.
2C7c	Other metal production (specified in the IIR)			Facility specific EF. It is not known if the condensable part is included or not.
2D3b	Road paving with asphalt	–	–	EMEP/EEA Guidebook 2023
2D3d	Coating applications	–	–	Facility specific EF. It is not known if the condensable part is included or not.
2D3e	Degreasing	–	–	Facility specific EF. It is not known if the condensable part is included or not.
2D3g	Chemical products	–	–	Facility specific EF. It is not known if the condensable part is included or not.
2D3h	Printing	–	–	Facility specific EF. It is not known if the condensable part is included or not.
2D3i	Other solvent use (specified in the IIR)	–	–	Facility specific EF. It is not known if the condensable part is included or not.
2G	Other product use (specified in the IIR)	–	–	EMEP/EEA Guidebook 2023
2H1	Pulp and paper industry			Facility specific EF. It is not known if the condensable part is included or not.
2H2	Food and beverages industry			Facility specific EF. It is not known if the condensable part is included or not.
2I	Wood processing			Facility specific EF. It is not known if the condensable part is included or not.
2L	Other production, consumption, storage, transportation or handling of bulk products (specified in the IIR)			Facility specific EF. It is not known if the condensable part is included or not.
3B1a	Manure management - Dairy cattle			EMEP/EEA Guidebook 2023
3B1b	Manure management - Non-dairy cattle			EMEP/EEA Guidebook 2023
3B2	Manure management – Sheep			EMEP/EEA Guidebook 2023
3B3	Manure management – Swine			EMEP/EEA Guidebook 2023
3B4d	Manure management - Goats			EMEP/EEA Guidebook 2023
3B4e	Manure management - Horses			EMEP/EEA Guidebook 2023
3B4gi	Manure management - Laying hens			EMEP/EEA Guidebook 2023
3B4gii	Manure management - Broilers			EMEP/EEA Guidebook 2023
3B4giv	Manure management - Other poultry			EMEP/EEA Guidebook 2023

NFR	Source/sector name	PM emissions: the condensable component is		EF reference and comments
		included	excluded	
3B4h	Manure management - Other animals (specified in the IIR)			EMEP/EEA Guidebook 2023
3Dc	Farm-level agricultural operations including storage, handling and transport of agricultural products			EMEP/EEA Guidebook 2023
5A	Biological treatment of waste - Solid waste disposal on land	–	–	The combination of facility specific and the EMEP/EEA Guidebook 2023 EFs. It is not known if the condensable part is included or not.
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities	–	–	Facility specific EF. It is not known if the condensable part is included or not.
5C1bi	Industrial waste incineration	–	–	Facility specific EF. It is not known if the condensable part is included or not.
5C1bv	Cremation	–	–	EMEP/EEA Guidebook 2023
5C2	Open burning of waste	–	–	EMEP/EEA Guidebook 2023
5E	Other waste (please specify in IIR)	–	–	EMEP/EEA Guidebook 2023
6A	Other (included in national total for entire territory) (specified in the IIR)			



## ANNEX II – Recommendations from the NECD Review, Considering Revised Estimates (RE), Technical Corrections (TC) and their Status of Implementation in Estonia

Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-2A5b-2023-0001	Yes	2A5b Construction and demolition, PM <sub>2.5</sub> , PM <sub>10</sub> , 1990-2021	NA	RE	No
<b>Recommendation</b>  <p>For category 2A5a Construction and demolition for PM<sub>2.5</sub> and PM<sub>10</sub> and all years, the TERT identified a potential under-estimate exceeding the threshold of significance due to absence of emission estimates for some construction activities. In response to a question raised during the review, Estonia explained that limited activity data were available from the Estonian Statistics database. Estonia provided revised estimates for years 2005, 2019, 2020 and 2021 using road construction activity data from the Transport Administration and rail construction activity data from Estonian Railways Ltd. The road and rail construction activity data used could not be checked by the TERT and calculations of construction area did not link directly to activity data and were not transparent but the TERT agreed with the revised estimate provided by Estonia.</p> <p><b>The TERT recommends that Estonia include the revised estimate in the 2024 submission and documents for the whole time series the methodology with details of activity data, sources of activity data, the assumptions made on road width and the parameters used from the 2019 EMEP/EEA Guidebook.</b></p>						
Improvement made				IIR Chapter, page		
This year submission particulates emission has been recalculated accordance with a Guidebook 2023 methodology. The calculations take into account road construction emissions data obtained during the review process. Calculations of emissions from building construction have also been updated. Relevant explanations are given in the chapter 4.1.2.3				chapter 4.1.2.3		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-3De-2023-0001	No	3De Cultivated crops, NMVOC, 1990-2021	NA	RE	No
<b>Recommendation</b>  <p>For category 3De Cultivated crops, pollutant NMVOC and for all years, the TERT noted that on page 252 of the IIR there may be an under-estimate of emissions. The TERT also noted that there is a lack of transparency regarding the methodology used to estimate emissions of NMVOC from those crops for which a Tier 2 emission factor is not provided in Table 3.3 Chapter 3D of the 2019</p>						

EMEP/EEA Guidebook. It is best practice that for those crops for which no Tier 2 emission factor is presented in Table 3.3 to use the Tier 1 emission factors presented Table 3.1, however, no information was provided in the IIR in this regard. In response to a question raised during the review, Estonia provided a revised estimate. The TERT agreed with the revised estimate provided by Estonia.

**The TERT recommends that Estonia include the revised estimate in the 2024 submission.**

Improvement made	IIR Chapter, page
The revised estimate has been included in the 2024 submission.	

Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-0A-2023-0001	No	0A National total - National total for the entire territory - Based on fuel sold/fuel used, NO <sub>x</sub> , SO <sub>2</sub> , 1994-2017	NA	No	No

#### Recommendation

The TERT noted that the value 'zero' is reported in 5 instances for NO<sub>x</sub> and SO<sub>2</sub>, and 4 NFR sectors, between 1994-2017, while appropriate notation keys should be used when emission values are not estimated. To the question on the issue Estonia responded that the following corrections will be made for the next year: for NO<sub>x</sub>, 2C7c and years 1994 and 1999 - 'NA'; for SO<sub>2</sub>, 2L and year 2016 - 'NA'; for NO<sub>x</sub>, 2B10a and 2016, Estonia will check facilities' reports; for 5C1bi and year 2017 - NO<sub>x</sub> value will be 0.00003.

**The TERT recommends that Estonia include the proper values or notation keys in the next submission and explain the use of any notation keys in the IIR in the 2024 submission.**

Improvement made	IIR Chapter, page
„Zero“ values are replaced with appropriate notation keys	



Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-11C-2023-0001	No	11C Other natural emissions, NMVOC, NO <sub>x</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NH <sub>3</sub> , 2021	NA	No	No
<b>Recommendation</b>  The TERT noted that in 2021, the value 'zero' is reported across NO <sub>x</sub> , SO <sub>2</sub> , NMVOC, NH <sub>3</sub> and PM <sub>2.5</sub> , for 11C Other natural emissions, while appropriate notation keys should have been used when emission values are not estimated. To the question on the issue Estonia responded that NMVOC values for 2021 for 11C and the notation key 'NO' for other substances will be reported in the 2024 submission.  <b>The TERT recommends that Estonia report proper values/notation keys and explain the use of any notation keys in the IIR in the 2024 submission.</b>						
Improvement made				IIR Chapter, page		
„Zero“ values are replaced with appropriate notation keys						
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-1A2f-2023-0002	No	1A2f Stationary combustion in manufacturing industries and construction: Non-metallic minerals, SO <sub>2</sub> , NO <sub>x</sub> , NMVOC, 2019-2020	NA	No	No
<b>Recommendation</b>  For 1A2f Stationary combustion in manufacturing industries and construction: Non-metallic minerals, pollutants NO <sub>x</sub> , NMVOC and SO <sub>2</sub> and years 2019-2020, the TERT notes that there is a lack of transparency regarding the substantial decline in emissions between these years. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Estonia explained that there was a decrease in solid fuel consumption and clinker was no longer being produced at the cement plant in 2020 as it was being imported from Sweden, instead.  <b>The TERT recommends that Estonia provide an explanation for the estimated decline in emissions between 2019 and 2020 in the 2024 IIR.</b>						

Improvement made				IIR Chapter, page		
The main reason for the decline in emission for NFR 1A2f between 2019 and 2020 was a decrease in solid fuel consumption at the cement factory.						
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-1B2aiv-2023-0001	No	1B2aiv Fugitive emissions oil: Refining / storage, SO <sub>2</sub> , 2020-2021	NA	No	No
<b>Recommendation</b>  For 1B2aiv Fugitive emissions oil: Refining and storage, pollutant SO <sub>2</sub> and years 2020-2021, the TERT notes that there is a lack of transparency regarding why emissions decrease substantially between these years. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Estonia explained that this sector includes emissions from enterprises and that there was a change in the SNAP key source codes used and that they plan to conduct a review in order to determine the correct SNAP codes for the entire period and make any necessary revisions to the reporting.  <b>The TERT recommends that Estonia undertake such a review and provide updated emission estimates for this sector and others that it affects, with documentation of the changes made in the IIR, in the 2024 submission.</b>						
Improvement made				IIR Chapter, page		
Corresponding changes will be made in the next submission						
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-2A5a-2023-0001	No	2A5a Quarrying and mining of minerals other than coal, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , 2009-2021	NA	No	No

<b>Recommendation</b>						
For category 2A5a Quarrying and mining of minerals other than coal, pollutant NH <sub>3</sub> and years 2019- 2021; and pollutants NO <sub>x</sub> and SO <sub>2</sub> and years 2009-2021, the TERT notes that there is a lack of transparency regarding why pollutants other than particles are reported. The IIR (Section 4.1.2) indicates that emissions from combustion are reported elsewhere and the 2019 EMEP/EEA Guidebook indicates that emissions of most pollutants (except TSP, PM <sub>10</sub> , PM <sub>2.5</sub> ) are considered 'NA' (not applicable). This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Estonia explained that emissions are produced during blasting operations using certain explosives.						
<b>The TERT recommends that Estonia add this information in the 2024 submission of the IIR to explain the inclusion of these pollutants in their inventory.</b>						
Improvement made				IIR Chapter, page		
Blasting emissions are calculated and reported by blasting operators. The methodology approved by the Ministry of the Environment (since July 1, 2023 the Ministry of Climate) is used to calculate emissions. Despite the fact that NH <sub>3</sub> , NO <sub>x</sub> and SO <sub>x</sub> emissions are very small, the Estonian inventory team considers it necessary to show them under NFR 2A5a together with TSP, PM <sub>2.5</sub> and PM <sub>10</sub> emissions.				Chapter 4.1.2.2.		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2022 (2)	EE-2A5c-2022-0001	No	2A5c Storage, handling and transport of mineral products, NMVOC, 2020	No	No	No
<b>Assessment of the implementation of the initial recommendation</b>						
For category 2A5c Storage, handling and transport of mineral products, NMVOC in 2020, the TERT notes some reallocation of emissions between categories 2A5c and 2L Other production, consumption, storage, transportation or handling of bulk products, has occurred in the 2023 submission (see also EE-2L-2021-0001). This does not relate to an over- or under-estimate of emissions. This was raised during the 2022 NECD inventory review. In response to a question raised during the review, Estonia explained that processes of bitumen and asphalt storage and handling in asphalt production are estimated under NFR 2A5c and further review of allocation of emissions between categories 2L and 2A5c is planned prior to the 2024 submission.						
<b>The TERT recommends that Estonia review the emission allocation as planned and ensures that the emissions are reallocated where appropriate and the conclusions are described in the IIR for the 2024 submission.</b>						
Improvement made				IIR Chapter, page		
The Estonian Inventory team considers that since the processes of bitumen and asphalt storage and handling in asphalt production are technologically related to the handling of bulk materials, submitting them together under one NFR 2A5c is				Chapter 4.1.2.2.		

justified. We also think that bitumen and asphalt mixtures cannot be considered as bulk materials, and thus putting them under 2L is not appropriate. Because bitumen and asphalt storage and handling operators also calculate and report NMVOC emissions, we report them with particulate matter under NFR 2A5c.						
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2022 (2)	EE-2C3-2022-0001	No	2C3 Aluminium production, PM <sub>2.5</sub> , PM <sub>10</sub> , 2017-2021	No	No	No
<b>Assessment of the implementation of the initial recommendation</b>						
For category 2C3 Aluminium production, for pollutants PM <sub>2.5</sub> and PM <sub>10</sub> , the TERT noted that emissions show a sharp decrease in 2017, and that emissions remain lower across 2017-2021. The TERT notes that there is a lack of transparency regarding why emissions decrease in the industry chapter of the IIR (the TERT acknowledges that information is provided in an Annex to the 2023 submission). This does not relate to an over- or under-estimate of emissions. This was raised during the 2022 NECD inventory review.						
In response to a question raised during the review, Estonia explained the source of emissions and the reason for changes i.e. installation of new particle abatement measures. The TERT recommends that Estonia include the details provided during the review in the industry chapter of the IIR for the 2024 submission.						
Improvement made				IIR Chapter, page		
Reduction of emissions from 2017 due to the fact that now only one operator is connected to NFR 2C3 and thus the emissions of TSP particles, PM2.5 and PM10 changed. The TSP, PM2,5 ja PM10 emissions shown here are emitted only from aluminum production and processing processes (040301). Thanks to this, PM, PM 2.5 and PM10 also decreased.				Chapter 4.1.4.2.		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-2D-2023-0001	No	2D Non energy products from fuels and solvent uses, NMVOC, 2005-2021	NA	No	No
<b>Recommendation</b>						

For category 2D3d Non energy products from fuels and solvent uses, for pollutant NMVOC and years 2005-2021, the TERT notes that there is a lack of transparency regarding the methods used for calculation NMVOC emissions for SNAP 060103 Building and 060104 Domestic painting. During the review, Estonia provided further explanation to the TERT.

**The TERT recommends that Estonia includes this information in its 2024 IIR submission to improve the transparency of emission estimates from these two activities. During the review, Estonia noticed that some plant emissions from the SNAP sector 060105 Coil coating were allocated to another SNAP sector. The TERT recommends that Estonia check the allocation of plant data to the correct SNAP sector and explain the changes in the 2024 IIR, and thus remove the unnecessary notation key 'NA'.**

Improvement made	IIR Chapter, page
<p>The annual air reports of facilities related to coil coating (SNAP code 060105) were analyzed. The analysis revealed that 2018-2021, emissions from coil coating were mistakenly reported under SNAP code 060108. As a result of the analysis, errors in the classification of chemicals were also identified. As a result of the correction, the NMVOC emissions changed slightly. Recalculations are presented in chapter 8.2.2.</p> <p>A detailed description of the methodology, how the NMVOC emissions of SNAP codes 060103 and 060104 have been estimated, is presented in chapter 4.2.5.2</p>	<p>Chapter 8.2.2.</p> <p>Chapter 4.2.5.2</p>

Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-2D3e-2023-0001	No	2D3e Degreasing, NMVOC, 2005-2021	NA	No	No

#### Recommendation

For category 2D3e Degreasing, pollutant NMVOC and years 2005-2021, the TERT notes that there is a lack of transparency regarding methods used. This does not relate to an over- or under-estimate of emissions. In response to a question raised by the TERT during the review, Estonia provided further information on how the reduction strategy was elaborated.

**The TERT recommends that Estonia include the information provided to the TERT in the 2024 IIR submission.**

Improvement made	IIR Chapter, page
<p>There is no information available how different degreasing process types are stratified in Estonia, but an expert opinion has been formed in ESTEA how the penetration of different technologies within the degreasing industry could have been evolved. Explanations based on which the expert opinion was formed are presented in chapter 4.2.6.2.</p>	<p>Chapter 4.2.6.2</p>

Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2022 (2)	EE-2D3g-2022-0002	No	2D3g Chemical products, NMVOC, 2005-2021	No	No	No
<b>Assessment of the implementation of the initial recommendation</b>  For category 2D3g Chemical products, pollutant NMVOC and years 2005-2021, the TERT notes that there is a lack of transparency regarding the method used for calculating NMVOC emissions from for SNAP 060306 Pharmaceutical products in the IIR. During the 2023 review, Estonia confirmed this activity exists in Estonia, but no NMVOC emissions occur. The TERT recommends that Estonia include this information with a justification of the lack of emissions in the next 2024 IIR submission. During the review and follow-up questions from the TERT, Estonia noticed that some plant emissions coming from plant operator reports were not allocated to the correct SNAP sector.  <b>The TERT recommends that Estonia check this for the 2024 IIR submission. The TERT also notes that emissions are derived from plant operator reports from 2006 to 2021 and that 2005 emissions are estimated with another generic method for all of SNAP 060300. The TERT recommends that Estonia fill in the gaps for 2005 by simply using the 2006 emissions reported by plant operators for the 2024 submission.</b>						
Improvement made				IIR Chapter, page		
An explanation about the production of pharmaceutical products is included in chapter 4.2.8.1.  An analysis of the annual air reports has started to find out whether the activities are reported with the same SNAP code throughout the time series and whether the activities correspond to the SNAP codes shown in the report. The analysis is time-consuming, as it requires processing and analysis of environmental permit applications. After the analysis, we can apply TERT's recommendation to use 2006 emissions when presenting 2005 emissions.				Chapter 4.2.8.1		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-2H1-2023-0001	No	2H1 Pulp and paper industry, SO <sub>2</sub> , NO <sub>x</sub> , 1990-2021	NA	No	No
<b>Recommendation</b>  For category 2H1 Pulp and paper industry and pollutants NO <sub>x</sub> and SO <sub>2</sub> , for all years, the TERT notes that there is a lack of transparency on why emissions are not reported. The notation key 'NA' (not applicable) is used in some years. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the review, Estonia explained that SO <sub>2</sub> and NO <sub>x</sub> emissions are related to the burning of fuels in boilers and are reported elsewhere. However, PM is released from some activities and the Estonian inventory team plans to analyse and clarify the emissions						



data from previous years for NFR 2H1.						
The TERT recommends that Estonia review the allocation of emission estimates and use of notation keys as appropriate in the 2024 submission, and provide a summary of the technologies and emissions for pulp and paper production.						
Improvement made				IIR Chapter, page		
According to the assessment of the Estonian inventory team, SOx and NOx emissions are related to the burning of fuels in boilers and not to the technological processes of pulp and paper production, and that is why starting from 2018 they are shown under other NFRs, e.g. 1A2d and in NFR 2H1 SOx and NOx emissions are marked NA. Solid particles are released from the melting tank of the "HORIZON" TSELLULOOSI JA PABERI AS COMPANY and from the production of sulphite-free chemical-mechanical paper pulp of the Estonian Cell Aktiaselts shown under NFR 2H1.  The Estonian inventory team plans to analyze and clarifies the emissions data from previous years for NFR 2H1 and presents them to the 2025 inventory.				Chapter 4.1.6.2		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2021 (3)	EE-2L-2021-0001	No	2L Other production, consumption, storage, transportation or handling of bulk products, PM <sub>10</sub> , 2000-2020	No	No	No
Assessment of the implementation of the initial recommendation						
For category 2L Other production, consumption, storage, transportation or handling of bulk products, PM <sub>10</sub> , 2000-2020 the TERT notes that some reallocation of emissions between categories 2A5c Storage, handling and transport of mineral products and 2L has occurred in the 2023 submission (see also EE-2A5c-2022-0001). This does not relate to an over- or under-estimate of emissions. This was raised during the 2021 and 2022 NECD inventory reviews. Annex II of the IIR states that the issue has been included in the list of improvements and, in response to a question raised during the review (on EE-2A5c-2022-0001), Estonia explained that processes of bitumen and asphalt storage and handling in asphalt production are estimated under NFR 2A5c and further review of allocation of emissions between categories 2L and 2A5c is planned prior to the 2024 submission.						
The TERT recommends that Estonia review the emission allocation as planned and ensure that the conclusions are described in the IIR for the 2024 submission.						
Improvement made				IIR Chapter, page		

<p><b>In sector 2L are presented emissions from related to the consumption, storage, transportation or handling of bulk products, such as bulk materials handling in ports.</b></p> <p>The Estonian Inventory team considers that since the processes of bitumen and asphalt storage and handling in asphalt production are technologically related to the handling of bulk materials, submitting them together under one NFR 2A5c is justified. We also think that bitumen and asphalt mixtures cannot be considered as bulk materials, and thus putting them under 2L is not appropriate. Because bitumen and asphalt storage and handling operators also calculate and report NMVOC emissions, we report them with particulate matter under NFR 2A5c.</p> <p>To obtain an accurate picture of emissions from various activities involving the consumption, storage, transportation or handling of bulk products processing, the Estonian inventory team has begun analyzing and, if necessary, relocating relevant emissions to sector 2L.</p>				Chapter 4.1.2.2.		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-3B1-2023-0001	No	3B1 Manure management - Cattle, NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, 1990-2021	NA	No	No
<p><b>Recommendation</b></p> <p>For category 3B1 Manure management - Cattle, pollutants NH<sub>3</sub>, NO<sub>x</sub> and NMVOC and all years, the TERT notes that with regard to the nitrogen excretion values used for dairy cows and other cattle (Tables 5.10 and 5.11 of the NIR) there is a lack of transparency regarding the actual nitrogen excretion values used in emission calculations. The TERT notes that Estonia refers to the 2022 NIR as the source of nitrogen excretion values for other cattle, however upon review of the 2022 NIR (Tables 5.40 and 5.41) the values presented therein do not agree with those in Tables 5.10 and 5.11 of the IIR. The TERT also examined the 2023 NIR (Tables 5.27 and 5.28) and found similar inconsistencies. In response to a question raised during the review Estonia explained that the greenhouse gas team made changes to N excretion values post provision of data to the team responsible for NH<sub>3</sub> emission estimates. The changes made are small and would result in revised emission estimates that do not meet the threshold of significance criteria.</p> <p><b>The TERT recommends that Estonia undertake every effort to use consistent nitrogen excretion values for both the greenhouse gas and NH<sub>3</sub> emission estimates; one suggested approach is to agree a cut-off date after which no further changes are made so consistent values are used in both inventories.</b></p>						
Improvement made				IIR Chapter, page		
The nitrogen excretion values have been validated against the latest NIR report version during the IIR writing process. Collaboration between the two teams continues in a planned and agreed-upon manner.						

Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-3B3-2023-0001	Yes	3B3 Manure management - Swine, NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, 1990-2021	NA	No	No
<b>Recommendation</b>  For category 3B3 Manure management - Swine, pollutants NH <sub>3</sub> , NO <sub>x</sub> and NMVOC and for all years, the TERT notes that on pages 244 and 246 (Table 5.12) of the IIR that there is a lack of transparency regarding the nitrogen excretion values reported. In response to a question raised during the review, Estonia clarified that there are a number of regulations which were in force across the time series from which nitrogen excretion values were derived.  <b>The TERT recommends that Estonia include a more detailed description of how nitrogen excretion values for swine are derived from the different regulations across the time series, in the IIR of its 2024 submission.</b>						
Improvement made				IIR Chapter, page		
In chapter 5.2.2 of the IIR, a reference to the updated regulation has been added, along with a clarification of the time series.				Chapter 5.2.2		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-3Da2a-2023-0001	Yes	3Da2a Animal manure applied to soils, NH <sub>3</sub> , 2005-2021	NA	No	No
<b>Recommendation</b>  For category 3Da2a Animal manure applied to soils, pollutant NH <sub>3</sub> and years 2005-2021, the TERT noted that in table 5.15 of the IIR that there is a lack of transparency regarding the abatement techniques used to reduce emissions of NH <sub>3</sub> from the land spreading of manure. Specifically, Estonia refers to an application technique described as band spreading with trailing shoe within 12 hours, and a separate technique described as trailing shoes spreading, without referring to what is the difference between these two techniques (i.e. band spreading is a different technique to trailing shoe). In response to a question raised during the review Estonia provided a description of the technique used and agreed with the TERT that closed slot injection was the most appropriate definition, which matches the percentage abatement factor reported and that it would continue consultations with relevant experts for the next submission and update Table 5.15 as required.  <b>The TERT recommends that Estonia review the definitions of abatement techniques presented in Table 5.15 in conjunction with relevant experts and report on progress in the 2024 submission.</b>						

Improvement made				IIR Chapter, page		
In chapter 5.2.2 of the IIR, Table 5.12 has been updated				Chapter 5.2.2		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2019 (5)	EE-3F-2019-0001	No	3F Field burning of agricultural residues, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , PM <sub>10</sub> , 2005, 2019-2020	No	No	No
<b>Assessment of the implementation of the initial recommendation</b>  For category 3F Field Burning of Agricultural Residues, pollutants NO <sub>x</sub> , NMVOC, NH <sub>3</sub> , SO <sub>2</sub> , PM <sub>2.5</sub> and PM <sub>10</sub> , and years 2005, 2019 to 2021, the TERT noted that there is a lack of transparency regarding the reporting of emissions by Estonia using the notation key 'NO', and the indication in the IIR that no activity data exists. This does not relate to an over- or under-estimate of emissions that is over the threshold of significance. This was first raised in the 2019 NECD inventory review. The TERT previously recommended that Estonia change the notation key from 'NO' to 'NE', however, the notation key 'NO' is used in the 2023 submission. In response to an observation raised during the review Estonia clarified that the practice does not occur and thus no activity data exist, and that thus 'NO' is reported.  <b>The TERT recommends that Estonia clearly explain the rationale for the continued use of 'NO' in reporting of these emissions in the IIR of its 2024 submission.</b>						
Improvement made				IIR Chapter, page		
Since the Field Burning of Agricultural Residues is not use The notation key 'NO' has been used, the explanation is provided in Chapter 5.4 of the IIR.				Chapter 5.4		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2022 (2)	EE-5A-2022-0001	No	5A Biological treatment of waste - Solid waste disposal on land, NH <sub>3</sub> , 2007-2020	No	No	No

### Assessment of the implementation of the initial recommendation

For 5A Biological treatment of waste - Solid waste disposal on land, pollutant NH<sub>3</sub> and years 2007-2020 the TERT notes that there is a lack of transparency regarding the reporting of emissions coming from a slaughterhouse that stores so called unborn manure (stomach and intestinal contents) as biowaste. This does not relate to an over- or under-estimate of emissions. This was raised during the 2022 NECD inventory review. In response to a question raised during the review, Estonia explained that this was reported by the operator as waste management. However, the TERT is of the opinion that it is storage of waste awaiting for transport, for instance, for direct use as fertiliser or for anaerobic digestion or for other use. Therefore, the emissions belong to the production process of the operator and need to be allocated to NFR 2H2 Food and beverages industry. Estonia agreed with this and will verify the storage with the operator before re-allocating the emissions.

**The TERT recommends that Estonia verify that the unborn manure is only being stored awaiting for transport and include a re-allocation in the 2024 submission of the IIR.**

Improvement made	IIR Chapter, page
NH <sub>3</sub> emissions from NFR 5A have been reallocated under the NFR 2H2. A more detailed explanation of recalculations is provided in chapter 8.4.	Chapter 8.4

Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2022 (2)	EE-5B2-2022-0002	No	5B2 Biological treatment of waste - Anaerobic digestion at biogas facilities, NH <sub>3</sub> , 1990-2021	No	No	No

### Assessment of the implementation of the initial recommendation

For 5B2 Biological treatment of waste - Anaerobic digestion at biogas facilities, for pollutant NH<sub>3</sub> and all years, the TERT notes that there are time series inconsistencies and issues with transparency as NH<sub>3</sub> emissions have not been estimated for 2005-2010 and for 2018-2020. The issue was raised during the 2022 NECD inventory review. According to the information provided in the IIR the emissions reported by Estonia are related to flaring in biogas production facilities. Estonia stated that there is a project on emissions from biogas production facilities that will be completed in 2023. This does not relate to an over- or under-estimate of emissions. In response to a question raised during the 2023 review, Estonia confirmed that the project will be finished by the end of 2023 and NH<sub>3</sub> emissions can be reported in the 2024 submission.

**The TERT reiterates the recommendation that Estonia use the results of these studies to verify and improve the accuracy and completeness of the reported NH<sub>3</sub> emissions in its 2024 submission.**

Improvement made	IIR Chapter, page
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NH <sub>3</sub> emissions from NFR 5B2 have been calculated for the period between 2011–2021. A detailed description of the methodology and activity data is provided in chapter 6.3.2 and explanations related to the recalculations in chapter 8.4.				Chapter 6.3.2 Chapter 8.4		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-5C1bi-2023-0002	No	5C1bi Industrial waste incineration, PM <sub>2.5</sub> , PM <sub>10</sub> , 1990-2007	NA	No	No
<b>Recommendation</b>  For category 5C1bi Industrial waste incineration, pollutants PM <sub>10</sub> and PM <sub>2.5</sub> and years 1990-2007, the TERT notes that the notation key 'NR' (not reported) is used whilst a Tier 1 method is available in the 2019 EMEP/EEA Guidebook. Estonia explained sufficiently why the notation key 'NR' is used for years 1990-1999 as their reporting obligation starts from year 2000, and the activity in the years 2000-2006 (where notation key 'NA' is used) are so low that they are negligible.  <b>The TERT recommend that Estonia include the explanation provided in the 2024 IIR.</b>						
Improvement made				IIR Chapter, page		
Analysis of the annual waste reports revealed that the amounts of industrial waste incinerated without energy recovery are insignificant. The explanation is provided in chapter 6.4.1.				Chapter 6.4.1		
Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-5C1bi-2023-0003	No	5C1bi Industrial waste incineration, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , PM <sub>10</sub> , 1990-2021	NA	No	No
<b>Recommendation</b>  For category 5C1bi Industrial waste incineration, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , PM <sub>10</sub> , years 1990-2021 the TERT notes that there is a lack of transparency regarding the text in the NFR table 6.1 (page 256) and NFR page 263 (4e paragraph under 6.4.1) as it seems that Estonia reports emissions from the chemical industry under this NFR. The TERT notes that emissions from afterburners and flares in the chemical industry need to be reported under the appropriate NFR categories as they are not regarded to be emissions from burning of industrial wastes. This does not relate to an over-						



or under-estimate of emissions. In response to a question raised during the review, Estonia explained that only emissions from exhaust gas afterburners are reported under NFR 5C1bi and that the amounts of waste incinerated without energy recovery is insignificant. In 2021, the quantity of waste incinerated without energy recovery was 1.12 tonnes (wooden packaging, paper and cardboard packaging), in 2020 it was 0.6 tonnes (wooden packaging) and therefore, it can be assumed that the emissions are negligible. Additionally, Estonia is analysing the possibility of reporting pollutant emissions from additional fuel combustion of afterburners under the industrial combustion sector. Before 2006, as far as is known, companies did not have exhaust gas afterburners. Results of the study are not expected before the 2024 submission. The TERT notes that the information in the response refers also to the issues EE-5C1bi-2023-0001 and EE-5C1bi-2022-0001.

**The TERT recommends that Estonia add a detailed explanation on the above-mentioned issues in the IIR for category 5C1Bi and refers to the analyses that is taken place; additionally, the results of the analyses should be included in the 2025 submission of the IIR.**

Improvement made	IIR Chapter, page
A detailed explanation is added to chapter 6.4.1. In addition, it is planned to analyze the possibility of reporting emissions from the combustion of afterburner fuel under the industrial combustion sector or the industrial sector. The planned improvements are described in chapter 6.4.4.	Chapter 6.4.1 Chapter 6.4.4

Review year of initial recommendation (number of years it has been recommended)	Observation	Key Category	NFR, Pollutant(s), Year(s)	RE, TC in 2022	RE, TC, or UPTC in 2023	Tier 1 used for Key Category
2023 (1)	EE-5C2-2023-0002	No	5C2 Open burning of waste, PM <sub>2.5</sub> , PM <sub>10</sub> , 1990-2021	NA	No	No

#### Recommendation

For 5C2 Open burning of waste, pollutants PM<sub>2.5</sub> and PM<sub>10</sub> and all years, the TERT notes that there may be an under-estimate that have an impact on total emissions that is above the threshold of significance. Emissions are not estimated for open (agricultural) waste burning (not stubble burning), while a Tier 1 methodology is available in the 2019 EMEP/EEA Guidebook. Additionally, the TERT notes that from the IIR it is clear that (also without PM-emissions) only open burning from household wastes is implemented in the inventory (IIR page 267). Additionally, the TERT notes that Estonia reports for PM<sub>10</sub> and PM<sub>2.5</sub> over the period 1990-1999 the notation key 'NR' and for the period 2000-2021 the notation key 'NE'. The TERT notes furthermore, that FAOSTAT reports in 2020 approximately 694,000 ha of arable land in Estonia. In response to a question raised during the review, Estonia explained that open burning of agricultural wastes is forbidden and based on consulting several experts from the Estonian University of Life Sciences and according to their best knowledge, the practice of open burning agricultural waste has not taken place in Estonia. Estonia furthermore explained that during the review in 2021 the TERT considered that the use of emission factors intended for waste incineration plants is not appropriate and recommended to use emission factors from the document Review of emission factors for incident fires (Science report: SC060037/SR3, UK Environment Agency). The recommended document does not contain emission factors for PM<sub>10</sub> and PM<sub>2.5</sub>. Therefore, PM<sub>2.5</sub> and PM<sub>10</sub> emissions from open burning of MSW were not calculated. The TERT notes that the issue is below the threshold of significance for a technical correction. The TERT considers that while document referred to does present an emission factor for PM (i.e. TSP) of 8 kg/Mg, best practise would be that the emissions from PM<sub>10</sub> and PM<sub>2.5</sub> were calculated with proper emission factors, and that using fraction of PM<sub>10</sub> and PM<sub>2.5</sub> is the next best approach. In many countries (amongst others India and parts of China) garbage burning is still a common practice, thus a literature survey could be made by Estonia to identify emission factors and/or TSP:PM<sub>10</sub>:PM<sub>2.5</sub> ratios that could yield more information. If no other information is available, it would be best practise to set the fractions of PM<sub>10</sub> and PM<sub>2.5</sub> at 100% of TSP (until better information becomes available).

The TERT recommends that Estonia calculate the emissions of TSP with the emission factor from document Review of emission factors for incident fires (Science report: SC060037/SR3, UK Environment Agency) and calculate the PM <sub>2.5</sub> and PM <sub>10</sub> emissions as 100% fractions of TSP.	
Improvement made	IIR Chapter, page
Since there is no more precise data on emission factors of PM <sub>10</sub> and PM <sub>2.5</sub> , according to TERT's recommendation, PM <sub>10</sub> and PM <sub>2.5</sub> emissions were calculated using TSP emission factor.	Chapter 8.4 Chapter 6.4.2

## ANNEX III – The Results of the Uncertainty Calculations by Air Pollutants and NFR Codes

NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	NOx	24.692094	6.789564	2	10	10.20	0.000874	-1.270	9.087	-0.127	0.257%	0.001%
1A1c	Manufacture of solid fuels and other energy industries	NOx	0.049730	0.398954	2	20	20.10	0.000012	0.513	0.534	0.103	0.015%	0.000%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	NOx	0.000000	0.000499	2	10	10.20	0.000000	0.001	0.001	0.000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	NOx	0.562910	0.015477	2	10	10.20	0.000000	-0.215	0.021	-0.022	0.001%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	NOx	0.285499	0.079231	2	10	10.20	0.000000	-0.014	0.106	-0.001	0.003%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	NOx	1.431047	0.073827	2	10	10.20	0.000000	-0.502	0.099	-0.050	0.003%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	NOx	2.243110	0.065862	2	10	10.20	0.000000	-0.853	0.088	-0.085	0.002%	0.000%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	NOx	0.396220	0.227290	2	50	50.04	0.000024	0.138	0.304	0.069	0.009%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	NOx	1.525791	0.127644	2	10	10.20	0.000000	-0.469	0.171	-0.047	0.005%	0.000%
1A3ai(i)	International aviation LTO (civil)	NOx	0.050719	0.068792	2	30	30.07	0.000001	0.071	0.092	0.021	0.003%	0.000%
1A3aii(i)	Domestic aviation LTO (civil)	NOx	0.001595	0.003770	2	30	30.07	0.000000	0.004	0.005	0.001	0.000%	0.000%
1A3bi	Road transport: Passenger cars	NOx	13.400210	2.611617	2	20	20.10	0.000502	-2.124	3.495	-0.425	0.099%	0.002%
1A3bii	Road transport: Light duty vehicles	NOx	1.608747	1.128184	2	20	20.10	0.000094	0.835	1.510	0.167	0.043%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	NOx	10.514225	2.078561	2	20	20.10	0.000318	-1.628	2.782	-0.326	0.079%	0.001%
1A3biv	Road transport: Mopeds & motorcycles	NOx	0.002522	0.011695	2	20	20.10	0.000000	0.015	0.016	0.003	0.000%	0.000%
1A3c	Railways	NOx	2.837568	0.766387	2	100	100.02	0.001071	-0.165	1.026	-0.165	0.029%	0.000%
1A3dii	National navigation (shipping)	NOx	0.549500	0.450983	2	100	100.02	0.000371	0.373	0.604	0.373	0.017%	0.001%
1A4ai	Commercial/Institutional: Stationary	NOx	0.467705	0.218106	2	10	10.20	0.000001	0.096	0.292	0.010	0.008%	0.000%
1A4aii	Commercial/Institutional: Mobile	NOx	0.176023	0.070210	2	50	50.04	0.000002	0.020	0.094	0.010	0.003%	0.000%
1A4bi	Residential: Stationary	NOx	4.416697	4.554877	50	50	70.71	0.018903	4.240	6.096	2.120	4.311%	0.231%
1A4bii	Residential: Household and gardening (mobile)	NOx	0.004763	0.023300	2	50	50.04	0.000000	0.029	0.031	0.015	0.001%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	NOx	0.405901	0.112725	2	10	10.20	0.000000	-0.019	0.151	-0.002	0.004%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	NOx	3.157605	0.732500	2	50	50.04	0.000245	-0.344	0.980	-0.172	0.028%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	NOx	0.857070	0.043960	2	100	100.02	0.000004	-0.301	0.059	-0.301	0.002%	0.001%
1B1c	Other fugitive emissions from solid fuels	NOx	0.107025	0.098995	2	50	50.04	0.000004	0.088	0.132	0.044	0.004%	0.000%

NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1B2c	Venting and flaring (oil, gas, combined oil and gas)	NOx	0.000000	0.000055	2	50	50.04	0.000000	0.000	0.000	0.000	0.000%	0.000%
2A5a	Quarrying and mining of minerals other than coal	NOx	0.000000	0.005517	2	50	50.04	0.000000	0.007	0.007	0.004	0.000%	0.000%
2B1	Ammonia production	NOx	0.190000	0.000000	2	50	50.04	0.000000	-0.080	0.000	-0.040	0.000%	0.000%
2C1	Iron and steel production	NOx	0.000624	0.000000	2	50	50.04	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C7c	Other metal production (please specify in the IIR)	NOx	0.000000	0.064044	2	50	50.04	0.000002	0.086	0.086	0.043	0.002%	0.000%
2G	Other product use (please specify in the IIR)	NOx	0.007498	0.002628	5	50	50.25	0.000000	0.000	0.004	0.000	0.000%	0.000%
2H2	Food and beverages industry	NOx	0.000000	0.001895	2	50	50.04	0.000000	0.003	0.003	0.001	0.000%	0.000%
3B1a	Manure management - Dairy cattle	NOx	0.056542	0.004025	2	100	100.02	0.000000	-0.018	0.005	-0.018	0.000%	0.000%
3B1b	Manure management - Non-dairy cattle	NOx	0.030166	0.019445	2	100	100.02	0.000001	0.013	0.026	0.013	0.001%	0.000%
3B2	Manure management - Sheep	NOx	0.006580	0.002630	2	100	100.02	0.000000	0.001	0.004	0.001	0.000%	0.000%
3B3	Manure management - Swine	NOx	0.005360	0.000960	2	100	100.02	0.000000	-0.001	0.001	-0.001	0.000%	0.000%
3B4d	Manure management - Goats	NOx	0.000150	0.000280	2	100	100.02	0.000000	0.000	0.000	0.000	0.000%	0.000%
3B4e	Manure management - Horses	NOx	0.001540	0.000900	2	100	100.02	0.000000	0.001	0.001	0.001	0.000%	0.000%
3B4gi	Manure management - Laying hens	NOx	0.014732	0.004019	2	100	100.02	0.000000	-0.001	0.005	-0.001	0.000%	0.000%
3B4gii	Manure management - Broilers	NOx	0.006662	0.005731	2	100	100.02	0.000000	0.005	0.008	0.005	0.000%	0.000%
3B4giv	Manure management - Other poultry	NOx	0.003575	0.005445	2	100	100.02	0.000000	0.006	0.007	0.006	0.000%	0.000%
3B4h	Manure management - Other animals (please specify in the IIR)	NOx	0.008210	0.000530	2	100	100.02	0.000000	-0.003	0.001	-0.003	0.000%	0.000%
3Da1	Inorganic N-fertilizers (includes also urea application)	NOx	2.868000	1.682120	2	100	100.02	0.005158	1.047	2.251	1.047	0.064%	0.011%

A	B	C	D	E	F	G	H	I	J	K	L	M	
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
3Da2a	Animal manure applied to soils	NOx	1.322035	0.679827	2	100	100.02	0.000843	0.355	0.910	0.355	0.026%	0.001%
3Da2b	Sewage sludge applied to soils	NOx	0.003142	0.002664	2	100	100.02	0.000000	0.002	0.004	0.002	0.000%	0.000%
3Da2c	Other organic fertilisers applied to soils (including compost)	NOx	0.001983	0.050037	2	100	100.02	0.000005	0.066	0.067	0.066	0.002%	0.000%
3Da3	Urine and dung deposited by grazing animals	NOx	0.422268	0.120601	2	100	100.02	0.000027	-0.016	0.161	-0.016	0.005%	0.000%
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities	NOx	0.000000	0.002418	2	100	100.02	0.000000	0.003	0.003	0.003	0.000%	0.000%
5C1bi	Industrial waste incineration	NOx	0.000000	0.001044	2	100	100.02	0.000000	0.001	0.001	0.001	0.000%	0.000%
5C1bii	Hazardous waste incineration	NOx	0.000000	0.001357	2	100	100.02	0.000000	0.002	0.002	0.002	0.000%	0.000%
5C1biii	Clinical waste incineration	NOx	0.000021	0.000000	2	100	100.02	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bv	Cremation	NOx	0.000000	0.009425	2	100	100.02	0.000000	0.013	0.013	0.013	0.000%	0.000%
5C2	Open burning of waste	NOx	0.022929	0.004987	10	100	100.50	0.000000	-0.003	0.007	-0.003	0.001%	0.000%
Total			74.716293	23.425594				0.028461					0.250%
% uncertainty in total inventory (%)								16.870	Trend uncertainty (%):				5.005



	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	NMVOC	0.491848	0.884915	2	6.9	7.184	0.000006	1.060	1.373	0.073	0.039%	0.000%
1A1c	Manufacture of solid fuels and other energy industries	NMVOC	1.090552	1.630063	2	50	50.040	0.000951	1.835	2.529	0.917	0.072%	0.008%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	NMVOC	0.000000	0.000021	2	6.9	7.184	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	NMVOC	0.023548	0.001378	2	6.9	7.184	0.000000	-0.013	0.002	-0.001	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	NMVOC	0.010044	0.017239	2	6.9	7.184	0.000000	0.020	0.027	0.001	0.001%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	NMVOC	0.053490	0.006702	2	6.9	7.184	0.000000	-0.024	0.010	-0.002	0.000%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	NMVOC	0.052879	0.005821	2	6.9	7.184	0.000000	-0.025	0.009	-0.002	0.000%	0.000%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	NMVOC	0.233444	0.022850	2	50	50.040	0.000000	-0.113	0.035	-0.057	0.001%	0.000%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	NMVOC	0.136683	0.031180	2	6.9	7.184	0.000000	-0.039	0.048	-0.003	0.001%	0.000%
1A3ai(i)	International aviation LTO (civil)	NMVOC	0.009555	0.009639	2	30	30.067	0.000000	0.009	0.015	0.003	0.000%	0.000%
1A3aii(i)	Domestic aviation LTO (civil)	NMVOC	0.002479	0.002606	2	30	30.067	0.000000	0.002	0.004	0.001	0.000%	0.000%
1A3bi	Road transport: Passenger cars	NMVOC	10.659912	0.361834	2	20	20.100	0.000008	-6.218	0.561	-1.244	0.016%	0.015%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3bii	Road transport: Light duty vehicles	NMVOC	0.810799	0.032858	2	20	20.100	0.000000	-0.465	0.051	-0.093	0.001%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	NMVOC	2.552549	0.067231	2	20	20.100	0.000000	-1.521	0.104	-0.304	0.003%	0.001%
1A3biv	Road transport: Mopeds & motorcycles	NMVOC	0.010032	0.043287	2	20	20.100	0.000000	0.061	0.067	0.012	0.002%	0.000%
1A3bv	Road transport: Gasoline evaporation	NMVOC	3.377149	0.214465	2	20	20.100	0.000003	-1.817	0.333	-0.363	0.009%	0.001%
1A3c	Railways	NMVOC	0.229483	0.059509	2	100	100.020	0.000005	-0.054	0.092	-0.054	0.003%	0.000%
1A3dii	National navigation (shipping)	NMVOC	0.019600	0.016086	2	100	100.020	0.000000	0.012	0.025	0.012	0.001%	0.000%
1A4ai	Commercial/Institutional: Stationary	NMVOC	0.205292	0.060781	2	6.9	7.184	0.000000	-0.036	0.094	-0.003	0.003%	0.000%
1A4aii	Commercial/Institutional: Mobile	NMVOC	0.554510	0.027882	2	50	50.040	0.000000	-0.310	0.043	-0.155	0.001%	0.000%
1A4bi	Residential: Stationary	NMVOC	5.987751	3.366968	50	6.9	50.474	0.004128	1.410	5.225	0.097	3.694%	0.137%
1A4bii	Residential: Household and gardening (mobile)	NMVOC	0.119810	0.171000	2	50	50.040	0.000010	0.189	0.265	0.095	0.008%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	NMVOC	0.116690	0.033993	2	6.9	7.184	0.000000	-0.022	0.053	-0.001	0.001%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	NMVOC	1.209359	0.067700	2	50	50.040	0.000002	-0.665	0.105	-0.333	0.003%	0.001%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	NMVOC	0.163908	0.001568	2	100	100.020	0.000000	-0.102	0.002	-0.102	0.000%	0.000%
1B2aiv	Fugitive emissions oil: Refining and storage	NMVOC	0.000000	0.121068	2	50	50.040	0.000005	0.188	0.188	0.094	0.005%	0.000%
1B2av	Distribution of oil products	NMVOC	2.378000	0.586800	2	50	50.040	0.000123	-0.604	0.911	-0.302	0.026%	0.001%
1B2b	Fugitive emissions from natural gas (exploration, production, processing, transmission, storage, distribution and other)	NMVOC	0.096000	0.010213	2	50	50.040	0.000000	-0.045	0.016	-0.023	0.000%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	NMVOC	0.000000	0.000250	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%

NFR sector	A NFR name	B Pollutant	C 1990 emissions, kt	D 2022 emissions, kt	E Activity data uncertainty, %	F Emission factor uncertainty, %	G Combined uncertainty, %	H Contribution to Variance by Category in Year 2022	I Type A sensitivity, %	J Type B sensitivity, %	K Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	L Uncertainty in trend in national emissions introduced by activity data uncertainty	M Uncertainty in trend in national emissions introduced into the trend in total national emissions
2A5c	Storage, handling and transport of mineral products	NMVOC	0.000000	0.002178	2	50	50.040	0.000000	0.003	0.003	0.002	0.000%	0.000%
2B1	Ammonia production	NMVOC	0.005172	0.000000	2	50	50.040	0.000000	-0.003	0.000	-0.002	0.000%	0.000%
2B10a	Chemical industry: Other (please specify in the IIR)	NMVOC	13.300000	0.010287	2	50	50.040	0.000000	-8.438	0.016	-4.219	0.000%	0.178%
2B10b	Storage, handling and transport of chemical products (please specify in the IIR)	NMVOC	0.000000	0.003559	2	50	50.040	0.000000	0.006	0.006	0.003	0.000%	0.000%
2C1	Iron and steel production	NMVOC	0.000221	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C3	Aluminium production	NMVOC	0.000000	0.002048	2	50	50.040	0.000000	0.003	0.003	0.002	0.000%	0.000%
2C7c	Other metal production (please specify in the IIR)	NMVOC	0.000000	0.005376	2	50	50.040	0.000000	0.008	0.008	0.004	0.000%	0.000%
2D3a	Domestic solvent use including fungicides	NMVOC	4.067851	3.615471	2	50	50.040	0.004678	3.017	5.610	1.509	0.159%	0.023%
2D3b	Road paving with asphalt	NMVOC	0.027000	0.022725	2	100	100.020	0.000001	0.018	0.035	0.018	0.001%	0.000%
2D3d	Coating applications	NMVOC	2.242089	7.008888	2	50	50.040	0.017580	9.445	10.876	4.722	0.308%	0.224%
2D3e	Degreasing	NMVOC	0.179541	0.082356	10	30	31.623	0.000001	0.013	0.128	0.004	0.018%	0.000%
2D3f	Dry cleaning	NMVOC	0.014558	0.004025	10	50	50.990	0.000000	-0.003	0.006	-0.002	0.001%	0.000%
2D3g	Chemical products	NMVOC	0.495890	0.165316	2	20	20.100	0.000002	-0.059	0.257	-0.012	0.007%	0.000%
2D3h	Printing	NMVOC	0.079751	0.338210	2	100	100.020	0.000164	0.474	0.525	0.474	0.015%	0.002%
2D3i	Other solvent use (please specify in the IIR)	NMVOC	1.264362	1.467407	5	50	50.249	0.000777	1.471	2.277	0.736	0.161%	0.006%
2G	Other product use (please specify in the IIR)	NMVOC	0.053543	0.050669	5	50	50.249	0.000001	0.045	0.079	0.022	0.006%	0.000%
2H1	Pulp and paper industry	NMVOC	0.220000	0.048826	2	50	50.040	0.000001	-0.064	0.076	-0.032	0.002%	0.000%
2H2	Food and beverages industry	NMVOC	1.788425	0.759238	2	50	50.040	0.000206	0.039	1.178	0.020	0.033%	0.000%
2I	Wood processing	NMVOC	0.000000	0.114743	2	50	50.040	0.000005	0.178	0.178	0.089	0.005%	0.000%
3B1a	Manure management - Dairy cattle	NMVOC	3.143850	2.467950	2	100	100.020	0.008708	1.826	3.830	1.826	0.108%	0.033%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
3B1b	Manure management - Non-dairy cattle	NMVOC	3.533500	1.188700	2	100	100.020	0.002020	-0.406	1.845	-0.406	0.052%	0.002%
3B2	Manure management - Sheep	NMVOC	0.044220	0.017610	2	100	100.020	0.000000	-0.001	0.027	-0.001	0.001%	0.000%
3B3	Manure management - Swine	NMVOC	0.850555	0.169110	2	100	100.020	0.000041	-0.279	0.262	-0.279	0.007%	0.001%
3B4d	Manure management - Goats	NMVOC	0.001310	0.002500	2	100	100.020	0.000000	0.003	0.004	0.003	0.000%	0.000%
3B4e	Manure management - Horses	NMVOC	0.066920	0.038900	2	100	100.020	0.000002	0.018	0.060	0.018	0.002%	0.000%
3B4gi	Manure management - Laying hens	NMVOC	0.366957	0.091658	2	100	100.020	0.000012	-0.091	0.142	-0.091	0.004%	0.000%
3B4gii	Manure management - Broilers	NMVOC	0.210792	0.181344	2	100	100.020	0.000047	0.147	0.281	0.147	0.008%	0.000%
3B4giv	Manure management - Other poultry	NMVOC	0.615906	0.231677	2	100	100.020	0.000077	-0.033	0.360	-0.033	0.010%	0.000%
3B4h	Manure management - Other animals (please specify in the IIR)	NMVOC	0.453050	0.041890	2	100	100.020	0.000003	-0.224	0.065	-0.224	0.002%	0.000%
3De	Cultivated crops	NMVOC	0.676270	0.353640	2	100	100.020	0.000179	0.118	0.549	0.118	0.016%	0.000%
5A	Biological treatment of waste - Solid waste disposal on land	NMVOC	0.030775	0.024525	2	100	100.020	0.000001	0.018	0.038	0.018	0.001%	0.000%
5B1	Biological treatment of waste - Composting	NMVOC	0.001016	0.025904	2	100	100.020	0.000001	0.040	0.040	0.040	0.001%	0.000%
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities	NMVOC	0.000000	0.000125	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bi	Industrial waste incineration	NMVOC	0.000000	0.000063	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bii	Hazardous waste incineration	NMVOC	0.000000	0.001014	2	100	100.020	0.000000	0.002	0.002	0.002	0.000%	0.000%
5C1biii	Clinical waste incineration	NMVOC	0.000008	0.000000	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bv	Cremation	NMVOC	0.000000	0.000149	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C2	Open burning of waste	NMVOC	0.114645	0.024937	10	100	100.499	0.000001	-0.034	0.039	-0.034	0.005%	0.000%
5D1	Domestic wastewater handling	NMVOC	0.000000	0.018920	2	100	100.020	0.000001	0.029	0.029	0.029	0.001%	0.000%
5D2	Industrial wastewater handling	NMVOC	0.000000	0.004258	2	100	100.020	0.000000	0.007	0.007	0.007	0.000%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
5E	Other waste (please specify in the IIR)	NMVOC	0.000000	0.009526	2	100	100.020	0.000000	0.015	0.015	0.015	0.000%	0.000%
		Total	64.443543	26.451631				0.039749					0.635%
					% uncertainty in total inventory (%)			19.937			Trend uncertainty (%):		7.972

NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	SOx (SO2)	233.784455	12.482458	2	10	10.198	0.007537	0.070	4.474	0.007	0.127%	0.000%
1A1c	Manufacture of solid fuels and other energy industries	SOx (SO2)	1.522813	1.525805	2	10	10.198	0.000113	0.518	0.547	0.052	0.015%	0.000%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	SOx (SO2)	0.000000	0.000024	2	10	10.198	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	SOx (SO2)	2.998288	0.006103	2	10	10.198	0.000000	-0.054	0.002	-0.005	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	SOx (SO2)	1.855618	0.045702	2	10	10.198	0.000000	-0.019	0.016	-0.002	0.000%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	SOx (SO2)	4.729642	0.063124	2	10	10.198	0.000000	-0.066	0.023	-0.007	0.001%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	SOx (SO2)	12.293968	0.102215	2	10	10.198	0.000001	-0.195	0.037	-0.019	0.001%	0.000%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	SOx (SO2)	0.122000	0.000402	2	50	50.040	0.000000	-0.002	0.000	-0.001	0.000%	0.000%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	SOx (SO2)	7.510822	0.073879	2	10	10.198	0.000000	-0.115	0.026	-0.011	0.001%	0.000%
1A3ai(i)	International aviation LTO (civil)	SOx (SO2)	0.005264	0.006016	2	30	30.067	0.000000	0.002	0.002	0.001	0.000%	0.000%



	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3aii(i)	Domestic aviation LTO (civil)	SOx (SO2)	0.000255	0.000467	2	30	30.067	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3bi	Road transport: Passenger cars	SOx (SO2)	0.917025	0.004734	2	20	20.100	0.000000	-0.016	0.002	-0.003	0.000%	0.000%
1A3bii	Road transport: Light duty vehicles	SOx (SO2)	0.322365	0.001151	2	20	20.100	0.000000	-0.006	0.000	-0.001	0.000%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	SOx (SO2)	1.972770	0.002044	2	20	20.100	0.000000	-0.036	0.001	-0.007	0.000%	0.000%
1A3biv	Road transport: Mopeds & motorcycles	SOx (SO2)	0.000500	0.000027	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3c	Railways	SOx (SO2)	0.567100	0.000250	2	50	50.040	0.000000	-0.011	0.000	-0.005	0.000%	0.000%
1A3di(ii)	International inland waterways	SOx (SO2)	0.000000	0.000000	0	0	0.000	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3dii	National navigation (shipping)	SOx (SO2)	0.070000	0.011490	2	50	50.040	0.000000	0.003	0.004	0.001	0.000%	0.000%
1A4ai	Commercial/Institutional: Stationary	SOx (SO2)	1.246388	0.107616	2	10	10.198	0.000001	0.015	0.039	0.002	0.001%	0.000%
1A4aii	Commercial/Institutional: Mobile	SOx (SO2)	0.056500	0.000058	2	20	20.100	0.000000	-0.001	0.000	0.000	0.000%	0.000%
1A4bi	Residential: Stationary	SOx (SO2)	6.137650	0.095629	50	10	50.990	0.000011	-0.081	0.034	-0.008	0.024%	0.000%
1A4bii	Residential: Household and gardening (mobile)	SOx (SO2)	0.002180	0.000039	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	SOx (SO2)	1.825276	0.097717	2	10	10.198	0.000000	0.001	0.035	0.000	0.001%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	SOx (SO2)	0.922228	0.001100	2	50	50.040	0.000000	-0.017	0.000	-0.008	0.000%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	SOx (SO2)	0.109772	0.001120	2	50	50.040	0.000000	-0.002	0.000	-0.001	0.000%	0.000%
1B1c	Other fugitive emissions from solid fuels	SOx (SO2)	0.042566	0.020803	2	20	20.100	0.000000	0.007	0.007	0.001	0.000%	0.000%
1B2aiv	Fugitive emissions oil: Refining and storage	SOx (SO2)	0.000000	0.000539	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M	
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions	
1B2c	Venting and flaring (oil, gas, combined oil and gas)	SOx (SO2)	0.000000	0.000025	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%	
2A5a	Quarrying and mining of minerals other than coal	SOx (SO2)	0.000000	0.000248	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%	
2C1	Iron and steel production	SOx (SO2)	0.000288	0.000000	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%	
2C5	Lead production	SOx (SO2)	0.000000	0.000048	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%	
2C7c	Other metal production (please specify in the IIR)	SOx (SO2)	0.000000	0.000002	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%	
2G	Other product use (please specify in the IIR)	SOx (SO2)	0.000008	0.001483	5	50	50.249	0.000000	0.001	0.001	0.000	0.000%	0.000%	
2H2	Food and beverages industry	SOx (SO2)	0.000000	0.000004	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities	SOx (SO2)	0.000000	0.008375	2	50	50.040	0.000000	0.003	0.003	0.002	0.000%	0.000%	
5C1bi	Industrial waste incineration	SOx (SO2)	0.000000	0.000120	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5C1bii	Hazardous waste incineration	SOx (SO2)	0.000000	0.000282	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5C1biii	Clinical waste incineration	SOx (SO2)	0.000013	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5C1bv	Cremation	SOx (SO2)	0.000000	0.001291	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5C2	Open burning of waste	SOx (SO2)	0.003822	0.000831	10	50	50.990	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5E	Other waste (please specify in the IIR)	SOx (SO2)	0.000000	0.000011	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%	
Total			279.019576	14.663231				0.007663						0.0002%
% uncertainty in total inventory (%)								8.754	Trend uncertainty (%):				0.143	

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	NH3	0.016813	0.004015	2	10	10.198	0.000	-0.016	0.018	-0.002	0.0005%	0.0000%
1A1c	Manufacture of solid fuels and other energy industries	NH3	0.048454	0.227169	2	50	50.040	0.000	0.915	1.013	0.458	0.0287%	0.0021%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	NH3	0.000000	0.000003	2	10	10.198	0.000	0.000	0.000	0.000	0.0000%	0.0000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	NH3	0.001240	0.000052	2	10	10.198	0.000	-0.002	0.000	0.000	0.0000%	0.0000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	NH3	0.000310	0.000279	2	10	10.198	0.000	0.001	0.001	0.000	0.0000%	0.0000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	NH3	0.001573	0.000239	2	10	10.198	0.000	-0.002	0.001	0.000	0.0000%	0.0000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	NH3	0.001549	0.000195	2	10	10.198	0.000	-0.002	0.001	0.000	0.0000%	0.0000%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	NH3	0.000101	0.000160	2	50	50.040	0.000	0.001	0.001	0.000	0.0000%	0.0000%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	NH3	0.002494	0.000342	2	10	10.198	0.000	-0.004	0.002	0.000	0.0000%	0.0000%
1A3bi	Road transport: Passenger cars	NH3	0.011017	0.078498	2	20	20.100	0.000	0.328	0.350	0.066	0.0099%	0.0000%
1A3bii	Road transport: Light duty vehicles	NH3	0.001072	0.006956	2	20	20.100	0.000	0.029	0.031	0.006	0.0009%	0.0000%
1A3biii	Road transport: Heavy duty vehicles and buses	NH3	0.003920	0.007256	2	20	20.100	0.000	0.024	0.032	0.005	0.0009%	0.0000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3biv	Road transport: Mopeds & motorcycles	NH3	0.000014	0.000146	2	20	20.100	0.000	0.001	0.001	0.000	0.0000%	0.0000%
1A3c	Railways	NH3	0.000460	0.000125	2	50	50.040	0.000	0.000	0.001	0.000	0.0000%	0.0000%
1A4ai	Commercial/Institutional: Stationary	NH3	0.000998	0.000956	2	10	10.198	0.000	0.002	0.004	0.000	0.0001%	0.0000%
1A4aii	Commercial/Institutional: Mobile	NH3	0.000043	0.000050	2	50	50.040	0.000	0.000	0.000	0.000	0.0000%	0.0000%
1A4bi	Residential: Stationary	NH3	0.031254	0.062332	50	10	50.990	0.000	0.215	0.278	0.021	0.1966%	0.0004%
1A4bii	Residential: Household and gardening (mobile)	NH3	0.000003	0.000020	2	50	50.040	0.000	0.000	0.000	0.000	0.0000%	0.0000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	NH3	0.000486	0.000193	2	10	10.198	0.000	0.000	0.001	0.000	0.0000%	0.0000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	NH3	0.000706	0.000400	2	50	50.040	0.000	0.000	0.002	0.000	0.0001%	0.0000%
1B1c	Other fugitive emissions from solid fuels	NH3	0.033067	0.009548	2	50	50.040	0.000	-0.024	0.043	-0.012	0.0012%	0.0000%
1B2aiv	Fugitive emissions oil: Refining and storage	NH3	0.000000	0.000105	2	50	50.040	0.000	0.000	0.000	0.000	0.0000%	0.0000%
2A5a	Quarrying and mining of minerals other than coal	NH3	0.000000	0.000884	2	50	50.040	0.000	0.004	0.004	0.002	0.0001%	0.0000%
2B1	Ammonia production	NH3	0.021809	0.000000	2	20	20.100	0.000	-0.044	0.000	-0.009	0.0000%	0.0000%
2B10a	Chemical industry: Other (please specify in the IIR)	NH3	0.348191	0.000024	2	20	20.100	0.000	-0.704	0.000	-0.141	0.0000%	0.0002%
2B10b	Storage, handling and transport of chemical products (please specify in the IIR)	NH3	0.000000	0.004339	2	20	20.100	0.000	0.019	0.019	0.004	0.0005%	0.0000%
2C7c	Other metal production (please specify in the IIR)	NH3	0.160000	0.061167	2	200	200.010	0.000	-0.051	0.273	-0.102	0.0077%	0.0001%
2D3g	Chemical products	NH3	0.000000	0.001528	2	100	100.020	0.000	0.007	0.007	0.007	0.0002%	0.0000%
2D3i	Other solvent use (please specify in the IIR)	NH3	0.000000	0.000006	5	100	100.125	0.000	0.000	0.000	0.000	0.0000%	0.0000%
2G	Other product use (please specify in the IIR)	NH3	0.017284	0.005765	5	50	50.249	0.000	-0.009	0.026	-0.005	0.0018%	0.0000%

NFR sector	A NFR name	B Pollutant	C 1990 emissions, kt	D 2022 emissions, kt	E Activity data uncertainty, %	F Emission factor uncertainty, %	G Combined uncertainty, %	H Contribution to Variance by Category in Year 2022	I Type A sensitivity, %	J Type B sensitivity, %	K Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	L Uncertainty in trend in national emissions introduced by activity data uncertainty	M Uncertainty in trend in national emissions introduced into the trend in total national emissions
2H2	Food and beverages industry	NH3	0.000000	0.000036	2	100	100.020	0.000	0.000	0.000	0.000	0.0000%	0.0000%
2L	Other production, consumption, storage, transportation or handling of bulk products (please specify in the IIR)	NH3	0.137000	0.005890	2	200	200.010	0.000	-0.251	0.026	-0.502	0.0007%	0.0025%
3B1a	Manure management - Dairy cattle	NH3	2.412581	2.959510	2	100	100.020	0.085	8.309	13.200	8.309	0.3734%	0.6917%
3B1b	Manure management - Non-dairy cattle	NH3	1.191034	0.786070	2	100	100.020	0.006	1.095	3.506	1.095	0.0992%	0.0121%
3B2	Manure management - Sheep	NH3	0.274720	0.105840	2	100	100.020	0.000	-0.084	0.472	-0.084	0.0134%	0.0001%
3B3	Manure management - Swine	NH3	2.421660	0.613670	2	100	100.020	0.004	-2.162	2.737	-2.162	0.0774%	0.0468%
3B4d	Manure management - Goats	NH3	0.005800	0.010760	2	100	100.020	0.000	0.036	0.048	0.036	0.0014%	0.0000%
3B4e	Manure management - Horses	NH3	0.066310	0.037220	2	100	100.020	0.000	0.032	0.166	0.032	0.0047%	0.0000%
3B4gi	Manure management - Laying hens	NH3	0.344352	0.060526	2	100	100.020	0.000	-0.427	0.270	-0.427	0.0076%	0.0018%
3B4gii	Manure management - Broilers	NH3	0.266969	0.211458	2	100	100.020	0.000	0.403	0.943	0.403	0.0267%	0.0016%
3B4giv	Manure management - Other poultry	NH3	0.487779	0.174253	2	100	100.020	0.000	-0.210	0.777	-0.210	0.0220%	0.0004%
3B4h	Manure management - Other animals (please specify in the IIR)	NH3	0.321500	0.020240	2	100	100.020	0.000	-0.560	0.090	-0.560	0.0026%	0.0031%
3Da1	Inorganic N-fertilizers (includes also urea application)	NH3	5.192319	2.385033	2	100	100.020	0.055	0.129	10.638	0.129	0.3009%	0.0011%
3Da2a	Animal manure applied to soils	NH3	7.198192	1.728612	2	100	100.020	0.029	-6.836	7.710	-6.836	0.2181%	0.4678%
3Da2b	Sewage sludge applied to soils	NH3	0.010681	0.008998	2	100	100.020	0.000	0.019	0.040	0.019	0.0011%	0.0000%
3Da2c	Other organic fertilisers applied to soils (including compost)	NH3	0.003965	0.102976	2	100	100.020	0.000	0.451	0.459	0.451	0.0130%	0.0020%
3Da3	Urine and dung deposited by grazing animals	NH3	1.012567	0.280872	2	100	100.020	0.001	-0.796	1.253	-0.796	0.0354%	0.0064%
5B1	Biological treatment of waste - Composting	NH3	0.001626	0.041470	2	50	50.040	0.000	0.182	0.185	0.091	0.0052%	0.0001%

A		B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities	NH3	0.000000	0.000120	2	50	50.040	0.000	0.001	0.001	0.000	0.0000%	0.0000%
5C1bi	Industrial waste incineration	NH3	0.000000	0.000018	2	50	50.040	0.000	0.000	0.000	0.000	0.0000%	0.0000%
5D1	Domestic wastewater handling	NH3	0.367957	0.164839	2	50	50.040	0.000	-0.009	0.735	-0.005	0.0208%	0.0000%
5D2	Industrial wastewater handling	NH3	0.000000	0.001710	2	50	50.040	0.000	0.008	0.008	0.004	0.0002%	0.0000%
5E	Other waste (please specify in the IIR)	NH3	0.000000	0.000265	2	50	50.040	0.000	0.001	0.001	0.001	0.0000%	0.0000%
Total			22.419870	10.173139				0.180				1.2405%	
% uncertainty in total inventory (%)								42.456	Trend uncertainty (%):			11.138	

NFR sector	A NFR name	B Pollutant	C 1990 emissions, kt	D 2022 emissions, kt	E Activity data uncertainty, %	F Emission factor uncertainty, %	G Combined uncertainty, %	H Contribution to Variance by Category in Year 2022	I Type A sensitivity, %	J Type B sensitivity, %	K Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	L Uncertainty in trend in national emissions introduced by activity data uncertainty	M Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	PM2.5	4.555258	0.546144	2	30	30.067	0.001118	-16.133	5.363	-4.840	0.152%	0.234%
1A1c	Manufacture of solid fuels and other energy industries	PM2.5	0.142316	0.134307	2	30	30.067	0.000068	0.645	1.319	0.193	0.037%	0.000%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	PM2.5	0.000073	0.000001	2	30	30.067	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	PM2.5	0.003846	0.000266	2	30	30.067	0.000000	-0.016	0.003	-0.005	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	PM2.5	0.054379	0.008554	2	30	30.067	0.000000	-0.173	0.084	-0.052	0.002%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	PM2.5	0.015922	0.001984	2	30	30.067	0.000000	-0.056	0.019	-0.017	0.001%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	PM2.5	0.132986	0.002542	2	30	30.067	0.000000	-0.605	0.025	-0.181	0.001%	0.000%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	PM2.5	0.041226	0.009924	2	50	50.040	0.000001	-0.098	0.097	-0.049	0.003%	0.000%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	PM2.5	0.183456	0.015293	2	30	30.067	0.000001	-0.718	0.150	-0.215	0.004%	0.000%
1A3ai(i)	International aviation LTO (civil)	PM2.5	0.000304	0.000461	2	30	30.067	0.000000	0.003	0.005	0.001	0.000%	0.000%
1A3aii(i)	Domestic aviation LTO (civil)	PM2.5	0.000010	0.000016	2	30	30.067	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3bi	Road transport: Passenger cars	PM2.5	0.070372	0.099373	2	20	20.100	0.000017	0.643	0.976	0.129	0.028%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3bii	Road transport: Light duty vehicles	PM2.5	0.123383	0.021744	2	20	20.100	0.000001	-0.371	0.214	-0.074	0.006%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	PM2.5	0.212189	0.027006	2	20	20.100	0.000001	-0.739	0.265	-0.148	0.008%	0.000%
1A3biv	Road transport: Mopeds & motorcycles	PM2.5	0.000318	0.000621	2	20	20.100	0.000000	0.005	0.006	0.001	0.000%	0.000%
1A3bvi	Road transport: Automobile tyre and brake wear	PM2.5	0.072302	0.137187	2	20	20.100	0.000032	1.005	1.347	0.201	0.038%	0.000%
1A3bvii	Road transport: Automobile road abrasion	PM2.5	0.298449	0.575317	2	20	20.100	0.000555	4.235	5.650	0.847	0.160%	0.007%
1A3c	Railways	PM2.5	0.055874	0.015960	2	100	100.020	0.000011	-0.108	0.157	-0.108	0.004%	0.000%
1A3dii	National navigation (shipping)	PM2.5	0.009800	0.008043	2	100	100.020	0.000003	0.033	0.079	0.033	0.002%	0.000%
1A4ai	Commercial/Institutional: Stationary	PM2.5	0.065064	0.036242	2	30	30.067	0.000005	0.048	0.356	0.014	0.010%	0.000%
1A4aii	Commercial/Institutional: Mobile	PM2.5	0.025495	0.003859	2	50	50.040	0.000000	-0.083	0.038	-0.041	0.001%	0.000%
1A4bi	Residential: Stationary	PM2.5	2.842747	2.048854	50	30	58.310	0.059204	6.641	20.120	1.992	14.227%	2.064%
1A4bii	Residential: Household and gardening (mobile)	PM2.5	0.010540	0.007300	2	50	50.040	0.000001	0.022	0.072	0.011	0.002%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	PM2.5	0.025580	0.017988	2	30	30.067	0.000001	0.056	0.177	0.017	0.005%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	PM2.5	0.056090	0.026600	2	50	50.040	0.000007	-0.004	0.261	-0.002	0.007%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	PM2.5	0.003036	0.000784	2	100	100.020	0.000000	-0.007	0.008	-0.007	0.000%	0.000%
1B1c	Other fugitive emissions from solid fuels	PM2.5	0.288805	0.478780	2	100	100.020	0.009512	3.333	4.702	3.333	0.133%	0.111%
1B2aiv	Fugitive emissions oil: Refining and storage	PM2.5	0.000000	0.008576	2	100	100.020	0.000003	0.084	0.084	0.084	0.002%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	PM2.5	0.000000	0.000013	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
2A1	Cement production	PM2.5	0.007495	0.003030	2	50	50.040	0.000000	-0.006	0.030	-0.003	0.001%	0.000%



	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
2A2	Lime production	PM2.5	0.000000	0.000562	2	50	50.040	0.000000	0.006	0.006	0.003	0.000%	0.000%
2A3	Glass production	PM2.5	0.000000	0.000371	2	50	50.040	0.000000	0.004	0.004	0.002	0.000%	0.000%
2A5a	Quarrying and mining of minerals other than coal	PM2.5	0.000000	0.005018	2	100	100.020	0.000001	0.049	0.049	0.049	0.001%	0.000%
2A5b	Construction and demolition	PM2.5	0.084937	0.140850	50	100	111.803	0.001029	0.981	1.383	0.981	0.978%	0.019%
2A5c	Storage, handling and transport of mineral products	PM2.5	0.000000	0.002198	2	100	100.020	0.000000	0.022	0.022	0.022	0.001%	0.000%
2A6	Other mineral products (please specify in the IIR)	PM2.5	0.070951	0.000000	2	50	50.040	0.000000	-0.336	0.000	-0.168	0.000%	0.000%
2B10a	Chemical industry: Other (please specify in the IIR)	PM2.5	0.089237	0.001445	2	50	50.040	0.000000	-0.408	0.014	-0.204	0.000%	0.000%
2C1	Iron and steel production	PM2.5	0.000118	0.000026	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C3	Aluminium production	PM2.5	0.000000	0.000021	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C5	Lead production	PM2.5	0.000015	0.000015	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C6	Zinc production	PM2.5	0.000000	0.000065	2	50	50.040	0.000000	0.001	0.001	0.000	0.000%	0.000%
2C7c	Other metal production (please specify in the IIR)	PM2.5	0.018764	0.038891	2	50	50.040	0.000016	0.293	0.382	0.147	0.011%	0.000%
2D3b	Road paving with asphalt	PM2.5	0.000670	0.001420	2	100	100.020	0.000000	0.011	0.014	0.011	0.000%	0.000%
2G	Other product use (please specify in the IIR)	PM2.5	0.056050	0.062480	5	50	50.249	0.000041	0.348	0.614	0.174	0.043%	0.000%
2H1	Pulp and paper industry	PM2.5	0.084000	0.022452	2	50	50.040	0.000005	-0.177	0.220	-0.089	0.006%	0.000%
2H2	Food and beverages industry	PM2.5	0.001100	0.007295	2	100	100.020	0.000002	0.066	0.072	0.066	0.002%	0.000%
2I	Wood processing	PM2.5	0.000000	0.066469	2	100	100.020	0.000183	0.653	0.653	0.653	0.018%	0.004%
2L	Other production, consumption, storage, transportation or handling of bulk products (please specify in the IIR)	PM2.5	0.000000	0.008205	2	100	100.020	0.000003	0.081	0.081	0.081	0.002%	0.000%
3B1a	Manure management - Dairy cattle	PM2.5	0.044440	0.033860	2	100	100.020	0.000048	0.122	0.333	0.122	0.009%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
3B1b	Manure management - Non-dairy cattle	PM2.5	0.012580	0.019970	2	100	100.020	0.000017	0.137	0.196	0.137	0.006%	0.000%
3B2	Manure management - Sheep	PM2.5	0.000670	0.001270	2	100	100.020	0.000000	0.009	0.012	0.009	0.000%	0.000%
3B3	Manure management - Swine	PM2.5	0.001640	0.001280	2	100	100.020	0.000000	0.005	0.013	0.005	0.000%	0.000%
3B4d	Manure management - Goats	PM2.5	0.000080	0.000080	2	100	100.020	0.000000	0.000	0.001	0.000	0.000%	0.000%
3B4e	Manure management - Horses	PM2.5	0.000590	0.000700	2	100	100.020	0.000000	0.004	0.007	0.004	0.000%	0.000%
3B4gi	Manure management - Laying hens	PM2.5	0.002171	0.001667	2	100	100.020	0.000000	0.006	0.016	0.006	0.000%	0.000%
3B4gii	Manure management - Broilers	PM2.5	0.001233	0.003359	2	100	100.020	0.000000	0.027	0.033	0.027	0.001%	0.000%
3B4giv	Manure management - Other poultry	PM2.5	0.006270	0.009476	2	100	100.020	0.000004	0.063	0.093	0.063	0.003%	0.000%
3B4h	Manure management - Other animals (please specify in the IIR)	PM2.5	0.000440	0.000760	2	100	100.020	0.000000	0.005	0.007	0.005	0.000%	0.000%
3Dc	Farm-level agricultural operations including storage, handling and transport of agricultural products	PM2.5	0.118806	0.123197	2	100	100.020	0.000630	0.647	1.210	0.647	0.034%	0.004%
5A	Biological treatment of waste - Solid waste disposal on land	PM2.5	0.000298	0.000627	2	100	100.020	0.000000	0.005	0.006	0.005	0.000%	0.000%
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities	PM2.5	0.000000	0.000023	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bi	Industrial waste incineration	PM2.5	0.000000	0.000008	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bii	Hazardous waste incineration	PM2.5	0.000038	0.000023	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1biii	Clinical waste incineration	PM2.5	0.000007	0.000000	0	0	0.000	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bv	Cremation	PM2.5	0.000106	0.000396	2	100	100.020	0.000000	0.003	0.004	0.003	0.000%	0.000%
5C2	Open burning of waste	PM2.5	0.091293	0.013299	10	100	100.499	0.000007	-0.302	0.131	-0.302	0.018%	0.001%
5E	Other waste (please specify in the IIR)	PM2.5	0.199544	0.105390	2	100	100.020	0.000461	0.090	1.035	0.090	0.029%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
Total			10.183362	4.909938				0.072987				2.450%	
% uncertainty in total inventory (%)								27.016	Trend uncertainty (%):			15.651	

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	PM10	17.714106	0.874024	2	30	30.067	0.000850	-19.1607	3.2862	-5.7482	0.093%	0.331%
1A1c	Manufacture of solid fuels and other energy industries	PM10	0.305979	0.288760	2	30	30.067	0.000093	0.6957	1.0857	0.2087	0.031%	0.000%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	PM10	0.000081	0.000001	2	30	30.067	0.000000	-0.0001	0.0000	0.0000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	PM10	0.004284	0.000288	2	30	30.067	0.000000	-0.0044	0.0011	-0.0013	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	PM10	0.060760	0.011281	2	30	30.067	0.000000	-0.0350	0.0424	-0.0105	0.001%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	PM10	0.018516	0.002450	2	30	30.067	0.000000	-0.0144	0.0092	-0.0043	0.000%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	PM10	0.217034	0.002864	2	30	30.067	0.000000	-0.2658	0.0108	-0.0797	0.000%	0.000%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	PM10	0.041226	0.009924	2	50	50.040	0.000000	-0.0152	0.0373	-0.0076	0.001%	0.000%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	PM10	0.206010	0.020021	2	30	30.067	0.000000	-0.1872	0.0753	-0.0562	0.002%	0.000%
1A3ai(i)	International aviation LTO (civil)	PM10	0.000304	0.000461	2	30	30.067	0.000000	0.0013	0.0017	0.0004	0.000%	0.000%
1A3aii(i)	Domestic aviation LTO (civil)	PM10	0.000010	0.000016	2	30	30.067	0.000000	0.0000	0.0001	0.0000	0.000%	0.000%
1A3bi	Road transport: Passenger cars	PM10	0.070372	0.099373	2	20	20.100	0.000005	0.2839	0.3736	0.0568	0.011%	0.000%

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NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3bii	Road transport: Light duty vehicles	PM10	0.123383	0.021744	2	20	20.100	0.000000	-0.0755	0.0818	-0.0151	0.002%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	PM10	0.212189	0.027006	2	20	20.100	0.000000	-0.1689	0.1015	-0.0338	0.003%	0.000%
1A3biv	Road transport: Mopeds & motorcycles	PM10	0.000318	0.000621	2	20	20.100	0.000000	0.0019	0.0023	0.0004	0.000%	0.000%
1A3bvi	Road transport: Automobile tyre and brake wear	PM10	0.141821	0.266944	2	20	20.100	0.000035	0.8229	1.0037	0.1646	0.028%	0.000%
1A3bvii	Road transport: Automobile road abrasion	PM10	0.552682	1.065399	2	20	20.100	0.000564	3.3007	4.0057	0.6601	0.113%	0.004%
1A3c	Railways	PM10	0.060228	0.017210	2	100	100.020	0.000004	-0.0120	0.0647	-0.0120	0.002%	0.000%
1A3dii	National navigation (shipping)	PM10	0.010500	0.008618	2	100	100.020	0.000001	0.0190	0.0324	0.0190	0.001%	0.000%
1A4ai	Commercial/Institutional: Stationary	PM10	0.072226	0.043527	2	30	30.067	0.000002	0.0716	0.1637	0.0215	0.005%	0.000%
1A4aii	Commercial/Institutional: Mobile	PM10	0.025495	0.003859	2	50	50.040	0.000000	-0.0180	0.0145	-0.0090	0.000%	0.000%
1A4bi	Residential: Stationary	PM10	2.965814	2.149813	50	30	58.310	0.019336	4.2986	8.0830	1.2896	5.716%	0.343%
1A4bii	Residential: Household and gardening (mobile)	PM10	0.010540	0.007300	2	50	50.040	0.000000	0.0140	0.0274	0.0070	0.001%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	PM10	0.026972	0.019790	2	30	30.067	0.000000	0.0400	0.0744	0.0120	0.002%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	PM10	0.056090	0.026600	2	50	50.040	0.000002	0.0285	0.1000	0.0143	0.003%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	PM10	0.003232	0.000840	2	100	100.020	0.000000	-0.0010	0.0032	-0.0010	0.000%	0.000%
1B1c	Other fugitive emissions from solid fuels	PM10	0.298111	0.492913	2	100	100.020	0.002991	1.4732	1.8533	1.4732	0.052%	0.022%
1B2aiv	Fugitive emissions oil: Refining and storage	PM10	0.000000	0.019733	2	100	100.020	0.000005	0.0742	0.0742	0.0742	0.002%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	PM10	0.000000	0.000016	2	100	100.020	0.000000	0.0001	0.0001	0.0001	0.000%	0.000%
2A1	Cement production	PM10	0.013491	0.005453	2	50	50.040	0.000000	0.0033	0.0205	0.0017	0.001%	0.000%
2A2	Lime production	PM10	0.000000	0.002805	2	100	100.020	0.000000	0.0105	0.0105	0.0105	0.000%	0.000%

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NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
2A3	Glass production	PM10	0.000000	0.001194	2	100	100.020	0.000000	0.0045	0.0045	0.0045	0.000%	0.000%
2A5a	Quarrying and mining of minerals other than coal	PM10	0.000000	0.048907	2	100	100.020	0.000029	0.1839	0.1839	0.1839	0.005%	0.000%
2A5b	Construction and demolition	PM10	0.850777	1.473804	50	100	111.803	0.033410	4.4556	5.5413	4.4556	3.918%	0.352%
2A5c	Storage, handling and transport of mineral products	PM10	0.000000	0.011614	2	100	100.020	0.000002	0.0437	0.0437	0.0437	0.001%	0.000%
2A6	Other mineral products (please specify in the IIR)	PM10	0.212853	0.000000	2	100	100.020	0.000000	-0.2712	0.0000	-0.2712	0.000%	0.001%
2B10a	Chemical industry: Other (please specify in the IIR)	PM10	0.162577	0.002631	2	50	50.040	0.000000	-0.1973	0.0099	-0.0986	0.000%	0.000%
2C1	Iron and steel production	PM10	0.000178	0.000041	2	50	50.040	0.000000	-0.0001	0.0002	0.0000	0.000%	0.000%
2C3	Aluminium production	PM10	0.000000	0.000053	2	100	100.020	0.000000	0.0002	0.0002	0.0002	0.000%	0.000%
2C5	Lead production	PM10	0.000030	0.000031	2	50	50.040	0.000000	0.0001	0.0001	0.0000	0.000%	0.000%
2C6	Zinc production	PM10	0.000000	0.000073	2	100	100.020	0.000000	0.0003	0.0003	0.0003	0.000%	0.000%
2C7c	Other metal production (please specify in the IIR)	PM10	0.024108	0.060216	2	50	50.040	0.000011	0.1957	0.2264	0.0978	0.006%	0.000%
2D3b	Road paving with asphalt	PM10	0.013340	0.028406	2	100	100.020	0.000010	0.0898	0.1068	0.0898	0.003%	0.000%
2D3d	Coating applications	PM10	0.000000	0.000006	2	100	100.020	0.000000	0.0000	0.0000	0.0000	0.000%	0.000%
2G	Other product use (please specify in the IIR)	PM10	0.059360	0.086035	5	50	50.249	0.000023	0.2478	0.3235	0.1239	0.023%	0.000%
2H1	Pulp and paper industry	PM10	0.112000	0.029966	2	50	50.040	0.000003	-0.0301	0.1127	-0.0150	0.003%	0.000%
2H2	Food and beverages industry	PM10	0.003300	0.019770	2	100	100.020	0.000005	0.0701	0.0743	0.0701	0.002%	0.000%
2I	Wood processing	PM10	0.000000	0.196772	2	100	100.020	0.000477	0.7398	0.7398	0.7398	0.021%	0.005%
2L	Other production, consumption, storage, transportation or handling of bulk products (please specify in the IIR)	PM10	0.000000	0.035644	2	100	100.020	0.000016	0.1340	0.1340	0.1340	0.004%	0.000%
3B1a	Manure management - Dairy cattle	PM10	0.068280	0.052030	2	100	100.020	0.000033	0.1086	0.1956	0.1086	0.006%	0.000%

A		B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
3B1b	Manure management - Non-dairy cattle	PM10	0.019390	0.030560	2	100	100.020	0.000011	0.0902	0.1149	0.0902	0.003%	0.000%
3B2	Manure management - Sheep	PM10	0.002000	0.003790	2	100	100.020	0.000000	0.0117	0.0142	0.0117	0.000%	0.000%
3B3	Manure management - Swine	PM10	0.035940	0.028640	2	100	100.020	0.000010	0.0619	0.1077	0.0619	0.003%	0.000%
3B4d	Manure management - Goats	PM10	0.000230	0.000240	2	100	100.020	0.000000	0.0006	0.0009	0.0006	0.000%	0.000%
3B4e	Manure management - Horses	PM10	0.000930	0.001100	2	100	100.020	0.000000	0.0030	0.0041	0.0030	0.000%	0.000%
3B4gi	Manure management - Laying hens	PM10	0.028940	0.022220	2	100	100.020	0.000006	0.0467	0.0835	0.0467	0.002%	0.000%
3B4gii	Manure management - Broilers	PM10	0.012334	0.033583	2	100	100.020	0.000014	0.1105	0.1263	0.1105	0.004%	0.000%
3B4giv	Manure management - Other poultry	PM10	0.043890	0.066329	2	100	100.020	0.000054	0.1935	0.2494	0.1935	0.007%	0.000%
3B4h	Manure management - Other animals (please specify in the IIR)	PM10	0.000880	0.001190	2	100	100.020	0.000000	0.0034	0.0045	0.0034	0.000%	0.000%
3Dc	Farm-level agricultural operations including storage, handling and transport of agricultural products	PM10	1.440706	1.167013	2	100	100.020	0.016765	2.5504	4.3878	2.5504	0.124%	0.065%
5A	Biological treatment of waste - Solid waste disposal on land	PM10	0.001975	0.004163	2	100	100.020	0.000000	0.0131	0.0157	0.0131	0.000%	0.000%
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities	PM10	0.000000	0.000023	2	100	100.020	0.000000	0.0001	0.0001	0.0001	0.000%	0.000%
5C1bi	Industrial waste incineration	PM10	0.000000	0.000013	2	100	100.020	0.000000	0.0000	0.0000	0.0000	0.000%	0.000%
5C1bii	Hazardous waste incineration	PM10	0.000066	0.000041	2	100	100.020	0.000000	0.0001	0.0002	0.0001	0.000%	0.000%
5C1biii	Clinical waste incineration	PM10	0.000010	0.000000	0	0	0.000	0.000000	0.0000	0.0000	0.0000	0.000%	0.000%
5C1bv	Cremation	PM10	0.000106	0.000396	2	100	100.020	0.000000	0.0014	0.0015	0.0014	0.000%	0.000%
5C2	Open burning of waste	PM10	0.091293	0.013299	10	100	100.499	0.000002	-0.0663	0.0500	-0.0663	0.007%	0.000%
5E	Other waste (please specify in the IIR)	PM10	0.199544	0.105391	2	100	100.020	0.000137	0.1419	0.3963	0.1419	0.011%	0.000%
Total			26.596810	9.014838				0.074908				1.126%	
% uncertainty in total inventory (%)								27.369	Trend uncertainty (%):			10.613	





	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	TSP	161.579063	1.446960	2	15	15.133	0.000188	-3.092	0.545	-0.464	0.015%	0.002%
1A1c	Manufacture of solid fuels and other energy industries	TSP	0.570818	0.335768	2	15	15.133	0.000010	0.113	0.126	0.017	0.004%	0.000%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	TSP	0.000000	0.000001	2	15	15.133	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	TSP	0.028289	0.000353	2	15	15.133	0.000000	-0.001	0.000	0.000	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	TSP	0.013286	0.013565	2	15	15.133	0.000000	0.005	0.005	0.001	0.000%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	TSP	0.066141	0.003197	2	15	15.133	0.000000	0.000	0.001	0.000	0.000%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	TSP	82.681332	0.003874	2	15	15.133	0.000000	-1.863	0.001	-0.279	0.000%	0.001%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	TSP	0.051251	0.009924	2	50	50.040	0.000000	0.003	0.004	0.001	0.000%	0.000%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	TSP	0.337163	0.024003	2	15	15.133	0.000000	0.001	0.009	0.000	0.000%	0.000%
1A3ai(i)	International aviation LTO (civil)	TSP	0.000375	0.000461	2	30	30.067	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3aii(i)	Domestic aviation LTO (civil)	TSP	0.000017	0.000016	2	30	30.067	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3bi	Road transport: Passenger cars	TSP	0.130631	0.099373	2	20	20.100	0.000002	0.034	0.037	0.007	0.001%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3bii	Road transport: Light duty vehicles	TSP	0.140913	0.021744	2	20	20.100	0.000000	0.005	0.008	0.001	0.000%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	TSP	0.271676	0.027006	2	20	20.100	0.000000	0.004	0.010	0.001	0.000%	0.000%
1A3biv	Road transport: Mopeds & motorcycles	TSP	0.000136	0.000621	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3bvi	Road transport: Automobile tyre and brake wear	TSP	0.270597	0.338623	2	20	20.100	0.000018	0.121	0.127	0.024	0.004%	0.000%
1A3bvii	Road transport: Automobile road abrasion	TSP	1.531644	2.130801	2	20	20.100	0.000719	0.767	0.802	0.153	0.023%	0.000%
1A3c	Railways	TSP	0.109803	0.025692	2	100	100.020	0.000003	0.007	0.010	0.007	0.000%	0.000%
1A3dii	National navigation (shipping)	TSP	0.010500	0.008618	2	100	100.020	0.000000	0.003	0.003	0.003	0.000%	0.000%
1A4ai	Commercial/Institutional: Stationary	TSP	0.283625	0.046680	2	15	15.133	0.000000	0.011	0.018	0.002	0.000%	0.000%
1A4aii	Commercial/Institutional: Mobile	TSP	0.033612	0.003859	2	50	50.040	0.000000	0.001	0.001	0.000	0.000%	0.000%
1A4bi	Residential: Stationary	TSP	4.206361	2.301484	50	15	52.202	0.005658	0.771	0.866	0.116	0.612%	0.004%
1A4bii	Residential: Household and gardening (mobile)	TSP	0.002301	0.007300	2	50	50.040	0.000000	0.003	0.003	0.001	0.000%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	TSP	0.095674	0.021133	2	15	15.133	0.000000	0.006	0.008	0.001	0.000%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	TSP	0.418338	0.026600	2	50	50.040	0.000001	0.001	0.010	0.000	0.000%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	TSP	0.023237	0.000840	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
1B1c	Other fugitive emissions from solid fuels	TSP	0.816664	0.940368	2	100	100.020	0.003468	0.335	0.354	0.335	0.010%	0.001%
1B2aiv	Fugitive emissions oil: Refining and storage	TSP	0.000000	0.031880	2	100	100.020	0.000004	0.012	0.012	0.012	0.000%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	TSP	0.000000	0.000019	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
2A1	Cement production	TSP	0.000000	0.006059	2	50	50.040	0.000000	0.002	0.002	0.001	0.000%	0.000%
2A2	Lime production	TSP	0.000000	0.007210	2	50	50.040	0.000000	0.003	0.003	0.001	0.000%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
2A3	Glass production	TSP	0.000000	0.002263	2	50	50.040	0.000000	0.001	0.001	0.000	0.000%	0.000%
2A5a	Quarrying and mining of minerals other than coal	TSP	0.000000	0.103830	2	100	100.020	0.000042	0.039	0.039	0.039	0.001%	0.000%
2A5b	Construction and demolition	TSP	7.077171	4.900453	50	100	111.803	0.117667	1.684	1.844	1.684	1.304%	0.045%
2A5c	Storage, handling and transport of mineral products	TSP	0.000000	0.026301	2	100	100.020	0.000003	0.010	0.010	0.010	0.000%	0.000%
2B10a	Chemical industry: Other (please specify in the IIR)	TSP	0.940000	0.008814	2	50	50.040	0.000000	-0.018	0.003	-0.009	0.000%	0.000%
2C1	Iron and steel production	TSP	0.001049	0.000052	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C2	Ferroalloys production	TSP	0.000000	0.000000	0	0	0.000	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C3	Aluminium production	TSP	0.000000	0.000075	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C5	Lead production	TSP	0.000000	0.000039	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C6	Zinc production	TSP	0.000000	0.000080	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C7c	Other metal production (please specify in the IIR)	TSP	0.000000	0.125875	2	50	50.040	0.000016	0.047	0.047	0.024	0.001%	0.000%
2D3b	Road paving with asphalt	TSP	0.256650	0.213046	2	100	100.020	0.000178	0.074	0.080	0.074	0.002%	0.000%
2D3d	Coating applications	TSP	0.000000	0.000256	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
2D3g	Chemical products	TSP	0.000000	0.001523	2	100	100.020	0.000000	0.001	0.001	0.001	0.000%	0.000%
2D3h	Printing	TSP	0.000000	0.000413	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
2D3i	Other solvent use (please specify in the IIR)	TSP	0.000000	0.009733	5	100	100.125	0.000000	0.004	0.004	0.004	0.000%	0.000%
2G	Other product use (please specify in the IIR)	TSP	0.135220	0.090900	5	50	50.249	0.000008	0.031	0.034	0.016	0.002%	0.000%
2H1	Pulp and paper industry	TSP	0.000000	0.044419	2	50	50.040	0.000002	0.017	0.017	0.008	0.000%	0.000%
2H2	Food and beverages industry	TSP	0.000000	0.053041	2	100	100.020	0.000011	0.020	0.020	0.020	0.001%	0.000%
2I	Wood processing	TSP	0.000000	0.508461	2	100	100.020	0.001014	0.191	0.191	0.191	0.005%	0.000%
2L	Other production, consumption, storage, transportation or	TSP	0.000000	0.076815	2	100	100.020	0.000023	0.029	0.029	0.029	0.001%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
	handling of bulk products (please specify in the IIR)												
3B1a	Manure management - Dairy cattle	TSP	0.320470	0.113960	2	100	100.020	0.000051	0.036	0.043	0.036	0.001%	0.000%
3B1b	Manure management - Non-dairy cattle	TSP	0.162620	0.066190	2	100	100.020	0.000017	0.021	0.025	0.021	0.001%	0.000%
3B2	Manure management - Sheep	TSP	0.022190	0.008840	2	100	100.020	0.000000	0.003	0.003	0.003	0.000%	0.000%
3B3	Manure management - Swine	TSP	0.664660	0.190150	2	100	100.020	0.000142	0.057	0.072	0.057	0.002%	0.000%
3B4d	Manure management - Goats	TSP	0.000300	0.000560	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
3B4e	Manure management - Horses	TSP	0.004130	0.002400	2	100	100.020	0.000000	0.001	0.001	0.001	0.000%	0.000%
3B4gi	Manure management - Laying hens	TSP	0.422557	0.105545	2	100	100.020	0.000044	0.030	0.040	0.030	0.001%	0.000%
3B4gii	Manure management - Broilers	TSP	0.078071	0.067165	2	100	100.020	0.000018	0.024	0.025	0.024	0.001%	0.000%
3B4giv	Manure management - Other poultry	TSP	0.176333	0.066329	2	100	100.020	0.000017	0.021	0.025	0.021	0.001%	0.000%
3B4h	Manure management - Other animals (please specify in the IIR)	TSP	0.005700	0.002590	2	100	100.020	0.000000	0.001	0.001	0.001	0.000%	0.000%
3Dc	Farm-level agricultural operations including storage, handling and transport of agricultural products	TSP	1.720624	1.167014	2	100	100.020	0.005341	0.400	0.439	0.400	0.012%	0.002%
5A	Biological treatment of waste - Solid waste disposal on land	TSP	0.004832	0.008800	2	100	100.020	0.000000	0.003	0.003	0.003	0.000%	0.000%
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities	TSP	0.000000	0.000023	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bi	Industrial waste incineration	TSP	0.000000	0.000019	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bii	Hazardous waste incineration	TSP	0.000000	0.000058	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1biii	Clinical waste incineration	TSP	0.000027	0.000000	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bv	Cremation	TSP	0.000000	0.000441	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C2	Open burning of waste	TSP	0.061144	0.013299	10	100	100.499	0.000001	0.004	0.005	0.004	0.001%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
5E	Other waste (please specify in the IIR)	TSP	0.000000	0.108344	2	100	100.020	0.000046	0.041	0.041	0.041	0.001%	0.000%
		Total	265.727195	15.972147				0.134712					0.056%
					% uncertainty in total inventory (%)			36.703			Trend uncertainty (%):		2.360

NFR sector	A NFR name	B Pollutant	C 1990 emissions, kt	D 2022 emissions, kt	E Activity data uncertainty, %	F Emission factor uncertainty, %	G Combined uncertainty, %	H Contribution to Variance by Category in Year 2022	I Type A sensitivity, %	J Type B sensitivity, %	K Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	L Uncertainty in trend in national emissions introduced by activity data uncertainty	M Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	BC	0.139323	0.049602	2	30	30.067	0.000161	-3.483	3.162	-1.045	0.089%	0.011%
1A1c	Manufacture of solid fuels and other energy industries	BC	0.009108	0.008596	2	30	30.067	0.000005	0.113	0.548	0.034	0.016%	0.000%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	BC	0.000012	0.000000	2	30	30.067	0.000000	-0.001	0.000	0.000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	BC	0.000240	0.000120	2	30	30.067	0.000000	-0.004	0.008	-0.001	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	BC	0.011121	0.001269	2	30	30.067	0.000000	-0.450	0.081	-0.135	0.002%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	BC	0.001834	0.000505	2	30	30.067	0.000000	-0.055	0.032	-0.017	0.001%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	BC	0.010498	0.000582	2	30	30.067	0.000000	-0.464	0.037	-0.139	0.001%	0.000%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	BC	0.022931	0.007506	2	50	50.040	0.000010	-0.616	0.479	-0.308	0.014%	0.001%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	BC	0.030172	0.002851	2	30	30.067	0.000001	-1.258	0.182	-0.377	0.005%	0.001%
1A3ai(i)	International aviation LTO (civil)	BC	0.000146	0.000221	2	30	30.067	0.000000	0.007	0.014	0.002	0.000%	0.000%
1A3aii(i)	Domestic aviation LTO (civil)	BC	0.000005	0.000008	2	30	30.067	0.000000	0.000	0.001	0.000	0.000%	0.000%
1A3bi	Road transport: Passenger cars	BC	0.037610	0.081794	2	20	20.100	0.000196	3.419	5.215	0.684	0.148%	0.005%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3bii	Road transport: Light duty vehicles	BC	0.070016	0.017726	2	20	20.100	0.000009	-2.210	1.130	-0.442	0.032%	0.002%
1A3biii	Road transport: Heavy duty vehicles and buses	BC	0.111955	0.017224	2	20	20.100	0.000009	-4.242	1.098	-0.848	0.031%	0.007%
1A3biv	Road transport: Mopeds & motorcycles	BC	0.000048	0.000129	2	20	20.100	0.000000	0.006	0.008	0.001	0.000%	0.000%
1A3bvi	Road transport: Automobile tyre and brake wear	BC	0.015771	0.030514	2	20	20.100	0.000027	1.193	1.945	0.239	0.055%	0.001%
1A3bvii	Road transport: Automobile road abrasion	BC	0.001458	0.002445	2	20	20.100	0.000000	0.086	0.156	0.017	0.004%	0.000%
1A3c	Railways	BC	0.035938	0.010374	2	100	100.020	0.000078	-1.053	0.661	-1.053	0.019%	0.011%
1A3dii	National navigation (shipping)	BC	0.003255	0.002671	2	100	100.020	0.000005	0.015	0.170	0.015	0.005%	0.000%
1A4ai	Commercial/Institutional: Stationary	BC	0.008783	0.006488	2	30	30.067	0.000003	-0.006	0.414	-0.002	0.012%	0.000%
1A4aii	Commercial/Institutional: Mobile	BC	0.013136	0.002350	2	50	50.040	0.000001	-0.477	0.150	-0.239	0.004%	0.001%
1A4bi	Residential: Stationary	BC	0.972443	0.890215	50	30	58.310	0.195477	10.285	56.757	3.085	40.133%	16.202%
1A4bii	Residential: Household and gardening (mobile)	BC	0.002057	0.001000	2	50	50.040	0.000000	-0.034	0.064	-0.017	0.002%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	BC	0.010159	0.004911	2	30	30.067	0.000002	-0.172	0.313	-0.052	0.009%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	BC	0.030736	0.017100	2	50	50.040	0.000053	-0.377	1.090	-0.188	0.031%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	BC	0.000926	0.000260	2	100	100.020	0.000000	-0.028	0.017	-0.028	0.000%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	BC	0.000000	0.000003	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2A1	Cement production	BC	0.000225	0.000091	2	50	50.040	0.000000	-0.005	0.006	-0.002	0.000%	0.000%
2A2	Lime production	BC	0.000000	0.000003	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2A3	Glass production	BC	0.000000	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2B10a	Chemical industry: Other (please specify in the IIR)	BC	0.002658	0.000026	2	50	50.040	0.000000	-0.125	0.002	-0.063	0.000%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
2C1	Iron and steel production	BC	0.000002	0.000001	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C3	Aluminium production	BC	0.000000	0.000001	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C7c	Other metal production (please specify in the IIR)	BC	0.000068	0.000155	2	50	50.040	0.000000	0.007	0.010	0.003	0.000%	0.000%
2D3b	Road paving with asphalt	BC	0.000038	0.000081	2	100	100.020	0.000000	0.003	0.005	0.003	0.000%	0.000%
2G	Other product use (please specify in the IIR)	BC	0.023610	0.016641	5	50	50.249	0.000051	-0.066	1.061	-0.033	0.075%	0.000%
2H1	Pulp and paper industry	BC	0.002184	0.000584	2	50	50.040	0.000000	-0.067	0.037	-0.034	0.001%	0.000%
5C1bi	Industrial waste incineration	BC	0.000000	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bii	Hazardous waste incineration	BC	0.000001	0.000001	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1biii	Clinical waste incineration	BC	0.000000	0.000000	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
Total			1.568467	1.174050				0.196088	16.243%				
% uncertainty in total inventory (%)								44.282	Trend uncertainty (%):				40.302



	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	CO	11.459086	3.398514	2	10	10.198	0.000011	-0.655	1.394	-0.066	0.039%	0.000%
1A1c	Manufacture of solid fuels and other energy industries	CO	7.109188	38.754032	2	20	20.100	0.005365	14.615	15.891	2.923	0.449%	0.087%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	CO	0.000000	0.000064	2	10	10.198	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	CO	0.076412	0.003765	2	10	10.198	0.000000	-0.012	0.002	-0.001	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	CO	0.004624	0.032018	2	10	10.198	0.000000	0.012	0.013	0.001	0.000%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	CO	0.033687	0.014996	2	10	10.198	0.000000	0.000	0.006	0.000	0.000%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	CO	0.857761	0.010535	2	10	10.198	0.000000	-0.149	0.004	-0.015	0.000%	0.000%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	CO	5.232411	0.215313	2	50	50.040	0.000001	-0.847	0.088	-0.424	0.002%	0.002%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	CO	2.597673	0.058416	2	10	10.198	0.000000	-0.440	0.024	-0.044	0.001%	0.000%
1A3ai(i)	International aviation LTO (civil)	CO	0.090740	0.135224	2	30	30.067	0.000000	0.039	0.055	0.012	0.002%	0.000%
1A3aii(i)	Domestic aviation LTO (civil)	CO	0.029635	0.035205	2	30	30.067	0.000000	0.009	0.014	0.003	0.000%	0.000%
1A3bi	Road transport: Passenger cars	CO	104.182841	4.201048	2	20	20.100	0.000063	-16.835	1.723	-3.367	0.049%	0.113%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3bii	Road transport: Light duty vehicles	CO	9.200166	0.269579	2	20	20.100	0.000000	-1.534	0.111	-0.307	0.003%	0.001%
1A3biii	Road transport: Heavy duty vehicles and buses	CO	4.174457	0.606070	2	20	20.100	0.000001	-0.498	0.249	-0.100	0.007%	0.000%
1A3biv	Road transport: Mopeds & motorcycles	CO	0.137579	0.369966	2	20	20.100	0.000000	0.127	0.152	0.025	0.004%	0.000%
1A3c	Railways	CO	0.870959	0.207324	2	100	100.020	0.000004	-0.071	0.085	-0.071	0.002%	0.000%
1A3dii	National navigation (shipping)	CO	0.051800	0.042513	2	100	100.020	0.000000	0.008	0.017	0.008	0.000%	0.000%
1A4ai	Commercial/Institutional: Stationary	CO	0.460491	0.211255	2	10	10.198	0.000000	0.004	0.087	0.000	0.002%	0.000%
1A4aii	Commercial/Institutional: Mobile	CO	1.499509	0.172918	2	50	50.040	0.000001	-0.197	0.071	-0.099	0.002%	0.000%
1A4bi	Residential: Stationary	CO	71.531593	54.800033	50	10	50.990	0.069033	9.651	22.470	0.965	15.889%	2.534%
1A4bii	Residential: Household and gardening (mobile)	CO	0.646271	1.057100	2	50	50.040	0.000025	0.318	0.433	0.159	0.012%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	CO	0.658504	0.092741	2	10	10.198	0.000000	-0.080	0.038	-0.008	0.001%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	CO	21.084101	0.387700	2	50	50.040	0.000003	-3.608	0.159	-1.804	0.004%	0.033%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	CO	0.502532	0.004144	2	100	100.020	0.000000	-0.088	0.002	-0.088	0.000%	0.000%
1B1c	Other fugitive emissions from solid fuels	CO	0.494456	0.432162	2	100	100.020	0.000017	0.089	0.177	0.089	0.005%	0.000%
1B2aiv	Fugitive emissions oil: Refining and storage	CO	0.000000	0.004396	2	100	100.020	0.000000	0.002	0.002	0.002	0.000%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	CO	0.000000	0.000019	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
2A5a	Quarrying and mining of minerals other than coal	CO	0.000000	0.013284	2	50	50.040	0.000000	0.005	0.005	0.003	0.000%	0.000%
2B10a	Chemical industry: Other (please specify in the IIR)	CO	0.340000	0.606077	2	50	50.040	0.000008	0.188	0.249	0.094	0.007%	0.000%
2C1	Iron and steel production	CO	0.000008	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M	
NFR sector	NFR name	Pollutant	1990 emissions, kt	2022 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions	
2C7c	Other metal production (please specify in the IIR)	CO	0.000000	0.020886	2	50	50.040	0.000000	0.009	0.009	0.004	0.000%	0.000%	
2D3g	Chemical products	CO	0.000000	0.002543	2	50	50.040	0.000000	0.001	0.001	0.001	0.000%	0.000%	
2G	Other product use (please specify in the IIR)	CO	0.229500	0.080051	5	50	50.249	0.000000	-0.008	0.033	-0.004	0.002%	0.000%	
2H2	Food and beverages industry	CO	0.000000	0.027359	2	50	50.040	0.000000	0.011	0.011	0.006	0.000%	0.000%	
2I	Wood processing	CO	0.000000	0.009242	2	50	50.040	0.000000	0.004	0.004	0.002	0.000%	0.000%	
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities	CO	0.000000	0.001403	2	50	50.040	0.000000	0.001	0.001	0.000	0.000%	0.000%	
5C1bi	Industrial waste incineration	CO	0.000000	0.000442	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5C1bii	Hazardous waste incineration	CO	0.000000	0.000561	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5C1biii	Clinical waste incineration	CO	0.000018	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5C1bv	Cremation	CO	0.000000	0.001599	2	50	50.040	0.000000	0.001	0.001	0.000	0.000%	0.000%	
5C2	Open burning of waste	CO	0.321007	0.069822	10	50	50.990	0.000000	-0.029	0.029	-0.014	0.004%	0.000%	
Total			243.877010	106.350318				0.074532				2.771%		
% uncertainty in total inventory (%)								27.301				Trend uncertainty (%):		16.646

A	B	C	D	E	F	G	H	I	J	K	L	M	
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	Pb	57.818651	0.992713	2	50	50.040	0.014167	-0.101	0.492	-0.050	0.014%	0.000%
1A1c	Manufacture of solid fuels and other energy industries	Pb	0.008206	0.024531	2	150	150.013	0.000078	0.012	0.012	0.018	0.000%	0.000%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	Pb	0.000000	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	Pb	0.036506	0.001586	2	50	50.040	0.000000	0.000	0.001	0.000	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	Pb	0.019175	0.003627	2	50	50.040	0.000000	0.002	0.002	0.001	0.000%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	Pb	0.099752	0.005915	2	50	50.040	0.000001	0.002	0.003	0.001	0.000%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	Pb	61.841357	0.004184	2	50	50.040	0.000000	-0.630	0.002	-0.315	0.000%	0.001%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	Pb	0.900000	0.000503	2	50	50.040	0.000000	-0.009	0.000	-0.004	0.000%	0.000%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	Pb	0.288786	0.009391	2	50	50.040	0.000001	0.002	0.005	0.001	0.000%	0.000%
1A3bi	Road transport: Passenger cars	Pb	50.589167	0.000444	2	20	20.100	0.000000	-0.517	0.000	-0.103	0.000%	0.000%
1A3bii	Road transport: Light duty vehicles	Pb	4.512580	0.000060	2	20	20.100	0.000000	-0.046	0.000	-0.009	0.000%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	Pb	17.847868	0.000097	2	20	20.100	0.000000	-0.183	0.000	-0.037	0.000%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3biv	Road transport: Mopeds & motorcycles	Pb	0.037530	0.000005	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3bvi	Road transport: Automobile tyre and brake wear	Pb	0.875979	1.049037	2	30	30.067	0.005711	0.511	0.520	0.153	0.015%	0.000%
1A3c	Railways	Pb	0.015946	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3dii	National navigation (shipping)	Pb	0.000910	0.000747	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A4ai	Commercial/Institutional: Stationary	Pb	0.080122	0.030584	2	50	50.040	0.000013	0.014	0.015	0.007	0.000%	0.000%
1A4aii	Commercial/Institutional: Mobile	Pb	0.300000	0.000948	2	50	50.040	0.000000	-0.003	0.000	-0.001	0.000%	0.000%
1A4bi	Residential: Stationary	Pb	2.708174	1.620724	50	100	111.803	0.188502	0.776	0.804	0.776	0.568%	0.009%
1A4bii	Residential: Household and gardening (mobile)	Pb	0.126000	0.015100	2	50	50.040	0.000003	0.006	0.007	0.003	0.000%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	Pb	0.093051	0.018158	2	50	50.040	0.000005	0.008	0.009	0.004	0.000%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	Pb	3.489600	0.002500	2	50	50.040	0.000000	-0.035	0.001	-0.017	0.000%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	Pb	0.001408	0.000073	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	Pb	0.000000	0.000112	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C1	Iron and steel production	Pb	0.012491	0.000001	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C5	Lead production	Pb	0.000000	0.004000	2	50	50.040	0.000000	0.002	0.002	0.001	0.000%	0.000%
2C7c	Other metal production (please specify in the IIR)	Pb	0.000000	0.000582	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2G	Other product use (please specify in the IIR)	Pb	0.002030	0.384941	5	50	50.249	0.002148	0.191	0.191	0.095	0.013%	0.000%
5C1bii	Hazardous waste incineration	Pb	0.000000	0.002305	2	50	50.040	0.000000	0.001	0.001	0.001	0.000%	0.000%
5C1biii	Clinical waste incineration	Pb	0.000429	0.000039	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bv	Cremation	Pb	0.000000	0.000343	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
5E	Other waste (please specify in the IIR)	Pb	0.000000	0.000306	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
Total			201.705718	4.173554				0.210630				0.011%	
% uncertainty in total inventory (%)								45.894	Trend uncertainty (%):			1.036	

NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	Cd	0.988288	0.133228	2	50	50.040	0.021194	0.709	2.989	0.355	0.085%	0.001%
1A1c	Manufacture of solid fuels and other energy industries	Cd	0.000485	0.001450	2	150	150.013	0.000023	0.031	0.033	0.047	0.001%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	Cd	0.001027	0.001415	2	50	50.040	0.000002	0.029	0.032	0.015	0.001%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	Cd	0.000548	0.001434	2	50	50.040	0.000002	0.031	0.032	0.015	0.001%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	Cd	0.013026	0.004046	2	50	50.040	0.000020	0.061	0.091	0.030	0.003%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	Cd	3.216509	0.001276	2	50	50.040	0.000002	-7.333	0.029	-3.667	0.001%	0.134%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	Cd	0.000170	0.000201	2	50	50.040	0.000000	0.004	0.005	0.002	0.000%	0.000%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	Cd	0.008243	0.005690	2	50	50.040	0.000039	0.109	0.128	0.054	0.004%	0.000%
1A3bi	Road transport: Passenger cars	Cd	0.000069	0.000052	2	20	20.100	0.000000	0.001	0.001	0.000	0.000%	0.000%
1A3bii	Road transport: Light duty vehicles	Cd	0.000007	0.000012	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	Cd	0.000032	0.000010	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3biv	Road transport: Mopeds & motorcycles	Cd	0.000000	0.000001	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3bvi	Road transport: Automobile tyre and brake wear	Cd	0.003759	0.004562	2	30	30.067	0.000009	0.094	0.102	0.028	0.003%	0.000%
1A3c	Railways	Cd	0.000674	0.000125	2	50	50.040	0.000000	0.001	0.003	0.001	0.000%	0.000%
1A3dii	National navigation (shipping)	Cd	0.000070	0.000057	2	50	50.040	0.000000	0.001	0.001	0.001	0.000%	0.000%
1A4ai	Commercial/Institutional: Stationary	Cd	0.031517	0.014990	2	50	50.040	0.000268	0.264	0.336	0.132	0.010%	0.000%
1A4aii	Commercial/Institutional: Mobile	Cd	0.000073	0.000063	2	50	50.040	0.000000	0.001	0.001	0.001	0.000%	0.000%
1A4bi	Residential: Stationary	Cd	0.132975	0.260222	50	100	111.803	0.403638	5.530	5.839	5.530	4.128%	0.476%
1A4bii	Residential: Household and gardening (mobile)	Cd	0.000009	0.000032	2	50	50.040	0.000000	0.001	0.001	0.000	0.000%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	Cd	0.024853	0.012417	2	50	50.040	0.000184	0.221	0.279	0.111	0.008%	0.000%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	Cd	0.001108	0.000500	2	50	50.040	0.000000	0.009	0.011	0.004	0.000%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	Cd	0.000108	0.000006	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	Cd	0.000000	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C1	Iron and steel production	Cd	0.000960	0.000000	2	50	50.040	0.000000	-0.002	0.000	-0.001	0.000%	0.000%
2G	Other product use (please specify in the IIR)	Cd	0.032429	0.015280	5	50	50.249	0.000281	0.268	0.343	0.134	0.024%	0.000%
5C1bii	Hazardous waste incineration	Cd	0.000000	0.000177	2	50	50.040	0.000000	0.004	0.004	0.002	0.000%	0.000%
5C1biii	Clinical waste incineration	Cd	0.000036	0.000013	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1bv	Cremation	Cd	0.000000	0.000057	2	50	50.040	0.000000	0.001	0.001	0.001	0.000%	0.000%
5E	Other waste (please specify in the IIR)	Cd	0.000000	0.000619	2	100	100.020	0.000002	0.014	0.014	0.014	0.000%	0.000%
Total			4.456975	0.457934				0.425665				0.613%	
% uncertainty in total inventory (%)								65.243	Trend uncertainty (%):				7.827



NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	Hg	1.018997	0.110936	2	50	50.040	0.080110	-4.455	9.174	-2.228	0.259%	0.050%
1A1c	Manufacture of solid fuels and other energy industries	Hg	0.001678	0.005018	2	150	150.013	0.001473	0.392	0.415	0.589	0.012%	0.003%
1A2a	Stationary combustion in manufacturing industries and construction: Iron and steel	Hg	0.000000	0.000001	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	Hg	0.001025	0.000023	2	50	50.040	0.000000	-0.012	0.002	-0.006	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	Hg	0.000183	0.000246	2	50	50.040	0.000000	0.018	0.020	0.009	0.001%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	Hg	0.000925	0.000119	2	50	50.040	0.000000	-0.003	0.010	-0.001	0.000%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	Hg	0.070736	0.000095	2	50	50.040	0.000000	-0.940	0.008	-0.470	0.000%	0.002%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	Hg	0.018651	0.000379	2	50	50.040	0.000001	-0.219	0.031	-0.109	0.001%	0.000%
1A3bi	Road transport: Passenger cars	Hg	0.003063	0.003123	2	20	20.100	0.000010	0.217	0.258	0.043	0.007%	0.000%
1A3bii	Road transport: Light duty vehicles	Hg	0.000401	0.000593	2	20	20.100	0.000000	0.044	0.049	0.009	0.001%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	Hg	0.001955	0.001018	2	20	20.100	0.000001	0.058	0.084	0.012	0.002%	0.000%
1A3biv	Road transport: Mopeds & motorcycles	Hg	0.000002	0.000025	2	20	20.100	0.000000	0.002	0.002	0.000	0.000%	0.000%
1A3c	Railways	Hg	0.000940	0.000000	2	50	50.040	0.000000	-0.013	0.000	-0.006	0.000%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3dii	National navigation (shipping)	Hg	0.000210	0.000172	2	50	50.040	0.000000	0.011	0.014	0.006	0.000%	0.000%
1A4ai	Commercial/Institutional: Stationary	Hg	0.001958	0.001261	2	50	50.040	0.000010	0.078	0.104	0.039	0.003%	0.000%
1A4bi	Residential: Stationary	Hg	0.085219	0.040998	50	100	111.803	0.054619	2.246	3.390	2.246	2.397%	0.108%
1A4ci	Agriculture/Forestry/Fishing: Stationary	Hg	0.002146	0.000207	2	50	50.040	0.000000	-0.012	0.017	-0.006	0.000%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	Hg	0.000325	0.000017	2	50	50.040	0.000000	-0.003	0.001	-0.001	0.000%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	Hg	0.000000	0.000000	2	50	50.040	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C1	Iron and steel production	Hg	0.000242	0.000000	2	50	50.040	0.000000	-0.003	0.000	-0.002	0.000%	0.000%
2G	Other product use (please specify in the IIR)	Hg	0.000000	0.000028	5	50	50.249	0.000000	0.002	0.002	0.001	0.000%	0.000%
5C1bii	Hazardous waste incineration	Hg	0.000000	0.000099	2	50	50.040	0.000000	0.008	0.008	0.004	0.000%	0.000%
5C1biii	Clinical waste incineration	Hg	0.000643	0.014132	2	50	50.040	0.001300	1.160	1.169	0.580	0.033%	0.003%
5C1bv	Cremation	Hg	0.000000	0.017022	2	50	50.040	0.001886	1.408	1.408	0.704	0.040%	0.005%
5E	Other waste (please specify in the IIR)	Hg	0.000000	0.000619	2	100	100.020	0.000010	0.051	0.051	0.051	0.001%	0.000%
Total			1.209298	0.196131				0.139422					0.172%
% uncertainty in total inventory (%)								37.339				Trend uncertainty (%):	4.152

NFR sector	A NFR name	B Pollutant	C 1990 emissions, g I-TEQ	D 2022 emissions, g I-TEQ	E Activity data uncertainty, %	F Emission factor uncertainty, %	G Combined uncertainty, %	H Contribution to Variance by Category in Year 2022	I Type A sensitivity, %	J Type B sensitivity, %	K Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	L Uncertainty in trend in national emissions introduced by activity data uncertainty	M Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	PCDD/F	2.135303	2.143874	2	200	200.010	1.075023	12.151	19.422	24.302	0.549%	5.909%
1A1c	Manufacture of solid fuels and other energy industries	PCDD/F	0.006070	0.014197	2	200	200.010	0.000047	0.108	0.129	0.216	0.004%	0.000%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	PCDD/F	0.036031	0.000881	2	200	200.010	0.000000	-0.114	0.008	-0.229	0.000%	0.001%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	PCDD/F	0.018262	0.029889	2	200	200.010	0.000209	0.209	0.271	0.418	0.008%	0.002%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	PCDD/F	0.092524	0.006805	2	200	200.010	0.000011	-0.252	0.062	-0.505	0.002%	0.003%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	PCDD/F	0.682040	0.004805	2	200	200.010	0.000005	-2.270	0.044	-4.540	0.001%	0.206%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	PCDD/F	0.345191	0.053479	2	200	200.010	0.000669	-0.687	0.484	-1.374	0.014%	0.019%
1A3bi	Road transport: Passenger cars	PCDD/F	0.167237	0.160000	2	250	250.008	0.009355	0.882	1.450	2.204	0.041%	0.049%
1A3bii	Road transport: Light duty vehicles	PCDD/F	0.012329	0.022866	2	250	250.008	0.000191	0.165	0.207	0.413	0.006%	0.002%
1A3biii	Road transport: Heavy duty vehicles and buses	PCDD/F	0.100867	0.020140	2	250	250.008	0.000148	-0.160	0.182	-0.400	0.005%	0.002%
1A3biv	Road transport: Mopeds & motorcycles	PCDD/F	0.000214	0.001167	2	250	250.008	0.000000	0.010	0.011	0.025	0.000%	0.000%
1A3c	Railways	PCDD/F	0.024157	0.000000	2	250	250.008	0.000000	-0.082	0.000	-0.205	0.000%	0.000%
1A3dii	National navigation (shipping)	PCDD/F	0.000910	0.000747	2	250	250.008	0.000000	0.004	0.007	0.009	0.000%	0.000%
1A4ai	Commercial/Institutional: Stationary	PCDD/F	0.247804	0.082193	2	200	200.010	0.001580	-0.096	0.745	-0.193	0.021%	0.000%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, g I-TEQ	2022 emissions, g I-TEQ	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A4bi	Residential: Stationary	PCDD/F	5.936186	0.343489	50	200	206.155	0.029318	-16.946	3.112	-33.892	2.200%	11.535%
1A4ci	Agriculture/Forestry/Fishing: Stationary	PCDD/F	0.153695	0.028865	2	200	200.010	0.000195	-0.260	0.262	-0.520	0.007%	0.003%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	PCDD/F	0.001408	0.000073	2	250	250.008	0.000000	-0.004	0.001	-0.010	0.000%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	PCDD/F	0.000000	0.000005	2	200	200.010	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C1	Iron and steel production	PCDD/F	0.014436	0.000002	2	100	100.020	0.000000	-0.049	0.000	-0.049	0.000%	0.000%
2C3	Aluminium production	PCDD/F	0.000000	0.000013	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C5	Lead production	PCDD/F	0.000000	0.025574	2	100	100.020	0.000038	0.232	0.232	0.232	0.007%	0.001%
2C6	Zinc production	PCDD/F	0.000000	0.003727	2	100	100.020	0.000001	0.034	0.034	0.034	0.001%	0.000%
2G	Other product use (please specify in the IIR)	PCDD/F	0.000416	0.000139	5	250	250.050	0.000000	0.000	0.001	0.000	0.000%	0.000%
5C1bii	Hazardous waste incineration	PCDD/F	0.000000	0.001330	2	250	250.008	0.000001	0.012	0.012	0.030	0.000%	0.000%
5C1biii	Clinical waste incineration	PCDD/F	0.476160	0.000428	2	250	250.008	0.000000	-1.612	0.004	-4.029	0.000%	0.162%
5C1bv	Cremation	PCDD/F	0.000000	0.000308	2	250	250.008	0.000000	0.003	0.003	0.007	0.000%	0.000%
5C2	Open burning of waste	PCDD/F	0.586983	0.127675	10	250	250.200	0.005966	-0.835	1.157	-2.088	0.164%	0.044%
5E	Other waste (please specify in the IIR)	PCDD/F	0.000000	1.062962	2	250	250.008	0.412914	9.630	9.630	24.075	0.272%	5.797%
Total			11.038224	4.135633				1.535673				23.733%	
% uncertainty in total inventory (%)								123.922				Trend uncertainty (%):	48.717

A	B	C	D	E	F	G	H	I	J	K	L	M	
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	B(a)p	0.213499	0.130352	2	200	200.010	0.059419	1.746	4.637	3.492	0.13%	0.12%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	B(a)p	0.005091	0.000581	2	200	200.010	0.000001	-0.048	0.021	-0.096	0.00%	0.00%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	B(a)p	0.002465	0.003285	2	200	200.010	0.000038	0.083	0.117	0.167	0.00%	0.00%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	B(a)p	0.014312	0.002178	2	200	200.010	0.000017	-0.116	0.077	-0.232	0.00%	0.00%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	B(a)p	0.016516	0.000902	2	200	200.010	0.000003	-0.191	0.032	-0.383	0.00%	0.00%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	B(a)p	0.000570	0.000604	2	200	200.010	0.000001	0.014	0.021	0.028	0.00%	0.00%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	B(a)p	0.054058	0.006929	2	200	200.010	0.000168	-0.485	0.246	-0.970	0.01%	0.01%
1A3bi	Road transport: Passenger cars	B(a)p	0.003304	0.008564	2	200	200.010	0.000256	0.260	0.305	0.520	0.01%	0.00%
1A3bii	Road transport: Light duty vehicles	B(a)p	0.000736	0.002466	2	200	200.010	0.000021	0.078	0.088	0.156	0.00%	0.00%
1A3biii	Road transport: Heavy duty vehicles and buses	B(a)p	0.001441	0.000883	2	200	200.010	0.000003	0.012	0.031	0.024	0.00%	0.00%
1A3biv	Road transport: Mopeds & motorcycles	B(a)p	0.000003	0.000024	2	200	200.010	0.000000	0.001	0.001	0.002	0.00%	0.00%
1A3bvi	Road transport: Automobile tyre and brake wear	B(a)p	0.000611	0.000751	2	200	200.010	0.000002	0.018	0.027	0.037	0.00%	0.00%

A		B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3c	Railways	B(a)p	0.006795	0.000375	2	200	200.010	0.000000	-0.079	0.013	-0.157	0.00%	0.00%
1A3dii	National navigation (shipping)	B(a)p	0.000014	0.000011	2	200	200.010	0.000000	0.000	0.000	0.000	0.00%	0.00%
1A4ai	Commercial/Institutional: Stationary	B(a)p	0.028334	0.015940	2	200	200.010	0.000889	0.184	0.567	0.367	0.02%	0.00%
1A4aii	Commercial/Institutional: Mobile	B(a)p	0.000238	0.000192	2	200	200.010	0.000000	0.004	0.007	0.007	0.00%	0.00%
1A4bi	Residential: Stationary	B(a)p	2.410974	0.883952	50	200	206.155	2.902881	-1.174	31.442	-2.348	22.23%	5.00%
1A4bii	Residential: Household and gardening (mobile)	B(a)p	0.000035	0.000112	2	200	200.010	0.000000	0.004	0.004	0.007	0.00%	0.00%
1A4ci	Agriculture/Forestry/Fishing: Stationary	B(a)p	0.037645	0.007385	2	200	200.010	0.000191	-0.247	0.263	-0.493	0.01%	0.00%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	B(a)p	0.003558	0.001600	2	200	200.010	0.000009	0.009	0.057	0.018	0.00%	0.00%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	B(a)p	0.000022	0.000001	2	200	200.010	0.000000	0.000	0.000	-0.001	0.00%	0.00%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	B(a)p	0.000000	0.000001	2	200	200.010	0.000000	0.000	0.000	0.000	0.00%	0.00%
2G	Other product use (please specify in the IIR)	B(a)p	0.000462	0.000154	5	200	200.062	0.000000	-0.001	0.005	-0.002	0.00%	0.00%
5C1bv	Cremation	B(a)p	0.000000	0.000000	2	200	200.010	0.000000	0.000	0.000	0.000	0.00%	0.00%
5C2	Open burning of waste	B(a)p	0.010700	0.002327	10	200	200.250	0.000019	-0.062	0.083	-0.124	0.01%	0.00%
Total			2.811383	1.069568				2.963917				5.14%	
% uncertainty in total inventory (%)								172.160				Trend uncertainty (%): 22.670	

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	B(b)f	0.286395	0.208213	2	200	200.010	0.168595	3.549	5.827	7.098	0.165%	0.504%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	B(b)f	0.008367	0.000669	2	200	200.010	0.000002	-0.048	0.019	-0.095	0.001%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	B(b)f	0.004292	0.005131	2	200	200.010	0.000102	0.109	0.144	0.219	0.004%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	B(b)f	0.023564	0.002729	2	200	200.010	0.000029	-0.111	0.076	-0.222	0.002%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	B(b)f	0.026240	0.001315	2	200	200.010	0.000007	-0.172	0.037	-0.343	0.001%	0.001%
1A2gvii	Mobile combustion in manufacturing industries and construction (please specify in the IIR)	B(b)f	0.000790	0.001004	2	200	200.010	0.000004	0.022	0.028	0.044	0.001%	0.000%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	B(b)f	0.074894	0.010293	2	200	200.010	0.000412	-0.307	0.288	-0.613	0.008%	0.004%
1A3bi	Road transport: Passenger cars	B(b)f	0.005510	0.009749	2	200	200.010	0.000370	0.229	0.273	0.458	0.008%	0.002%
1A3bii	Road transport: Light duty vehicles	B(b)f	0.000954	0.002774	2	200	200.010	0.000030	0.070	0.078	0.140	0.002%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	B(b)f	0.008726	0.005344	2	200	200.010	0.000111	0.080	0.150	0.160	0.004%	0.000%
1A3biv	Road transport: Mopeds & motorcycles	B(b)f	0.000006	0.000031	2	200	200.010	0.000000	0.001	0.001	0.002	0.000%	0.000%

A	B	C	D	E	F	G	H	I	J	K	L	M	
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A3bvi	Road transport: Automobile tyre and brake wear	B(b)f	0.000059	0.000070	2	200	200.010	0.000000	0.002	0.002	0.003	0.000%	0.000%
1A3c	Railways	B(b)f	0.009309	0.000625	2	200	200.010	0.000002	-0.056	0.017	-0.113	0.000%	0.000%
1A3dii	National navigation (shipping)	B(b)f	0.000070	0.000057	2	200	200.010	0.000000	0.001	0.002	0.002	0.000%	0.000%
1A4ai	Commercial/Institutional: Stationary	B(b)f	0.043837	0.021391	2	200	200.010	0.001779	0.250	0.599	0.501	0.017%	0.003%
1A4aii	Commercial/Institutional: Mobile	B(b)f	0.000343	0.000315	2	200	200.010	0.000000	0.006	0.009	0.012	0.000%	0.000%
1A4bi	Residential: Stationary	B(b)f	3.020068	0.731060	50	200	206.155	2.208107	-3.499	20.458	-6.998	14.466%	2.582%
1A4bii	Residential: Household and gardening (mobile)	B(b)f	0.000036	0.000147	2	200	200.010	0.000000	0.004	0.004	0.008	0.000%	0.000%
1A4ci	Agriculture/Forestry/Fishing: Stationary	B(b)f	0.049343	0.009432	2	200	200.010	0.000346	-0.128	0.264	-0.256	0.007%	0.001%
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	B(b)f	0.005309	0.002700	2	200	200.010	0.000028	0.033	0.076	0.067	0.002%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	B(b)f	0.000108	0.000006	2	200	200.010	0.000000	-0.001	0.000	-0.001	0.000%	0.000%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	B(b)f	0.000000	0.000001	2	200	200.010	0.000000	0.000	0.000	0.000	0.000%	0.000%
2G	Other product use (please specify in the IIR)	B(b)f	0.000187	0.000063	5	200	200.062	0.000000	0.000	0.002	0.001	0.000%	0.000%
5C1bv	Cremation	B(b)f	0.000000	0.000000	2	200	200.010	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C2	Open burning of waste	B(b)f	0.005121	0.001114	10	200	200.250	0.000005	-0.010	0.031	-0.019	0.004%	0.000%
Total			3.573528	1.014232				2.379928				3.098%	
% uncertainty in total inventory (%)								154.270	Trend uncertainty (%):			17.602	



A	B	C	D	E	F	G	H	I	J	K	L	M	
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	B(k)f	0.145852	0.065382	2	200	200.010	0.038535	0.467	3.868	0.933	0.109%	0.009%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	B(k)f	0.004354	0.000440	2	200	200.010	0.000002	-0.076	0.026	-0.151	0.001%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	B(k)f	0.002283	0.001772	2	200	200.010	0.000028	0.052	0.105	0.103	0.003%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	B(k)f	0.012866	0.001588	2	200	200.010	0.000023	-0.206	0.094	-0.412	0.003%	0.002%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	B(k)f	0.013722	0.000698	2	200	200.010	0.000004	-0.279	0.041	-0.557	0.001%	0.003%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	B(k)f	0.035092	0.003997	2	200	200.010	0.000144	-0.582	0.236	-1.164	0.007%	0.014%
1A3bi	Road transport: Passenger cars	B(k)f	0.002260	0.007409	2	200	200.010	0.000495	0.386	0.438	0.771	0.012%	0.006%
1A3bii	Road transport: Light duty vehicles	B(k)f	0.000601	0.002164	2	200	200.010	0.000042	0.114	0.128	0.228	0.004%	0.001%
1A3biii	Road transport: Heavy duty vehicles and buses	B(k)f	0.009750	0.005971	2	200	200.010	0.000321	0.126	0.353	0.252	0.010%	0.001%
1A3biv	Road transport: Mopeds & motorcycles	B(k)f	0.000002	0.000019	2	200	200.010	0.000000	0.001	0.001	0.002	0.000%	0.000%
1A3bvi	Road transport: Automobile tyre and brake wear	B(k)f	0.000087	0.000104	2	200	200.010	0.000000	0.004	0.006	0.008	0.000%	0.000%
1A3c	Railways	B(k)f	0.004403	0.000430	2	200	200.010	0.000002	-0.077	0.025	-0.154	0.001%	0.000%
1A3dii	National navigation (shipping)	B(k)f	0.000070	0.000057	2	200	200.010	0.000000	0.002	0.003	0.003	0.000%	0.000%

A		B	C	D	E	F	G	H	I	J	K	L	M	
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions	
1A4ai	Commercial/Institutional: Stationary	B(k)f	0.015527	0.009316	2	200	200.010	0.000782	0.189	0.551	0.378	0.016%	0.001%	
1A4bi	Residential: Stationary	B(k)f	1.416138	0.560584	50	200	206.155	3.009589	0.141	33.168	0.283	23.454%	5.501%	
1A4ci	Agriculture/Forestry/Fishing: Stationary	B(k)f	0.021694	0.005050	2	200	200.010	0.000230	-0.207	0.299	-0.414	0.008%	0.002%	
1A4ciii	Agriculture/Forestry/Fishing: National fishing	B(k)f	0.000108	0.000006	2	200	200.010	0.000000	-0.002	0.000	-0.004	0.000%	0.000%	
1B2c	Venting and flaring (oil, gas, combined oil and gas)	B(k)f	0.000000	0.000001	2	200	200.010	0.000000	0.000	0.000	0.000	0.000%	0.000%	
2G	Other product use (please specify in the IIR)	B(k)f	0.000187	0.000063	5	200	200.062	0.000000	-0.001	0.004	-0.001	0.000%	0.000%	
5C1bv	Cremation	B(k)f	0.000000	0.000000	2	200	200.010	0.000000	0.000	0.000	0.000	0.000%	0.000%	
5C2	Open burning of waste	B(k)f	0.005121	0.001114	10	200	200.250	0.000011	-0.054	0.066	-0.107	0.009%	0.000%	
Total			1.690118	0.666165				3.050209				5.540%		
% uncertainty in total inventory (%)								174.648				Trend uncertainty (%):		23.536

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	I(1.2.3-cd)p	0.103524	0.052295	2	200	200.010	0.010990	-0.315	2.933	-0.631	0.08%	0.00%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	I(1.2.3-cd)p	0.003718	0.000229	2	200	200.010	0.000000	-0.104	0.013	-0.208	0.00%	0.00%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	I(1.2.3-cd)p	0.002009	0.001360	2	200	200.010	0.000007	0.013	0.076	0.026	0.00%	0.00%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	I(1.2.3-cd)p	0.010698	0.000914	2	200	200.010	0.000003	-0.284	0.051	-0.569	0.00%	0.00%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	I(1.2.3-cd)p	0.010950	0.000500	2	200	200.010	0.000001	-0.316	0.028	-0.631	0.00%	0.00%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	I(1.2.3-cd)p	0.026511	0.002823	2	200	200.010	0.000032	-0.673	0.158	-1.347	0.00%	0.02%
1A3bi	Road transport: Passenger cars	I(1.2.3-cd)p	0.006157	0.008519	2	200	200.010	0.000292	0.285	0.478	0.569	0.01%	0.00%
1A3bii	Road transport: Light duty vehicles	I(1.2.3-cd)p	0.000905	0.002317	2	200	200.010	0.000022	0.102	0.130	0.203	0.00%	0.00%
1A3biii	Road transport: Heavy duty vehicles and buses	I(1.2.3-cd)p	0.002241	0.001373	2	200	200.010	0.000008	0.007	0.077	0.013	0.00%	0.00%
1A3biv	Road transport: Mopeds & motorcycles	I(1.2.3-cd)p	0.000007	0.000034	2	200	200.010	0.000000	0.002	0.002	0.003	0.00%	0.00%
1A3bvi	Road transport: Automobile tyre and brake wear	I(1.2.3-cd)p	0.000365	0.000436	2	200	200.010	0.000001	0.013	0.024	0.026	0.00%	0.00%
1A3c	Railways	I(1.2.3-cd)p	0.002565	0.000099	2	200	200.010	0.000000	-0.075	0.006	-0.150	0.00%	0.00%
1A3dii	National navigation (shipping)	I(1.2.3-cd)p	0.000007	0.000006	2	200	200.010	0.000000	0.000	0.000	0.000	0.00%	0.00%

A		B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, t	2022 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A4ai	Commercial/Institutional: Stationary	I(1.2.3-cd)p	0.012025	0.006307	2	200	200.010	0.000160	-0.024	0.354	-0.047	0.01%	0.00%
1A4bi	Residential: Stationary	I(1.2.3-cd)p	1.575955	0.915421	50	200	206.155	3.577770	1.872	51.335	3.744	36.30%	13.32%
1A4ci	Agriculture/Forestry/Fishing: Stationary	I(1.2.3-cd)p	0.015701	0.002912	2	200	200.010	0.000034	-0.329	0.163	-0.659	0.00%	0.00%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	I(1.2.3-cd)p	0.000011	0.000001	2	200	200.010	0.000000	0.000	0.000	-0.001	0.00%	0.00%
1B2c	Venting and flaring (oil, gas, combined oil and gas)	I(1.2.3-cd)p	0.000000	0.000001	2	200	200.010	0.000000	0.000	0.000	0.000	0.00%	0.00%
2G	Other product use (please specify in the IIR)	I(1.2.3-cd)p	0.000187	0.000063	5	200	200.062	0.000000	-0.002	0.004	-0.005	0.00%	0.00%
5C1bv	Cremation	I(1.2.3-cd)p	0.000000	0.000000	2	200	200.010	0.000000	0.000	0.000	0.000	0.00%	0.00%
5C2	Open burning of waste	I(1.2.3-cd)p	0.009707	0.002111	10	200	200.250	0.000018	-0.186	0.118	-0.372	0.02%	0.00%
Total			1.783243	0.997721				3.589338	13.36%				
% uncertainty in total inventory (%)								189.455	Trend uncertainty (%):				36.546

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kg	2022 emissions, kg	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	HCB	0.126518	0.185241	2	250	250.008	0.871357	12.805	34.078	32.012	0.96%	10.26%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	HCB	0.000032	0.000000	2	100	100.020	0.000000	-0.005	0.000	-0.005	0.00%	0.00%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	HCB	0.000000	0.001428	2	100	100.020	0.000008	0.263	0.263	0.263	0.01%	0.00%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	HCB	0.000000	0.000162	2	100	100.020	0.000000	0.030	0.030	0.030	0.00%	0.00%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	HCB	0.004747	0.000084	2	100	100.020	0.000000	-0.782	0.015	-0.782	0.00%	0.01%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	HCB	0.002543	0.002481	2	250	250.008	0.000156	0.029	0.456	0.074	0.01%	0.00%
1A3bi	Road transport: Passenger cars	HCB	0.000167	0.000160	2	250	250.008	0.000001	0.001	0.029	0.003	0.00%	0.00%
1A3bii	Road transport: Light duty vehicles	HCB	0.000012	0.000023	2	250	250.008	0.000000	0.002	0.004	0.005	0.00%	0.00%
1A3biii	Road transport: Heavy duty vehicles and buses	HCB	0.000017	0.000014	2	250	250.008	0.000000	0.000	0.003	-0.001	0.00%	0.00%
1A3biv	Road transport: Mopeds & motorcycles	HCB	0.000000	0.000001	2	250	250.008	0.000000	0.000	0.000	0.000	0.00%	0.00%
1A3c	Railways	HCB	0.000074	0.000000	2	100	100.020	0.000000	-0.012	0.000	-0.012	0.00%	0.00%
1A3dii	National navigation (shipping)	HCB	0.000560	0.000460	2	100	100.020	0.000001	-0.009	0.085	-0.009	0.00%	0.00%
1A4ai	Commercial/Institutional: Stationary	HCB	0.011060	0.002557	2	100	100.020	0.000027	-1.386	0.470	-1.386	0.01%	0.02%
1A4bi	Residential: Stationary	HCB	0.088395	0.186041	50	100	111.803	0.175769	19.352	34.225	19.352	24.20%	9.60%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kg	2022 emissions, kg	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A4ci	Agriculture/Forestry/Fishing: Stationary	HCB	0.001672	0.001050	2	100	100.020	0.000004	-0.088	0.193	-0.088	0.01%	0.00%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	HCB	0.000866	0.000045	2	100	100.020	0.000000	-0.137	0.008	-0.137	0.00%	0.00%
2C3	Aluminium production	HCB	0.000000	0.001800	2	100	100.020	0.000013	0.331	0.331	0.331	0.01%	0.00%
5C1bii	Hazardous waste incineration	HCB	0.000000	0.003545	2	100	100.020	0.000051	0.652	0.652	0.652	0.02%	0.00%
5C1biii	Clinical waste incineration	HCB	0.001190	0.042823	2	100	100.020	0.007453	7.678	7.878	7.678	0.22%	0.59%
5C1bv	Cremation	HCB	0.000000	0.001714	2	100	100.020	0.000012	0.315	0.315	0.315	0.01%	0.00%
5C2	Open burning of waste	HCB	0.305720	0.066497	10	250	250.200	0.112460	-38.881	12.233	-97.203	1.73%	94.51%
Total			0.543575	0.496127				1.167312				115.00%	
% uncertainty in total inventory								108.042	Trend uncertainty (%):			107.236	

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kg	2022 emissions, kg	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A1a	Public electricity and heat production	PCB	2.266218	0.327392	2	200	200.010	1.335222	1.313	6.704	2.626	0.190%	0.069%
1A2c	Stationary combustion in manufacturing industries and construction: Chemicals	PCB	0.008670	0.000000	2	200	200.010	0.000000	-0.021	0.000	-0.041	0.000%	0.000%
1A2d	Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print	PCB	0.000000	0.000002	2	200	200.010	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A2e	Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco	PCB	0.000000	0.000000	2	200	200.010	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	PCB	0.096701	0.000001	2	200	200.010	0.000000	-0.230	0.000	-0.459	0.000%	0.002%
1A2gviii	Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR)	PCB	0.335413	0.000004	2	200	200.010	0.000000	-0.796	0.000	-1.593	0.000%	0.025%
1A3bi	Road transport: Passenger cars	PCB	0.000035	0.000032	2	100	100.020	0.000000	0.001	0.001	0.001	0.000%	0.000%
1A3bii	Road transport: Light duty vehicles	PCB	0.000012	0.000005	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3biii	Road transport: Heavy duty vehicles and buses	PCB	0.000017	0.000003	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3biv	Road transport: Mopeds & motorcycles	PCB	0.000000	0.000001	2	100	100.020	0.000000	0.000	0.000	0.000	0.000%	0.000%
1A3c	Railways	PCB	0.020230	0.000000	2	100	100.020	0.000000	-0.048	0.000	-0.048	0.000%	0.000%
1A3dii	National navigation (shipping)	PCB	0.000266	0.000218	2	100	100.020	0.000000	0.004	0.004	0.004	0.000%	0.000%
1A4ai	Commercial/Institutional: Stationary	PCB	0.010913	0.015558	2	200	200.010	0.003015	0.293	0.319	0.585	0.009%	0.003%
1A4bi	Residential: Stationary	PCB	1.139813	0.000704	50	150	158.114	0.000004	-2.687	0.014	-4.031	0.010%	0.163%

	A	B	C	D	E	F	G	H	I	J	K	L	M
NFR sector	NFR name	Pollutant	1990 emissions, kg	2022 emissions, kg	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to Variance by Category in Year 2022	Type A sensitivity, %	Type B sensitivity, %	Uncertainty in trend in national emissions introduced by emission factor uncertainty, %	Uncertainty in trend in national emissions introduced by activity data uncertainty	Uncertainty in trend in national emissions introduced into the trend in total national emissions
1A4ci	Agriculture/Forestry/Fishing: Stationary	PCB	0.041743	0.000004	2	150	150.013	0.000000	-0.099	0.000	-0.149	0.000%	0.000%
1A4ciii	Agriculture/Forestry/Fishing: National fishing	PCB	0.000412	0.000021	2	150	150.013	0.000000	-0.001	0.000	-0.001	0.000%	0.000%
2C1	Iron and steel production	PCB	0.000057	0.000003	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C5	Lead production	PCB	0.000000	0.000021	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%
2C6	Zinc production	PCB	0.000000	0.000003	2	20	20.100	0.000000	0.000	0.000	0.000	0.000%	0.000%
5C1biii	Clinical waste incineration	PCB	0.000238	0.008565	2	150	150.013	0.000514	0.175	0.175	0.262	0.005%	0.001%
5C1bv	Cremation	PCB	0.000000	0.004684	2	150	150.013	0.000154	0.096	0.096	0.144	0.003%	0.000%
5C2	Open burning of waste	PCB	0.963020	0.209467	10	150	150.333	0.308784	1.997	4.289	2.996	0.607%	0.093%
Total			4.883758	0.566687				1.647693	0.357%				
% uncertainty in total inventory (%)								128.362	Trend uncertainty (%):				5.978