

Inventory Review 2021

Review of emission data reported
under the LRTAP Convention

Stage 1 and 2 review

Status of gridded and LPS data

Katarina Mareckova
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CEIP

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¹ EMEP – Co-operative Programme for Monitoring and Evaluation of the Long-range Transmissions of Air Pollutants in Europe

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EXECUTIVE SUMMARY

The main objective of the *technical review² of national inventories* is to check and assess Parties' data, with a view to improve the quality of emission data and associated information reported to the Convention.

This report summarizes the main findings of the annual technical review³ (stage 1 and stage 2) of emission data, and status of reporting under the LRTAP Convention as of 1st June 2021.

Table 1 presents an overview on the submission status of 51 Parties to the Convention from which 27 are EU Member States. Most of the Parties to the LRTAP Convention submitted emission data and IIRs, but particularly some countries of the EMEP East area did not provide any information. 2021 was a reporting year for gridded data and LPS data. Projections, gridded data in new resolution and LPS data for reference years are still missing from a number of countries, especially from the EMEP East area (see Table 1). More detailed information can be found in the Appendix.

The assessment in Table 1 refers to:

- Article 8 of the 1979 Convention on Long-range Transboundary Air Pollution, Executive Body Decision 2013/04 (ECE/EB.AIR/122/Add.1) Annex I,
- Executive Body Decision 2013/03 (ECE/EB.AIR/122/Add.1),
- Guidelines for Reporting Emissions and Projections Data under the CLRTAP (ECE/EB.AIR/125)

² See EB Decision 2018/01 Updated methods and procedures for the technical reviews of air pollutant emission inventories reported under the Convention (ECE/EB.AIR/142/Add.1)

³ Review process: detailed information see at <https://www.ceip.at/review-of-emission-inventories/review-process>

Table 1: Overview on CLRTAP submission status by 1st June 2021

Country	Timeliness	Completeness	IIR	Projections**	LPS**	Gridded data**	Country	Timeliness	Completeness	IIR	Projections**	LPS**	Gridded data**
AL	🟡	🟡	🔴	🔴	🔴	🔴	IT	🟡	🟢	🟢	🟢	🔴	🔴
AM	🟡	🟡	🟡	🔴	🔴	🔴	KG	🟢	🔴	🔴	🔴	🔴	🔴
AT	🟢	🟢	🟢	🟢	🟢	🟢	KZ	🟢	🟢	🟡	🔴	🔴	🔴
AZ	🔴	🔴	🔴	🔴	🔴	🔴	LI	🟡	🟡	🟢	🔴	🔴	🔴
BA	🔴	🔴	🔴	🔴	🔴	🔴	LT	🟢	🟢	🟢	🟢	🟢	🔴
BE	🟢	🟢	🟢	🟢	🟢	🟢	LU	🟡	🟢	🟢	🟢	🟢	🟢
BG	🟢	🟢	🟢	🟢	🟢	🟢	LV	🟢	🟢	🟢	🟢	🟢	🟢
BY	🟢	🟡	🔴	🔴	🔴	🔴	MC	🟢	🟢	🟢	🟢	🟢	🟢
CA*	🟢	🟡	🟡				MD	🟡	🟢	🟢	🔴	🔴	🔴
CH	🟢	🟢	🟢	🟢	🟢	🟢	ME	🟢	🟢	🟢	🔴	🔴	🔴
CY	🟢	🟢	🟢	🟢	🟢	🟢	MK	🟢	🟢	🟢	🔴	🟢	🔴
CZ	🟢	🟢	🟢	🟢	🟢	🟢	MT	🟢	🟢	🟢	🟢	🔴	🔴
DE	🟢	🟢	🟢	🟢	🟢	🟢	NL	🟢	🟢	🟢	🟢	🟢	🟢
DK	🟢	🟢	🟢	🟢	🟢	🟢	NO	🟢	🟢	🟢	🟢	🟢	🟢
EE	🟢	🟢	🟢	🟢	🟢	🟢	PL	🟢	🟢	🟢	🟢	🟢	🟢
ES	🟢	🟢	🟢	🟢	🟢	🟢	PT	🟢	🟢	🟢	🔴	🟢	🟢
EU***	🟢	🟢	🟢	🟢	🟢	🟢	RO	🟢	🟢	🟢	🟢	🔴	🔴
FI	🟢	🟢	🟢	🟢	🟢	🟢	RS	🟢	🟢	🟢	🔴	🔴	🔴
FR	🟢	🟢	🟢	🟢	🟢	🟢	RU	🟢	🔴	🟢	🔴	🟢	🟢
GB	🟢	🟢	🟢	🟢	🟢	🟢	SE	🟢	🟢	🟢	🟢	🟢	🟢
GE	🟢	🟢	🔴	🟢	🔴	🔴	SI	🟢	🟢	🟢	🟢	🟢	🟢
GR	🟢	🟢	🟢	🟢	🟢	🟢	SK	🟢	🟢	🟢	🟢	🟢	🟢
HR	🟢	🟢	🟢	🟢	🟢	🟢	TR	🟢	🔴	🟢	🔴	🔴	🔴
HU	🟢	🟢	🟢	🟢	🔴	🔴	UA	🟡	🟡	🟢	🔴	🔴	🔴
IE	🟢	🟢	🟢	🟢	🔴	🔴	US*	🟢	🟡	🟢			
IS	🟢	🟢	🟢	🔴	🔴	🔴							

Legend to Table 1:

Timeliness: **green** – submission within deadline, **yellow** – submission after deadline, **red** – no submission

Completeness (CLRTAP): **green** – full priority + activity data all years;

yellow – up to ca. 80% priority (i.e. 10 of 13) (or all priority but not all years and/or no activity data);

red – below 80% priority

IIR: **green** – IIR submitted, structure and content correlate to the template;

yellow – IIR submitted, structure and content not like the template; **red** – no IIR submitted

Projections: **green** – min. 2020, 2025, 2030 reported; **yellow** – min. one year reported or submission after deadline;

red – no projections submitted

Gridded and LPS data: **green** – new gridded data for at least the years 2000, 2005, 2010 and 2015 submitted,

blue – new gridded data for at least one year submitted, **red** – no gridded data at all submitted, **empty** – no obligations

* Canada and the USA have different reporting obligations. They are not included in the EMEP LRT models so the reporting of LPS and gridded data is not required.

** 2021 was not a reporting year for Projections, but a reporting year for gridded data and LPS. All submitted Projections since 2019 are taken into account.

*** The EU has different reporting deadlines. EU may deliver emission and projections report by 30 April, its IIR by 30 May and its gridded data and LPS by 15 June.

1 INTRODUCTION

This report has been prepared by the Centre on Emission Inventories and Projections (CEIP). CEIP is a data centre under the European Monitoring and Evaluation Programme (EMEP). The report reflects the progress achieved in emission reporting under the LRTAP Convention during the 2021 reporting round.

Box 1. Reporting obligations and guidelines

The EMEP Executive Body Decision 2013/03 (ECE/EB.AIR/122/Add.1) adopted the „Guidelines for reporting emissions and projections data under the Convention on Long-range Transboundary Air Pollution” - latest version ECE/EB.AIR/128. Detailed information on reporting obligations under the CLRTAP convention can be found on the CEIP website <https://www.ceip.at/reporting-instructions>.

For more information on the review process please consider the technical report „Methodologies applied to the technical review of emission data” available on CEIP’s website: <https://www.ceip.at/review-of-emission-inventories/technical-review-reports>.

Table 2: Reporting obligations and deadlines under CLRTAP

Deadlines	CLRTAP	
Emission data	15. February	annually
IIR	15. March	annually
Projections	15. March	every four years (starting year 2015)
Gridded Data	1. May	every four years (starting year 2017)
LPS information	1. May	every four years (starting year 2017)

This report summarises the main findings of the annual technical review of emission data, focusing on future challenges for improving the quality of this data reported under the Convention. The current year is compared with the status in 2008, when the review process was performed for the first time to present the progress of the reporting status.

The review assesses the transparency, consistency, comparability, completeness and accuracy of reported data⁴. Details on the review methods can be found in *the Methodology Report – Review of emission data reported under the LRTAP Convention* (<https://www.ceip.at/review-of-emission-inventories/review-process>).

⁴ See Reporting guidelines 2014, section III, para 5 (a) to (e) for definitions.

All Parties to the LRTAP Convention which submitted data⁵ in the *standard format* before 01st June 2021 were included in the review. This review report is structured as follows:

- In chapter 2, the results of the initial review (the stage 1) are presented, covering timeliness, completeness, format and transparency of the submission.
- Chapter 3 provides a summary of findings of the extended review (stage 2). Within that stage, differences in emissions due to recalculations, the share of sectors and the consistency of the time series were analysed. Additional checks were made which included the key categories emissions per capita, and gross national income. In addition, completeness of gridded emission data and of large point sources (LPS) data are discussed in chapter 4.
- A table with detailed information per country on reporting in 2021 is provided in the Appendix.

The stage 1 and stage 2 review is annually complemented with an in-depth review (S3) of selected Parties (in 2021: Kazakhstan, Liechtenstein, Monaco and Montenegro).

S3 review findings are published in individual country reports at

<https://www.ceip.at/review-of-emission-inventories/in-depth-review-of-ae-inventories>.

Findings of the stage 1 (S1) and stage 2 (S2) on country level for the CLRTAP inventories can be found in the stage 1 and stage 2 review reports available at <https://www.ceip.at/status-of-reporting-and-review-results/2021-submission> and summary information, detailed comparison of Parties and additional checks are presented interactively in the dataviewers on CEIP's homepage at <https://www.ceip.at/review-of-emission-inventories/technical-review-reports>.

Table 3: Overview of dataviewers 2021 with detailed information on country level

Dataviewers 2021	
1	Completeness
2	Recalculations
3	KCA
4	Share of sectors
5	Emissions per capita and per GDP

⁵ See details at <https://www.ceip.at/status-of-reporting-and-review-results/2021-submission>

2 INITIAL (STAGE 1) REVIEW

Key messages

Over the last 13 years, timeliness and completeness of reporting has improved:

Timeliness: Until 1st of June 2021, 48 Parties reported CLRTAP data, which is an increase of 26% compared to the number of Parties submitting in 2008 - 38 Parties submitted data in the same timeframe in the first year, in which the annual inventory review took place. 40 Parties provided their submissions by the due date of 15 February 2021. No data were provided (by 1st June) by three Parties with mandatory reporting obligations - **Azerbaijan, Bosnia and Herzegovina and Kyrgyzstan**.

Completeness - pollutants: Main pollutants (CLRTAP) were reported by 48 Parties in 2021 compared to 38 in 2008. Cadmium, Mercury and Lead emissions were reported by 46 Parties, additional HMs by 40, PMs by 46 and priority POPs by 45 Parties. Activity data for the year 2019 were reported by 41 Parties (see Appendix, Table 9). Black Carbon (BC) was voluntarily reported for the first time in 2015 by 28 countries. In the 2021 submission 42 Parties submitted data on BC emissions at least for the year 2019.

92% of the Parties (44 Parties), that submitted data, also provided an Informative Inventory Report (IIR) with their CLRTAP submission in 2021 compared to 71% in 2008. It should be noted that the provision of an IIR is essential for a complete centralised stage 3 review.

Projections: 2021 was not a reporting year for projections. Nonetheless 27 Parties (17 in 2008, 27 in 2019 (reporting year), 7 in 2020) submitted emission projections.

Gridded data and LPS: 2021 was a reporting year for gridded data and LPS. 26 Parties reported gridded data until the 1st of June. LPS were reported by 31 Parties.

Albania, Armenia, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Montenegro, Republic of Moldova, Ukraine and Turkey are in particular encouraged to make efforts to improve the regularity, completeness and transparency of their reporting.

Although the quality of the data submitted by the Parties to the LRTAP Convention has improved over the years in terms of completeness, consistency and timeliness not all Parties provide a complete time series for emission inventory data. Therefore, the viability for time series assessments for these countries is limited. Hence, further improvement of submissions in the above-mentioned aspects of data quality is strongly recommended: **Azerbaijan, Bosnia and Herzegovina and Kyrgyzstan** did not report any data to EMEP. **Armenia, Belarus and Ukraine** only provided data for the current reporting year. Other countries - namely the **Russian Federation (2010 to 2019)** and **the United States (2018, 2019)** - provided data for a few/several years only.

Format of data: For CEIP the use of the standardised reporting format is inevitable for efficient processing of data. All Parties but Liechtenstein submitted their inventories using the revised NFR 2019-1 templates⁶.

Transparency and Informative Inventory Reports: Transparency means that Parties provide clear documentation (IIR) and references, and that they report emissions and activity data at a level of disaggregation, which provides sufficient understanding of

⁶ Reporting templates can be downloaded from the CEIP website at <https://www.ceip.at/reporting-instructions/annexes-to-the-2014-reporting-guidelines>

how the inventory was compiled, thereby ensuring that it meets good practice requirements. Parties are strongly encouraged to submit the IIR7.

Data viewer

Additional information is presented in the *Dataviewer* on the *CEIP webpage*.

Link: <https://www.ceip.at/review-of-emission-inventories/technical-review-reports/rr2021>

An up-to-date overview of the data as submitted by Parties during the 2021 reporting round is available at www.ceip.at/status-of-reporting-and-review-results/2021-submission.

In addition, officially reported emission data can be accessed online at www.ceip.at/webdab-emission-database/reported-emissiondata.

⁷ see Reporting Guidelines 2014, para 43 (ECE/EB.AIR/125)

3 EXTENDED (STAGE 2) REVIEW

Key messages:

Recalculations of 2005, 2010 and 2015 emissions: 16 Parties reported recalculations higher than 30% on national total level for the years 2005, 2010 and 2015. High recalculations occurred most frequently for PM₁₀, followed by BC. For those recalculations above 30% the country IIRs have been considered to identify the reasons behind the recalculations. Common reasons for recalculations were changes in activity data, methodology and emission factors.

Key category analysis: A number of emission categories have been identified as key categories for both the ‘EMEP East’ and ‘EMEP West’ area country groups. Combustion of fossil fuels in energy industries and transport is the most important contributor to emissions of NO_x, SO_x and PM. The sectors are also dominating emissions sources of HMs and POPs. NH₃ occurs mainly in the agricultural sector (the agricultural sector is responsible for more than 80% of NH₃ emissions in the some countries). A significant difference for some pollutants (e.g. POPs, PMs) in the number of key categories was observed between ‘EMEP East’ - and ‘EMEP West’ areas. This might be partly due to real differences in emissions but might also indicate that inventories are often not complete and/or Parties allocate emissions to NFR categories not always in line with the EMEP/EEA Inventory guidebook⁸.

Emissions per capita for at least one pollutant, in some cases for several pollutants, rose in 22 countries between 1990 and 2019 (2000 and 2019 for PMs) whereas **emissions per gross domestic product based on purchasing power parity (GDP/PPP)** for at least one pollutant rose for 18 Parties over the same time period. Changes were only analysed if the country reported values for 1990 (2000 for PMS) as well as for the current year.

Data viewer

Additional information is presented in the *Dataviewer* on the CEIP webpage.
Link: <https://www.ceip.at/review-of-emission-inventories/technical-review-reports/rr2021>

3.1 Consistency between PM₁₀-, PM_{2.5}- and BC emissions (1990-2019)

The focus on checks on time series consistency presented in this report is on the consistency between reported PM₁₀-, PM_{2.5}- and BC emissions.

Checks addressing time series consistency of reported data at sector level are provided at the CEIP website and can be accessed via the interactive data viewer <http://www.ceip.at/data-viewer>.

As PM_{2.5} emissions are assumed to be a subset of PM₁₀ emissions, it was checked whether the former are lower than the latter in all years for all countries.

⁸ EMEP/EEA air pollutant emission inventory guidebook 2019, see <https://www.eea.europa.eu/publications/emep-eea-guidebook-2019>

Another basic comparison was performed to check whether reported BC emissions are lower than reported PM_{2.5} emissions.

A comparison of the share of the national total of PM_{2.5} in the national total of PM₁₀ was made to identify differences between the submitting Parties (Figure 1).

As in previous years, Armenia reported the same number of PM₁₀ as for PM_{2.5} for 2014 as national total.

The analysis also shows dips and jumps for some countries, which might indicate time series inconsistencies in either PM_{2.5} or PM₁₀ submissions. Further, countries like *Armenia, Azerbaijan, Canada, Kazakhstan, Malta, Russia, Turkey, Ukraine and the US* have a relatively low PM_{2.5} share between **0.5%** and **39%**. On the upper end, countries as *Albania, Georgia, Luxembourg, Montenegro and Slovakia* show a share above **90%**. Albania reported high values for PM_{2.5} from 2009 onwards, which could indicate potential erroneous reporting. The majority of the submitting Parties have a share around the 67% range.

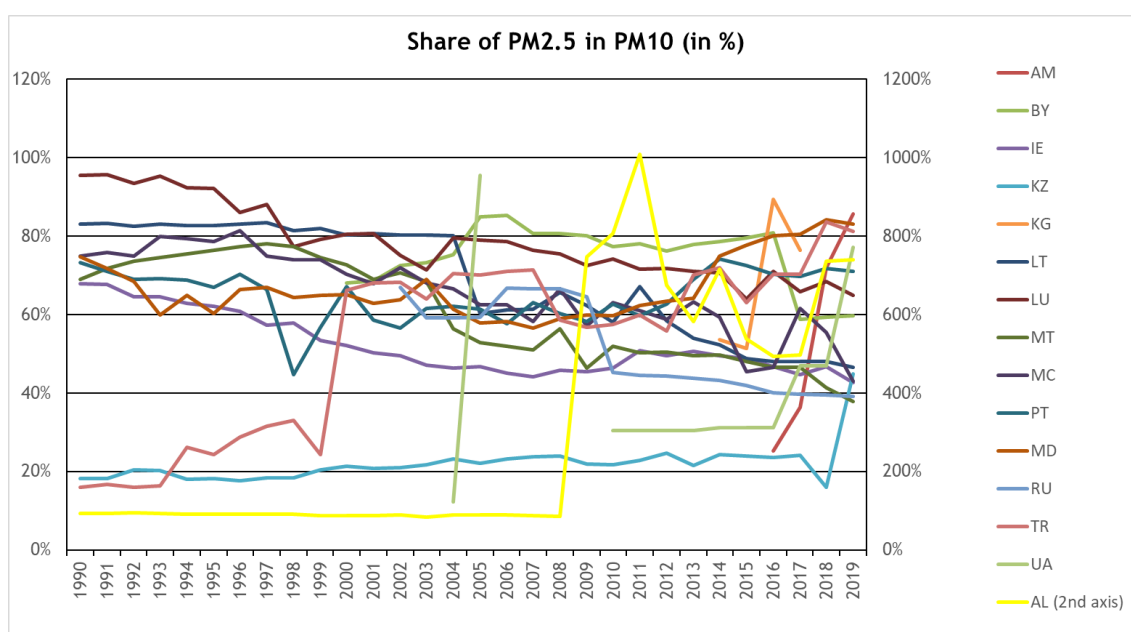


Figure 1: Share in percent of PM_{2.5} national total emissions in PM₁₀ national total emissions 2000-2019. Only parties shown where differences greater than 25% occurred (difference between minimum and maximum share)

3.2 Key category analysis (KCA)

KCA helps to identify significant air pollution sources in the EMEP area and in individual countries. Key categories are those categories that cumulatively contribute 80% of the total emissions of a specific pollutant. The [Dataviewer](#) shows the share of the key categories in the total emissions for the two groups of Parties: on the one hand for the group of ‘EMEP West’⁹ area and on the

⁹ Please note that for the ‘EMEP West’ area Bosnia and Herzegovina is not included as no data was reported.

other hand for the ‘EMEP East’ area¹⁰. Results of KCA for individual Parties can be downloaded from <https://www.ceip.at/status-of-reporting-and-review-results/2021-submission>.

Most of the reporting ‘EMEP West’ Parties submitted emission data for BC, except Austria and Luxembourg. Most of the reporting ‘EMEP East Parties submitted emission data for this pollutant at least for one year, except Russia and Turkey.

3.3 Share of aggregated sectors (GNFR¹¹)

The share of aggregated NFR14 sectors for each pollutant and each party was assessed to check consistency of reporting between the countries and also potentially identify outliers in reporting.

Figures with comparisons are provided in [Dataviewer](#).

3.4 Comparability – emissions per capita, emissions per GDP

Population and GDP/PPP (gross domestic product/purchasing power parity) have been selected as indicators for the comparison with national total emissions available in standardised format for all Parties. The aim is to further elaborate the check with additional parameters that are relevant for selected key categories/pollutants.

National total emissions reported for 1990 or 2000 (for PM) and 2019 were divided by the number of inhabitants and by the total value of the GDP/PPP. Values for each Party are presented in the [Dataviewer](#). It should be noted that not all Parties submitted 1990 and 2019 data for all analyzed pollutants, and that therefore these statistics cannot fully reflect the developments in the whole EMEP domain. Tables with complete time series for these indicators were posted in a separate file on the CEIP webpage (www.ceip.at/status-of-reporting-and-review-results/2021-submission).

The [Dataviewer](#) shows that for all assessed pollutants the highest and lowest per capita emissions per GDP/PPP emissions differ significantly from the average values (sometimes by a few orders of magnitude). A more detailed analysis of these indicators is outside the scope of this report, but the information is regularly provided to the reviewers during the checking of national inventories under the stage 3 review. Outliers might indicate differences in national economies but also errors in calculations. Low per capita and per GDP/PPP emissions in some Parties also seem to indicate incomplete national inventories, particularly with respect to PM and POPs data. More detailed information on country level is provided in the [Dataviewer](#) on the CEIP webpage (www.ceip.at/status-of-reporting-and-review-results/2021-submissions).

¹⁰ Please note that for the ‘EMEP East’ area Azerbaijan and Kyrgyzstan are not included as no data was reported.

¹¹ The allocation of NFR14 sector codes to GNFR codes is provided in the [conversion table](#) on the CEIP homepage

4 INITIAL CHECKS OF GRIDDED EMISSIONS AND LARGE POINT SOURCES

Key messages:

In total 34 Parties provided gridded sectoral emissions in 0.1° x 0.1° (long/lat) resolution until June 2021 in this or a previous submission. This covers 79% of the area of all reporting Parties.

Until June 2021, 29 Parties reported sectoral data in the new EMEP grid resolution of 0.1° x 0.1° (long/lat) for the year 2019.

For about 56% of the grid cells from 49¹² Parties, data on spatially distributed emissions had to be partly or completely estimated or adjusted by CEIP.

43 out of 49 Parties submitted Large Point Source (LPS) data (in this or a previous submission). Six parties (Armenia, Belarus, Bosnia and Herzegovina, Kyrgyzstan, Liechtenstein and Montenegro) did not report any LPS until June 2021.

4.1 Reporting of gridded emissions in 2021

Completeness: Gridded data is part of the four-year reporting obligation and was due in 2021. Until June 2021 twenty-nine Parties, which are considered to be part of the extended EMEP area, did report sectoral gridded emissions in resolution 0.1° x 0.1° long/lat and all of them reported gridded emissions for the year 2019. In addition one Party reported gridded emissions for 2015 and 2019; one Party for the years 2000, 2005, 2010, 2015 and 2019; One Party for the years 1990, 2000, 2005, 2010, 2015 and 2019; five Parties for the years 1990, 1995, 2000, 2005, 2010, 2015 and 2019; one Party for the time series from 2014 to 2019; One Party for the whole time series from 1990 to 2019 and one Party for the whole time series from 1980 to 2019.

In total **34** Parties provided gridded GNFR14 sectoral emissions in 0.1° x 0.1° (long/lat) resolution so far in this or a previous submission (see Figure 2).

No gridded sectoral data so far, neither in 0.1° x 0.1° (long/lat) nor in 50 x 50 km² PS resolution, was submitted by Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Kazakhstan, Kyrgyzstan, Liechtenstein, Montenegro, Moldova, Serbia and Turkey.

From Belarus, Iceland and Ukraine reported gridded sectoral data is available only in the old 50 x 50 km² PS resolution.

Completeness pollutants: Until June 2021 34 Parties reported **sectoral gridded emissions for at least one year in 0.1° x 0.1° resolution** for main pollutants, particulate matter, heavy metals and persistent organic pollutants in this or a previous submission.

Reported gridded sectoral data in 0.1° x 0.1° (long/lat) resolution covers 79% of the grid cells of all reporting Parties (see Figure 14).

More information on gridded data is available via the CEIP website at <https://www.ceip.at/the-emep-grid>.

¹² Without Canada and the United States of America.

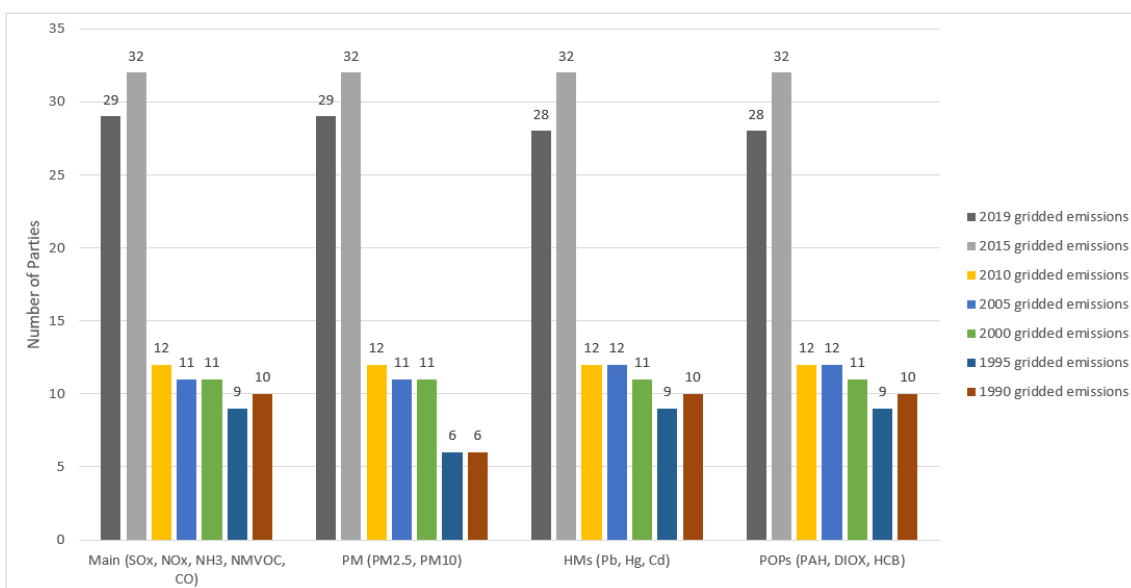


Figure 2: Total number of Parties reporting gridded sectoral data in 0.1° x 0.1° (long/lat) resolution for the years 1990, 1995, 2000, 2005, 2010, 2015 and 2019, reported to EMEP by 2021

Main pollutants (NO_x, NMVOC, SO_x, NH₃, CO) and PM (PM_{2.5}, PM₁₀)

Priority heavy metals (Pb, Cd, Hg) and POPs (PCDD/PCDF, PAH and HCB)

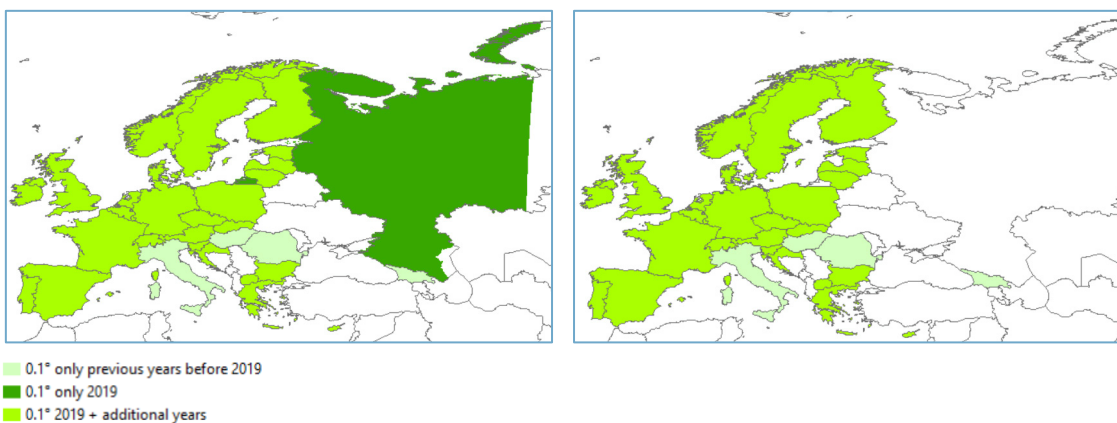


Figure 3: Visualisation of reported gridded emissions in 0.1° x 0.1° (long/lat) resolution in the EMEP area.

For *Portugal* the spatial disaggregation of sector ‘F – Road Transport’ was replaced by CAMS proxies. Reported gridded data from *Italy* was replaced by CAMS and EDGAR proxies. The grid reporting from Malta was not in the defined 0.1°x0.1° coordinates and had to be replaced by CAMS and EDGAR proxies. The submission of gridded emissions for the year 2019 from North Macedonia, Ireland, Lithuania and the Russian Federation was too late to be considered for the preparation of gridded data in 2021.

For about 56% of the grid cells from 49 reporting Parties to the LRTAP Convention¹³ data on spatially distributed emissions had to be partly or completely estimated or adjusted by air pollutant emission experts in 2021. This is, either because this information was missing or because the reported data could not be used (areas with no reporting at all, like the sea areas, North Africa and areas in the extended EMEP domain are not considered here).

More detailed information on the gap-filling and gridding for emission data used in EMEP models can be found in the „EMEP Status Report 2/2021¹⁴”.

4.2 Large point sources (LPS)

„Large point sources” (LPS) are defined as facilities whose combined emissions, within the limited identifiable area of the site premises, exceed certain pollutant emission thresholds¹⁵. LPS reporting is encouraged to include information on stack heights according to the stack height class categories as defined in the emission reporting guidelines¹⁶. Submitted LPS information should be consistent with the information reported for European Pollutant Release and Transfer Register (E-PRTR) facilities¹⁷

Forty-three out of 49 parties submitted LPS data in this or a previous submission. Until June 2021 twenty-three Parties submitted LPS data for 2019; Two Parties for 2015 and 2019; One Party for 2010, 2015 and 2019; One Party for 2017, 2018 and 2019; Three Parties for 1990, 1995, 2000, 2005, 2010, 2015 and 2019; One Party for the time series from 2014 to 2019; One Party for the time series from 2007 to 2019 and one Party for the whole time series from 1990 to 2019. Six parties (Armenia, Belarus, Bosnia and Herzegovina, Kyrgyzstan, Liechtenstein and Montenegro) did not report any LPS data yet.

Figure 15 presents maps for main pollutants, PMs, priority heavy metals and POPs with Large Point sources reported until 2021.

¹³ Without Canada and the United States of America.

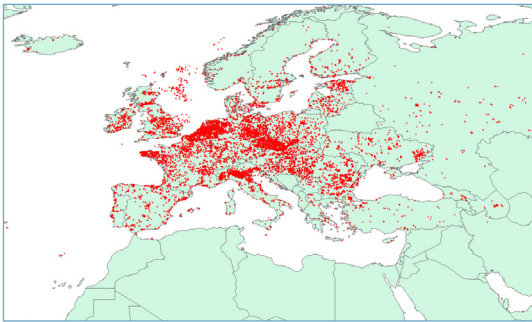
¹⁴ http://www.emep.int/mscw/mscw_publications.html

¹⁵ These thresholds have been extracted from the full list of pollutants in Regulation (EC) No. 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC (E-PRTR Regulation) and its annex II 6. See Table 1 in Guidelines for Reporting Emissions and Projections Data under the Convention on Long-range Transboundary Air Pollution – ECE/EB.AIR/125 (www.unece.org/fileadmin/DAM/env/documents/2013/air/eb/ece.eb.air.125_E_ODS.pdf)

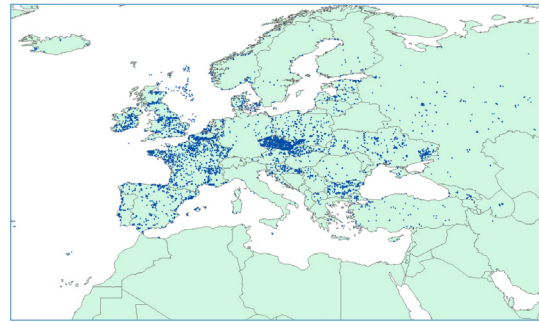
¹⁶ See Table 2 in Guidelines for Reporting Emissions and Projections Data under the Convention on Long-range Transboundary Air Pollution – ECE/EB.AIR/125 (www.unece.org/fileadmin/DAM/env/documents/2013/air/eb/ece.eb.air.125_E_ODS.pdf)

¹⁷ <https://prtr.eea.europa.eu>

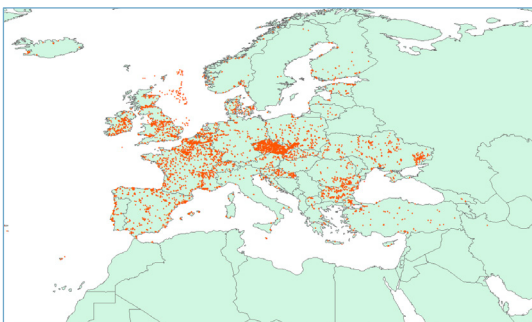
Main pollutants (NO_x, NMVOC, SO_x, NH₃, CO)



Particulate matter (PM_{2.5}, PM₁₀)



Priority heavy metals (Pb, Cd, Hg)



POPs (PCDD/PCDF, PAH and HCB)

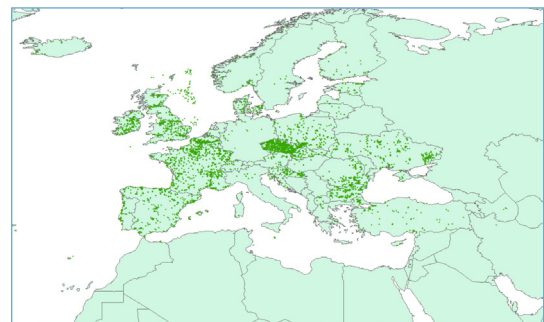


Figure 4: Maps with Large Point Sources reported until 2021

5 UNITS AND ABBREVIATIONS

5.1 Units

kg.....	1 kilogram = 10 ³ g (gram)
t.....	1 tonne (metric) = 1 megagram (Mg) = 10 ⁶ g
kt.....	1,000 tonnes ...
Mg.....	1 megagram = 10 ⁶ g = 1 tonne (t)
Gg.....	1 gigagram = 10 ⁹ g = 1 kilotonne (kt)
Tg.....	1 teragram = 10 ¹² g = 1 megatonne (Mt)
TJ.....	1 terajoule

5.2 Abbreviations

As.....	Arsenic
BC.....	Black carbon – carbonaceous particulate matter that absorbs light
Cd.....	Cadmium
CDR.....	Central data repository of EEA’s Eionet Reportnet
CEIP.....	EMEP Centre on Emission Inventories and Projections
CH ₄	Methane
CLRTAP.....	LRTAP Convention
CO.....	Carbon monoxide
CO ₂	Carbon dioxide
COPERT.....	Computer Programme to calculate Emissions from Road Transport
Cr.....	Chromium
CRF.....	Common reporting format (UNFCCC for greenhouse gases)
Cu.....	Copper
EEA.....	European Environment Agency
Eionet.....	European environmental information and observation network
EMEP.....	Co-operative Programme for Monitoring and Evaluation of the Long-range Transmissions of Air Pollutants in Europe
E-PRTR.....	European Pollutant Release and Transfer Register
ETC/ATNI.....	European Topic Centre on Air pollution, Transport, Noise and Industrial pollution
EU.....	European Union
GDP, PPP.....	Gross domestic product converted to international dollars using purchasing power parity rates
HCB.....	Hexachlorobenzene – Chemical Abstracts Service (CAS) Registry Number 118-74-1
Hg.....	Mercury
HMs.....	Heavy metals
IIR.....	Informative inventory report
IEF.....	Implied emission factor
KCA.....	Key category analysis

LRTAP Convention....	UNECE Convention on Long-range Transboundary Air Pollution
LRT	Long Range Transport
LPS	Large point source
Main pollutants.....	NO _x , NMVOC, SO _x , NH ₃ and CO
Main HMs	Cd, Hg and Pb
NECD.....	National Emission Reduction Commitments Directive (Directive 2016/2284)
NFR.....	UNECE Nomenclature For Reporting (of air pollutants)
NH ₃	Ammonia
Ni.....	Nickel
NMVOCs	Non-methane volatile organic compounds – all organic compounds of an anthropogenic nature, other than methane, that are capable of producing photochemical oxidants by reaction with nitrogen oxides in the presence of sunlight
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides – means nitric oxide and nitrogen dioxide, expressed as nitrogen dioxide (NO ₂);
PAHs	Polycyclic aromatic hydrocarbons – for the purposes of emission inventories, the following four indicator compounds shall be used: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3_cd)pyrene;
Pb.....	Lead
PCBs.....	Polychlorinated biphenyls – aromatic compounds formed in such a manner that the hydrogen atoms on the biphenyl molecule (two benzene rings bonded together by a single carbon-carbon bond) may be replaced by up to 10 chlorine atoms;
PCDD/PCDF	Dioxins and furans – polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF), tricyclic, aromatic compounds formed by two benzene rings, connected by two oxygen atoms in PCDD and by one oxygen atom in PCDF, and the hydrogen atoms of which may be replaced by up to eight chlorine atoms;
PM.....	Particulate matter – air pollutant consisting of a mixture of particles suspended in the air. These particles differ in their physical properties (such as size and shape) and chemical composition.
PM ₁₀	Particulate matter, or particles with an aerodynamic diameter equal to or less than 10 (µm);
PM _{2.5}	Particulate matter, or particles with an aerodynamic diameter equal to or less than 2.5 micrometres (µm);
POPs.....	Persistent organic pollutants
Se.....	Selenium
SO ₂	Sulphur dioxide
SO _x	Sulphur oxides – means all sulphur compounds expressed as sulphur dioxide (SO ₂) (including sulphur trioxide (SO ₃), sulphuric acid (H ₂ SO ₄), and reduced sulphur compounds, such as hydrogen sulphide (H ₂ S), mercaptans and dimethyl sulphides, etc.);
TSP	Total suspended particles
UNECE.....	United Nations Economic Commission for Europe
UNFCCC.....	United Nations Framework Convention on Climate Change
VOCs.....	Volatile organic compounds
Zn	Zinc

5.3 ISO Country codes

AL	Albania	IT	Italy
AM	Armenia	KG	Kyrgyzstan
AT	Austria	KZ.....	Kazakhstan
AZ	Azerbaijan	LI	Liechtenstein
BA	Bosnia and Herzegovina	LT	Lithuania
BE.....	Belgium	LU.....	Luxembourg
BG	Bulgaria	LV.....	Latvia
BY	Belarus	MC	Monaco
CA	Canada	MD.....	Republic of Moldova
CH	Switzerland	ME	Montenegro
CY	Cyprus	MK.....	North Macedonia
CZ.....	Czechia	MT	Malta
DE	Germany	NL.....	Netherlands
DK	Denmark	NO	Norway
EE.....	Estonia	PL	Poland
ES	Spain	PT	Portugal
EU	European Union	RO.....	Romania
FI	Finland	RS	Serbia
FR.....	France	RU.....	Russian Federation
GB	United Kingdom	SE	Sweden
GE	Georgia	SI.....	Slovenia
GR.....	Greece	SK	Slovakia
HR	Croatia	TR.....	Turkey
HU	Hungary	UA	Ukraine
IE.....	Ireland	US.....	United States of America
IS	Iceland		

‘**EMEP West**’ comprises Albania, Austria, Belgium, Bosnia & Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, Germany, Denmark, Estonia, European Union, Finland, France, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malta, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

‘**EMEP East**’ comprises Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Turkey and Ukraine.

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APPENDIX

Status of 2021 reporting

Table 4: Status of reporting under the LRTAP Convention as of 1st June 2021.

PARTY	Submission Date EMEP	Latest re-submission	NFR template (version)	Gridded Data	LPS Data	2021 Proj.	IIR 2021
Albania	16.02.2021	07.05.2021	2019-1				
Armenia	26.02.2021		2019-1				x
Austria	15.02.2021		2019-1	x	x		x
Azerbaijan							
Belarus	15.02.2021		2019-1				
Belgium	15.02.2021	08.03.2021	2019-1	x	x	x	x
Bosnia & Herzegovina							
Bulgaria	12.02.2021	21.04.2021	2019-1	x	x	x	x
Canada	15.02.2021		2019-1			x	x
Croatia	10.02.2021		2019-1	x	x	x	x
Cyprus	15.02.2021	12.03.2021	2019-1	x	x	x	x
Czechia	15.02.2021	29.03.2021	2019-1	x	x	x	x
Denmark	15.02.2021		2019-1	x	x	x	x
Estonia	09.02.2021	08.03.2021	2019-1	x	x	x	x
European Union	29.04.2021		2019-1				
Finland	15.02.2021		2019-1	x	x	x	x
France	15.02.2021	07.04.2021	2019-1	x	x		x
Georgia	13.02.2021	26.04.2021	2019-1			x	
Germany	09.02.2021		2019-1	x	x	x	x
Greece	15.02.2021		2019-1	x	x	x	x
Hungary	15.02.2021	15.03.2021	2019-1		x	x	x
Iceland	15.02.2021	31.03.2021	2019-1		x		x
Ireland	15.02.2021		2019-1		x		x
Italy	16.02.2021	15.03.2021	2019-1			x	x
Kazakhstan	01.02.2021		2019-1		x		x
Kyrgyzstan							
Latvia	15.02.2021	15.03.2021	2019-1	x	x	x	x
Liechtenstein	08.04.2021		2014-2				x
Lithuania	13.02.2021		2019-1			x	x
Luxembourg	16.02.2021	15.03.2021	2019-1	x	x	x	x
Malta	15.02.2021		2019-1		x	x	x
Monaco	15.02.2021	02.03.2021	2019-1	x	x	x	x
Montenegro	15.02.2021		2019-1				x
Netherlands	14.02.2021	15.03.2021	2019-1	x	x	x	x
North Macedonia	12.02.2021	08.03.2021	2019-1		x		x
Norway	11.02.2021		2019-1	x	x	x	x

PARTY	Submission Date EMEP	Latest re-submission	NFR template (version)	Gridded Data	LPS Data	2021 Proj.	IIR 2021
Poland	15.02.2021		2019-1	x	x	x	x
Portugal	11.02.2021	15.03.2021	2019-1	x			x
Republic of Moldova	19.02.2021	23.04.2021	2019-1				x
Romania	12.02.2021	12.03.2021	2019-1				x
Russian Federation	12.02.2021		2019-1	x	x		x
Serbia	12.02.2021	17.02.2021	2019-1		x		x
Slovakia	15.02.2021	15.03.2021	2019-1	x	x	x	x
Slovenia	12.02.2021		2019-1	x	x	x	x
Spain	29.01.2021	17.03.2021	2019-1	x	x		x
Sweden	12.02.2021		2019-1	x	x	x	x
Switzerland	12.02.2021		2019-1	x	x	x	x
Turkey	15.02.2021	04.03.2021	2019-1				x
Ukraine	30.03.2021	30.04.2021	2019-1				x
United Kingdom	12.02.2021		2019-1	x	x	x	x
USA	15.02.2021		2019-1				x

Table 5: Completeness of CLRTAP submissions as of 1st June 2021.

PARTY	SO ₂ , NO _x , CO, NH ₃ , NMVOC	Cd,Hg, Pb	additional HMs	PM _{2.5} , PM ₁₀	TSP	BC	POPs (PAH PCDD/PCDF, HCB, PCBs)	Activity Data
Albania	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Armenia	2019	2019	2019	2019	2019	2019	2019	
Austria	1990 - 2019	1990 - 2019		1990 - 2019	1990 - 2019		1990 - 2019	1990 - 2019
Azerbaijan								
Belarus	2019	2019	2019	2019	2019	2019	2019	2019
Belgium	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Bosnia & Herzegovina								
Bulgaria	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Canada	1990 - 2019	1990 - 2019		1990 - 2019	1990 - 2019	2013 - 2019	1990 - 2019	
Croatia	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Cyprus	1990 - 2019	1990 - 2019	1990 - 2019	2000 - 2019	2000 - 2019	2000 - 2019	1990 - 2019	1990 - 2019
Czechia	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Denmark	1980 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Estonia	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
EU	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	
Finland	1980 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
France	1980 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Georgia	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Germany	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Greece	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Hungary	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019

PARTY	SO ₂ , NO _x , CO, NH ₃ , NMVOC	Cd,Hg, Pb	additional HMs	PM _{2.5} , PM ₁₀	TSP	BC	POPs (PAH PCDD/PCDF , HCB, PCBs)	Activity Data
Iceland	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Ireland	1987, 1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Italy	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Kazakhstan	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Kyrgyzstan								
Latvia	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Liechtenstein	1990 - 2018	1990 - 2018		1990 - 2018	1990 - 2018		1990 - 2018	
Lithuania	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Luxembourg	1990 - 2019	1990 - 2019		1990 - 2019	1990 - 2019		1990 - 2018	1990 - 2018
Malta	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Monaco	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Montenegro	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Netherlands	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
North Macedonia	1980, 1987, 1988, 1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Norway	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Poland	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Portugal	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Republic of Moldova	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Romania	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Russian Federation	2010 - 2019			2010 - 2019	2010 - 2019			2010 - 2019
Serbia	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Slovakia	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Slovenia	1980 - 2019	1990 - 2019	1990 - 2019	2000 - 2019	2000 - 2019	2000 - 2019	1990 - 2019	1990 - 2019
Spain	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Sweden	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
Switzerland	1980 - 2019	1980 - 2019		1980 - 2019	1980 - 2019	1980 - 2019	1980 - 2019	1980 - 2019
Turkey	1990 - 2019	1990 - 2019		1990 - 2019				
Ukraine	2019	2019	2019	2019	2019	2019	2019	
United Kingdom	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019	1990 - 2019
USA	2018 - 2019			2018 - 2019				

Table 6: Completeness of CLRTAP submissions as of 1st June 2021
(since 2015 reporting of Projections mandatory every 4 years, since 2017 reporting of Gridded data and LPS data mandatory every 4 years).

PARTY	Template version 2014-1 or 2014-2				Gridded	LPS Emissions
	Projections WM	Projections WaM	Activity data WM	Activity data WaM	0.1° x 0.1°	
Albania						
Armenia						
Austria					2000, 2005, 2010, 2015, 2019	2010, 2015, 2019
Azerbaijan						
Belarus						
Belgium	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2019	2019
Bosnia & Herzegovina						
Bulgaria	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2019	2019
Canada	2020, 2025, 2030		2020, 2025, 2030			
Croatia	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	1990, 1995, 2000, 2005, 2010, 2015, 2019	1990, 1995, 2000, 2005, 2010, 2015, 2019
Cyprus	2020, 2025, 2030		2020, 2025, 2030		1990, 1995, 2000, 2005, 2010, 2015, 2019	1990, 1995, 2000, 2005, 2010, 2015, 2019
Czechia	2020, 2025, 2030, 2035, 2040	2020, 2025, 2030, 2035, 2040	2020, 2025, 2030, 2035, 2040	2020, 2025, 2030, 2035, 2040	2019	2019
Denmark	2020, 2025, 2030, 2040				2019	2019
Estonia	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2019	1990, 1995, 2000, 2005, 2010, 2015, 2019
EU						
Finland	2020, 2025, 2030		2020, 2025, 2030		1990, 1995, 2000, 2005, 2010, 2015, 2019	2019
France					2019	2019
Georgia	2020, 2025, 2030		2020, 2025, 2030			

PARTY	Template version 2014-1 or 2014-2				Gridded	LPS Emissions
	Projections WM	Projections WaM	Activity data WM	Activity data WaM	0.1° x 0.1°	
Germany	2020, 2025, 2030	2020, 2025, 2030			1990, 1995, 2000, 2005, 2010, 2015, 2019	2019
Greece	2020, 2025, 2030, 2035, 2040		2020, 2025, 2030		2019	2019
Hungary	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030		2019
Iceland						2019
Ireland						2019
Italy	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030		
Kazakhstan						2015, 2019
Kyrgyzstan						
Latvia	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2019	2019
Liechtenstein						
Lithuania	2020, 2025, 2030, 2040	2020, 2025, 2030, 2040	2020, 2025, 2030, 2040	2020, 2025, 2030, 2040		
Luxembourg	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2019	2017, 2018, 2019
Malta	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030		2019
Monaco	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2014 - 2019	2014 - 2019
Montenegro						
Netherlands	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2020, 2025, 2030	2019	2019
North Macedonia						2015, 2019
Norway	2020, 2025, 2030				1990, 1995, 2000, 2005, 2010, 2015, 2019	2019
Poland	2020, 2025, 2030, 2040	2020, 2025, 2030, 2040	2020, 2025, 2030, 2040	2020, 2025, 2030, 2040	2019	2019
Portugal					2019	2019
Republic of Moldova						
Romania						
Russian Federation					2019	2019

PARTY	Template version 2014-1 or 2014-2				Gridded	LPS Emissions
	Projections WM	Projections WaM	Activity data WM	Activity data WaM	0.1° x 0.1°	
Serbia						2019
Slovakia	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2019	2019
Slovenia	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2019	2019
Spain	2020, 2025, 2030, 2040	2020, 2025, 2030, 2040	2020, 2025, 2030, 2040	2020, 2025, 2030, 2040	1990 - 2019	1990 - 2019
Sweden					1990, 2000, 2005, 2010, 2015, 2019	2019
Switzerland	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	2020, 2025, 2030, 2040, 2050	1980 - 2019	2007 - 2019
Turkey						
Ukraine						
United Kingdom	2020, 2025, 2030		2020, 2025, 2030		2019	2019
USA						

DATAVIEWER

The dataviewer containing five different subcategories is available on CEIP’s homepage at: www.ceip.at/review-of-emission-inventories/technical-review-reports

Table 7: Overview of dataviewer content to the Inventory Report 2021

Dataviewer 2021	
1	Completeness
2	Recalculations
3	KCA
4	Share of sectors
5	Emissions per capita and per GDP

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