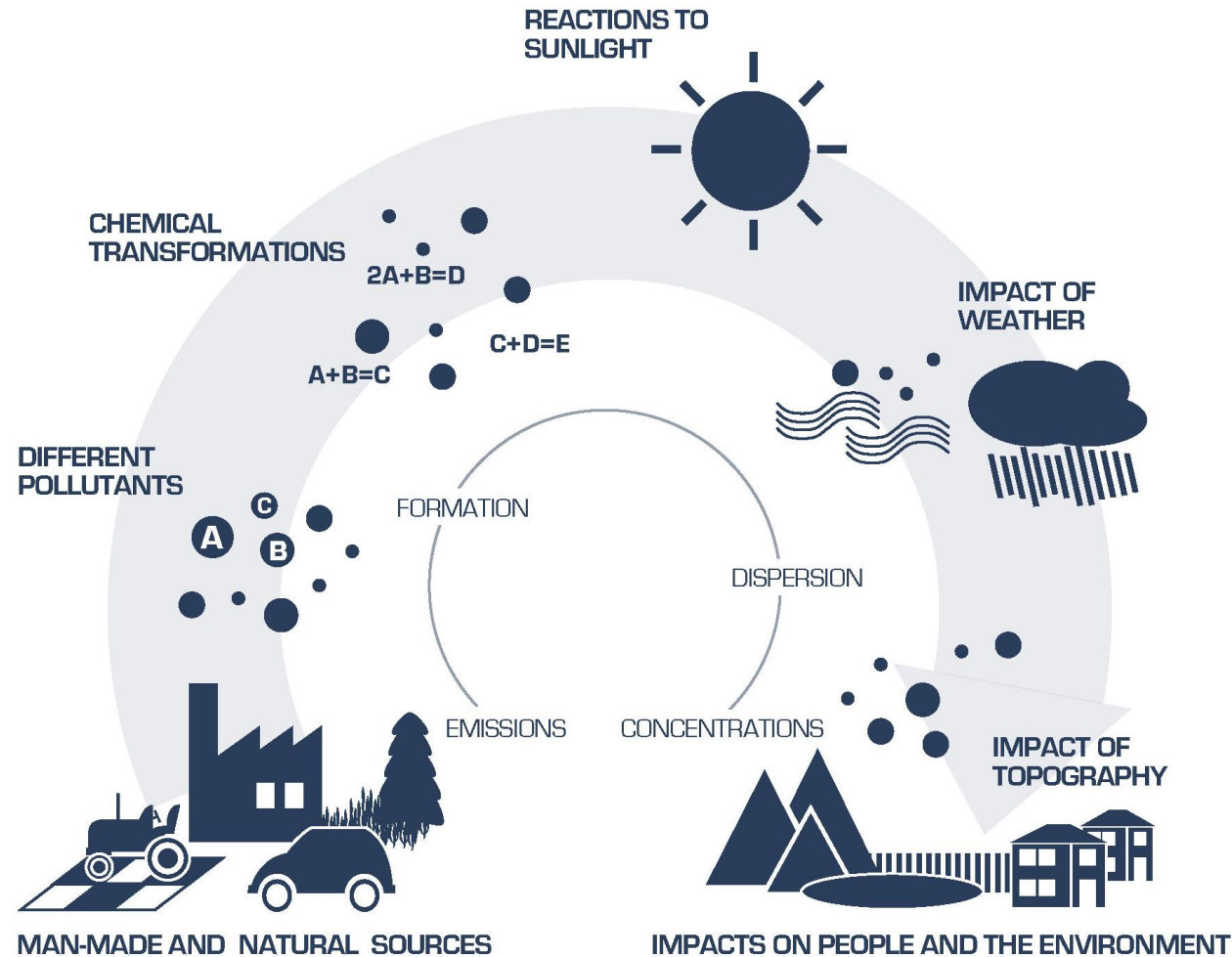


Use of emissions and air quality data at the EEA to provide public information

Alberto González Ortiz, Air quality expert, EEA
Regional training on air quality and emissions to air statistics and indicators
Geneva / 5 May 2023



Air pollution: from emissions to concentrations and impacts



National Emissions reduction commitments (NEC) Directive

Sectoral legislation

- Transport
- Industry
- Products

Air Quality Directives

- Legal standards
- Assessment of air quality
- Management of air quality
- Information to the public

World Health Organization

- Air quality guidelines



EEA data on emissions: NEC Directive

DATA

National Emission reductions Commitments (NEC) Directive emission inventory data

Data on emissions of air pollutants (ammonia (NH₃), non-methane volatile organic compounds (NMVOC), nitrogen oxides (NO_x), particulate matter 2.5 (PM_{2.5}) and sulphur dioxide (SO₂)) reported annually by Member States to the European Commission (with copies to EEA) under Directive 2016/2284 of the European Parliament and of the Council on the reduction of national emissions of certain atmospheric pollutants.

Prod-ID: DA7-20-en Created 29 Aug 2022 — Published 30 Aug 2022 — Last modified 30 Aug 2022 — 2 min read

🏠 > Data and maps > Datasets > National Emission reductions ...

European data Additional information Metadata

National Emission Ceilings (NEC) Directive inventory - NFR14 sector classification
[+] Show table definition (records: 4606422)

- 📄 Text delimited (zip) (ZIP archive)
59.58 MB Download file
- 📄 Microsoft Access format (zip)
Download file

BRIEFING



National Emission reduction Commitments Directive reporting status 2022

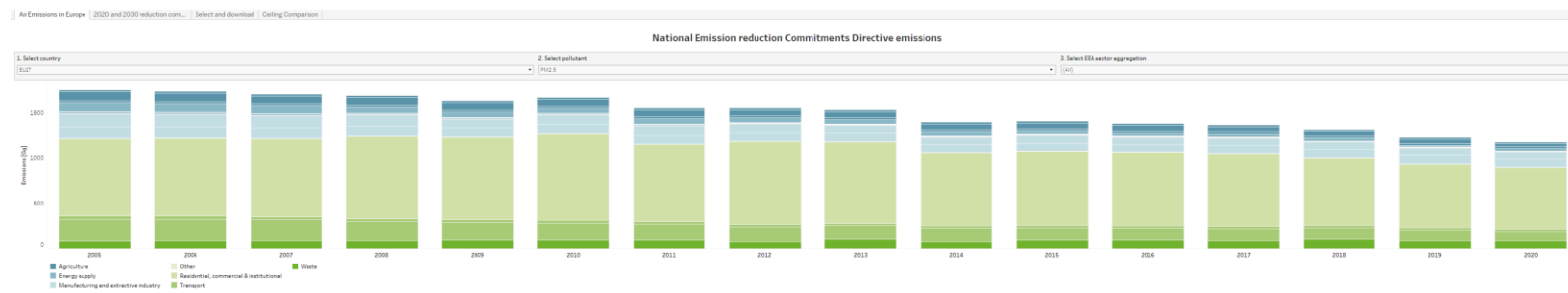
This briefing describes the progress made by the EU and its 27 Member States towards reducing emissions of the five main air pollutants regulated under the National Emission reduction Commitments Directive. It presents the first assessment of Member State performance against the emission reduction commitments for the period 2020-2029 and their progress towards achieving the more ambitious targets that will apply from 2030. This briefing is based on 2020 data, the latest year for which data have been reported to the EEA.

National air pollutant emissions data viewer 2005-2020

This data viewer provides access to the latest air pollutant emission inventory reported to EEA by EU Member States under the National Emission reduction Commitments (NEC) Directive.

Prod-ID: DA5-000-en Published 15 Sep 2022 —

🏠 > Data and maps > Dashboards > National air pollutant ...



DASHBOARD (TABLEAU)

National Emission reduction Commitments Directive – Policies and Measures (PaMs) to reduce air pollutants emissions

Access the information on the air pollution Policies and Measures reported by Member States.

Prod-ID: DA5-112-en Published 28 Jun 2019 —

🏠 > Data and maps > Dashboards > National Emission reduction ...

Policies to reduce emissions of air pollutants in the European Union

This dashboard explores additional Member State air pollution policies and measures (PaMs) to deliver on emission reduction commitments for 2020 and 2030, as set out in Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants (the "NECD"). These PaMs fall under the National Air Pollution Control Programmes that were reported for the first time in 2019 under Commission Implementing Decision (EU) 2018/1522.

Select a pollutant

NH₃ NMVOC NO_x PM_{2.5} SO₂

What are the most frequent objectives of additional policies for PM_{2.5}?

Alternative fuels for vehicles, vessels and aircraft (including electric)



Energy efficiency improvements of buildings

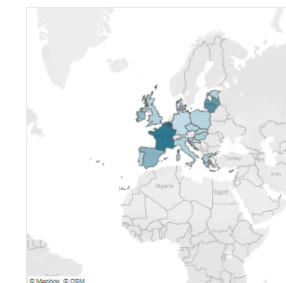


Transport demand management/reduction



Which countries have additional PaMs related to PM_{2.5}?

Click on a country in the map to filter the by sector graph below.
To return to EU totals, refresh the page or select all the countries in the map.



427

Additional PaMs relating to PM_{2.5}

Belgium reports the most additional PaMs

EEA data on emissions: Gothenburg Protocol

DATA

National emissions reported to the Convention on Long-range Transboundary Air Pollution (LRTAP Convention)

Data on emissions of air pollutants submitted to the LRTAP Convention and copied to EEA

Prod-ID: DAT-16-en Created 24 Aug 2022 — Published 29 Aug 2022 — Last modified 07 Dec 2022 — 3 min read

Data and maps > Datasets > National emissions reported...

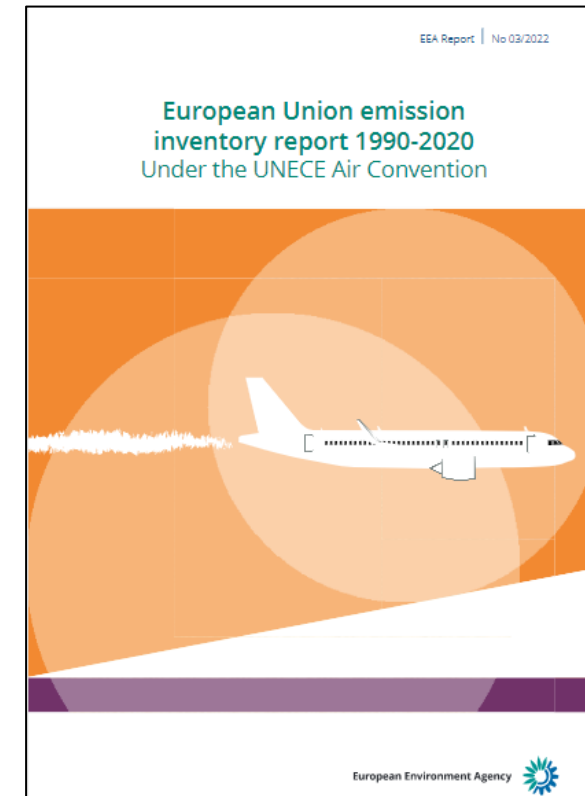
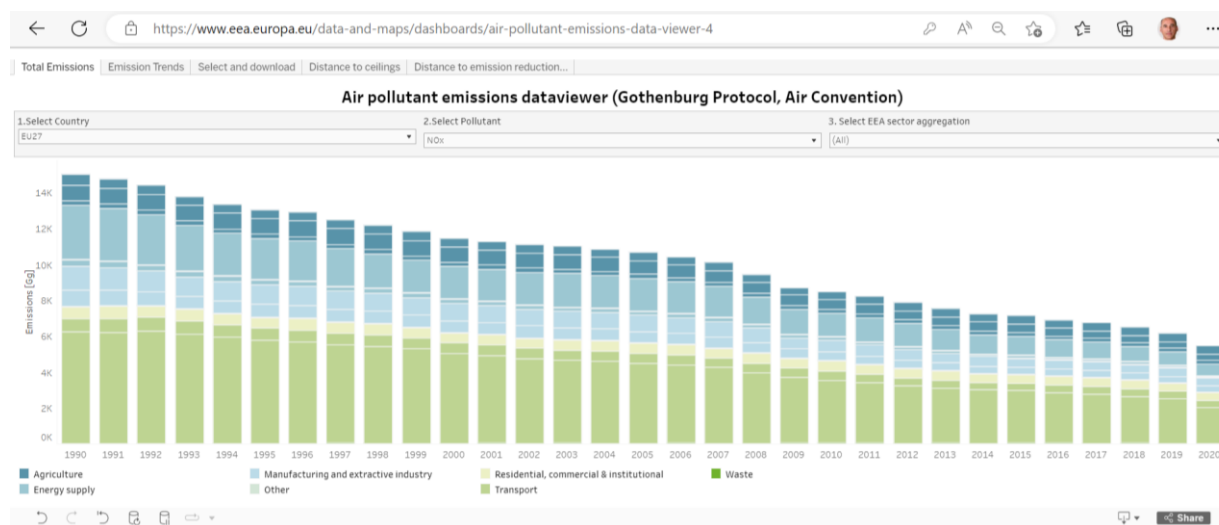
European data Additional information Metadata

Consolidated table for all countries in the NFR14 format
[+] Show table definition (records: 3620116)

- LRTAP_GF_CSV (ZIP archive)
29.76 MB Download file
- LRTAP_GF_mdb.zip (ZIP archive)
71.57 MB Download file

Additional information

Data compiled are annual national total and sectorial emissions of air pollutants and associated activity data reported by EEA member and cooperating countries. Data are available for download in the UNECE/EMEP Nomenclature for Reporting (NFR14) format used by countries. A consolidated dataset for all countries in the NFR14 format and consistent with the European Union's air pollutant emission inventory submission to the LRTAP Convention is also provided.



EEA data on air quality

Download of air quality data

Download service for E1a and E2a data

Update 29.07.2019: include invalid data

Update 20.11.2018: Update frequency: E2a (UTD) files are now recreated every night (starts at 01:00 AM finished around 05:30 AM)

Update 14.08.2018: Measurement method added to metadata file

Update 17.05.2018: Notice that we have changed the pollutant parameter to use the pollutant id (e.g. 5, see <http://list.eionet.europa.eu/vocabulary/aq/pollutant/view>) instead of the pollutant notation (e.g. PM10). This is to overcome the problems with pollutant containing blanks and "-" in the notation. The change have been made backward compatibly so a request using pollutant=PM10 will still work. The form below uses the pollutant id.

The download service is based on access to pre-prepared csv files and the service helps you to extract the list of files to be downloaded matching your search criteria. Data available in this service comes from two dataflows: E1a and E2a. The E1a data are reported to EEA by member states every September and covers the year before the delivery. This means that data delivered in September 2017 covers 2016. EEA also receives up-to-date (E2a) data on hourly basis from most of its member states. Because E1a data are validated and considered an official delivery, all E2a data are deleted before E1a data are reported. This is to ensure that no E2a data are mixed with E1a data.

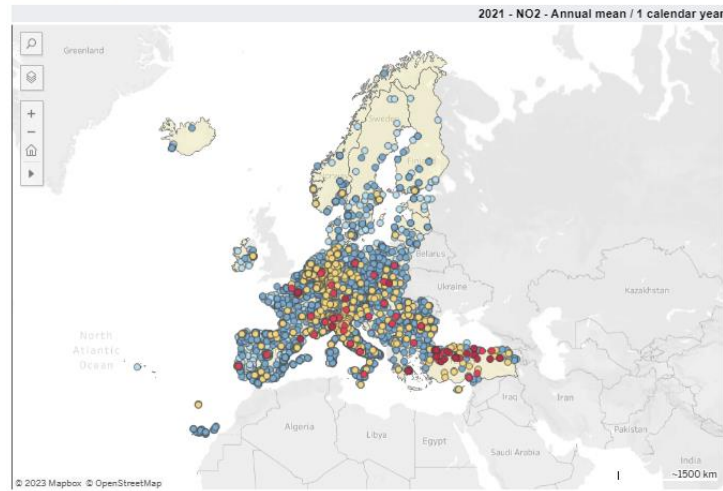
Download form

The form below will help you to build the request URL, to get the list of files to download matching your criteria. Before executing the URL, it is possible to refine the request, e.g. by adding a specific station or leaving a parameter blank. Note: Country, City and Pollutant are interlinked and changing the country will cause the others to change.

Country:
City name:

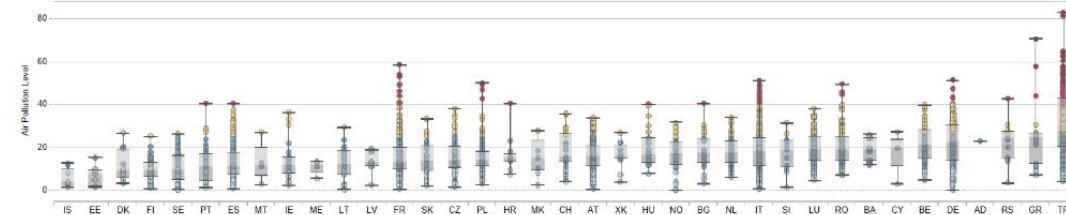
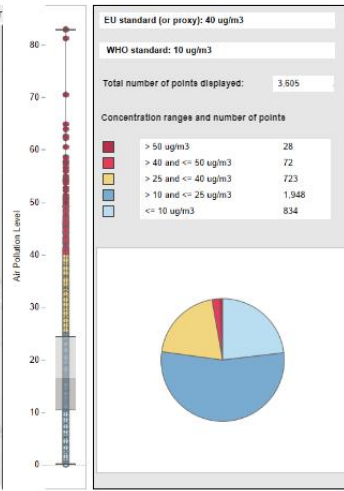


Info Open filters See over past years See distribution

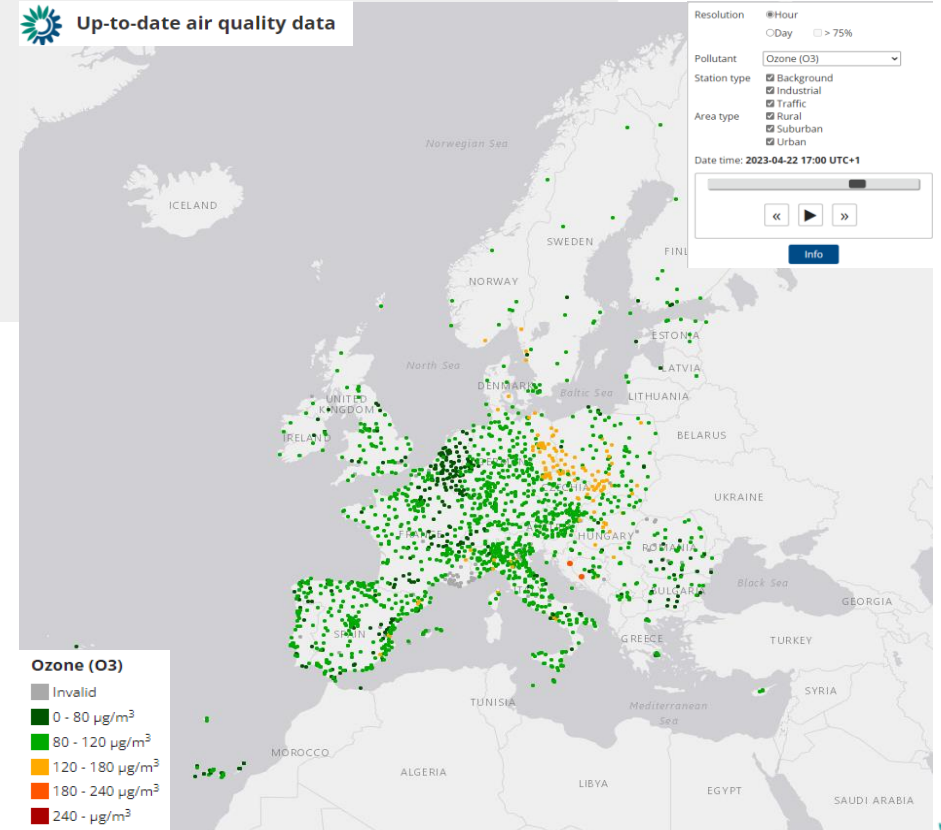


AQ eReporting - Annual statistics

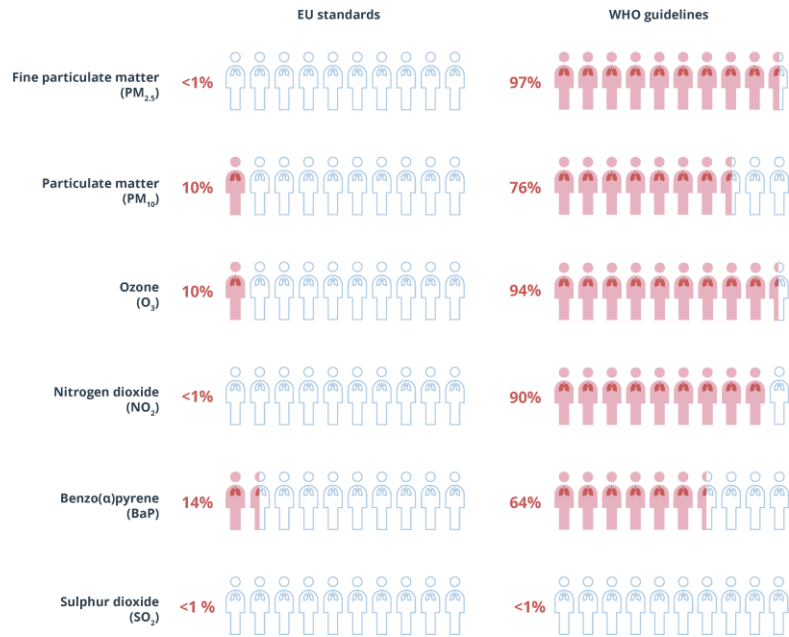
Access date and time: 09/03/2023 16:19:11



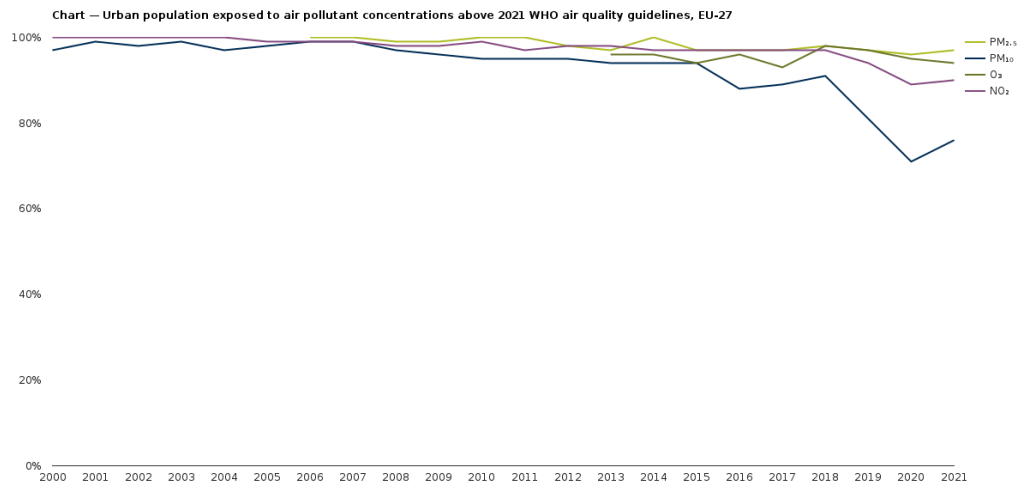
Up-to-date air quality data



EEA data on air quality: indicators



Source: [AIR003](#)



Source: [AIR007](#)

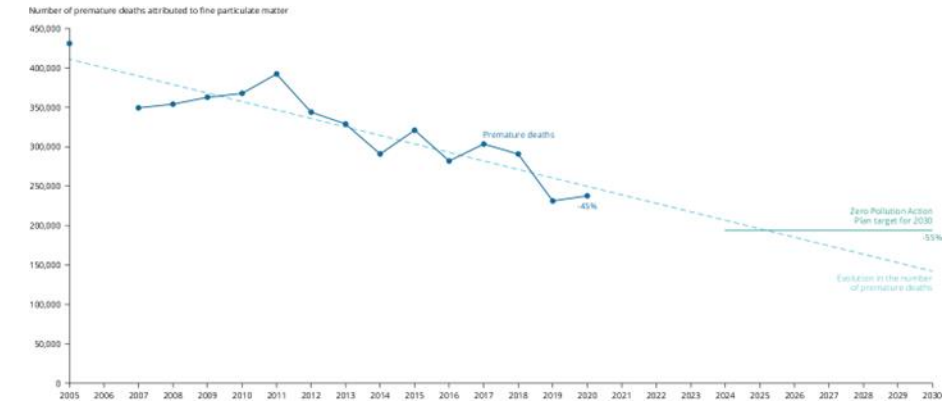
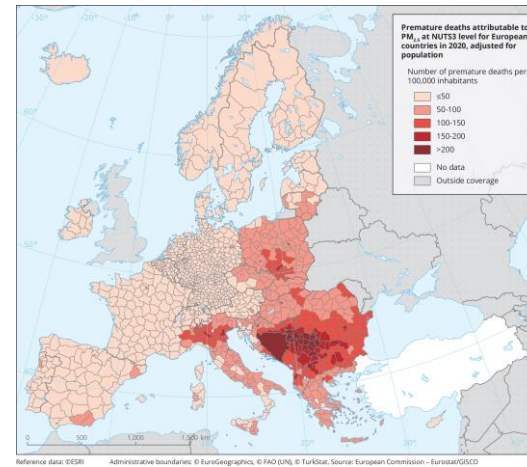
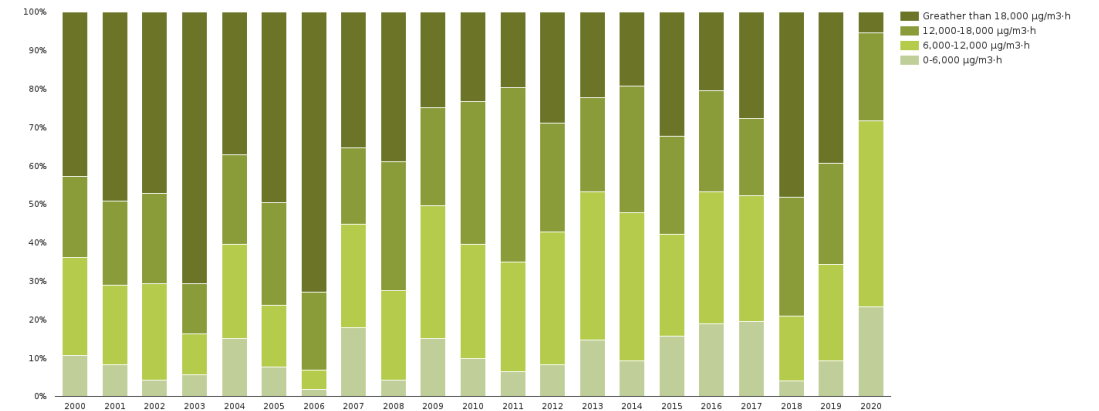


Chart – Exposure of agricultural area to ozone in EEA member countries



Notes:
 - EU long-term objective for the protection of vegetation: 6,000 µg/m³ · h
 - EU target value for the protection of vegetation: 18,000 µg/m³ · h (averaged over five years)

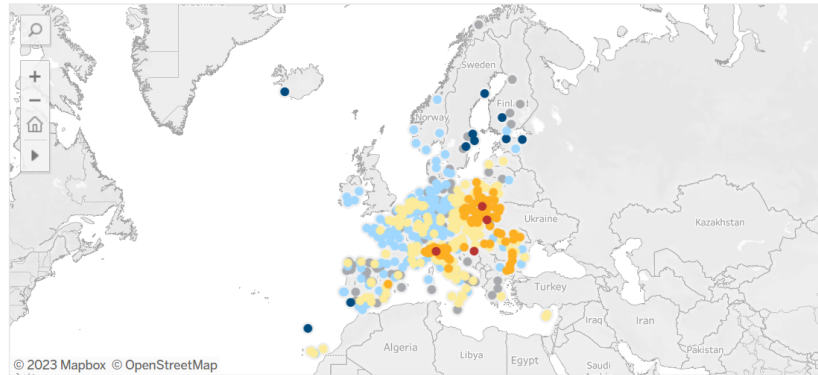
Source: [AIR004](#) European Environment Agency



EEA data on air quality: other products

How clean is the air in my city?

based on the levels of fine particulate matter measured in the air in cities in 2021 and 2022



PM2.5 annual mean concentration, $\mu\text{g}/\text{m}^3$

0 - 5	good	■
5 - 10	fair	■
10 - 15	moderate	■
15 - 25	poor	■
> 25	very poor	■
no data	-	■

Country

City

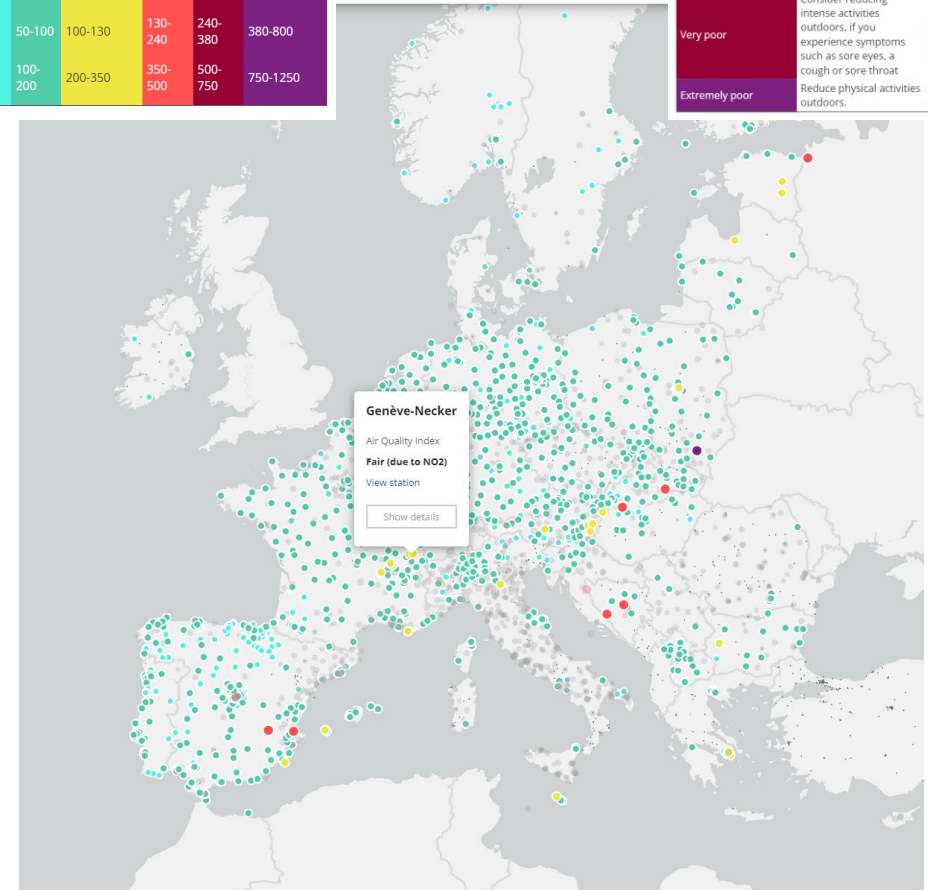
Air in European cities – from the cleanest to the most polluted

City name	Country	Rank	Fine particulate matter in $\mu\text{g}/\text{m}^3$	Population in the city	
Faro	Portugal	1	3.7	61015	●
Umeå	Sweden	2	3.9	125080	●
Uppsala	Sweden	3	4.0	219914	●
Funchal	Portugal	4	4.2	104024	●
Tallinn	Estonia	5	4.3	438341	●
Tampere / Tammerfors	Finland	6	4.3	238140	●
Reykjavik	Iceland	7	4.3	132252	●
Norrköping	Sweden	8	4.7	140927	●
Stockholm (greater city)	Sweden	9	4.8	1745766	●
Narva	Estonia	10	4.9	53424	●
Bergen	Norway	11	5.2	267950	●
Helsinki / Helsingfors (greater city)	Finland	12	5.3	1154967	●
Tartu	Estonia	13	5.7	95430	●
Saint Denis	France	14	5.8	147931	●

City name	Country	Rank	Fine particulate matter in $\mu\text{g}/\text{m}^3$	Population in the city	
Slavonski Brod	Croatia	375	28.0	52836	●
Nowy Sacz	Poland	374	27.9	83896	●
Piotrków Trybunalski	Poland	373	25.2	73670	●
Cremona	Italy	372	25.1	72399	●
Lomza	Poland	371	24.6	63000	●
Zory	Poland	370	24.3	62456	●
Kraków	Poland	369	24.1	771069	●
Gliwice	Poland	368	21.9	179806	●
Padova	Italy	367	21.5	210077	●
Zgierz	Poland	366	21.4	56529	●
Tarnów	Poland	365	21.3	109062	●
Katowice	Poland	364	21.1	294510	●
Czestochowa	Poland	363	21.1	222292	●
Vicenza	Italy	362	21.0	109855	●

Pollutant	Index level (based on pollutant concentrations in $\mu\text{g}/\text{m}^3$)					
	Good	Fair	Moderate	Poor	Very poor	Extremely poor
Particles less than 2.5 μm ($\text{PM}_{2.5}$)	0-10	10-20	20-25	25-50	50-75	75-800
Particles less than 10 μm (PM_{10})	0-20	20-40	40-50	50-100	100-150	150-1200
Nitrogen dioxide (NO_2)	0-40	40-90	90-120	120-230	230-340	340-1000
Ozone (O_3)	0-50	50-100	100-130	130-240	240-380	380-800
Sulphur dioxide (SO_2)	0-100	100-200	200-350	350-500	500-750	750-1250

AQ index	General population	Sensitive populations
Good	The air quality is good. Enjoy your usual outdoor activities.	The air quality is good. Enjoy your usual outdoor activities.
Fair	Enjoy your usual outdoor activities	Enjoy your usual outdoor activities
Moderate	Enjoy your usual outdoor activities	Consider reducing intense outdoor activities, if you experience symptoms.
Poor	Consider reducing intense activities outdoors, if you experience symptoms such as sore eyes, a cough or sore throat	Consider reducing physical activities, particularly outdoors, especially if you experience symptoms.
Very poor	Consider reducing intense activities outdoors, if you experience symptoms such as sore eyes, a cough or sore throat	Reduce physical activities, particularly outdoors, especially if you experience symptoms.
Extremely poor	Reduce physical activities outdoors.	Avoid physical activities outdoors.

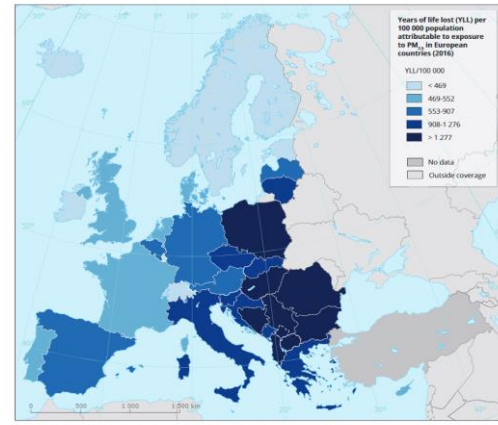


EEA data on air quality: other products and reports



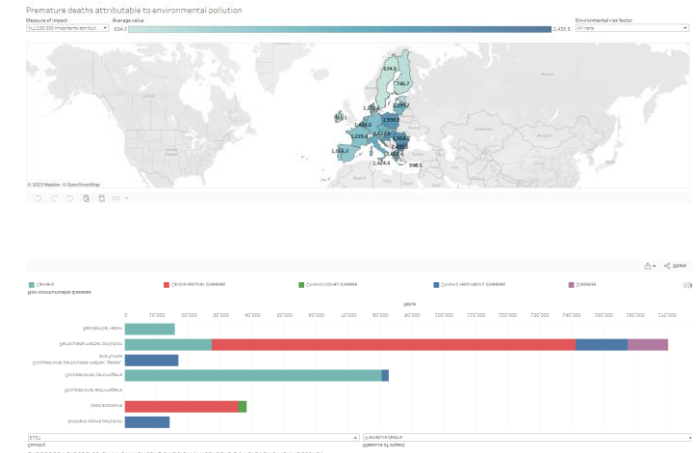
Source: [Air quality in Europe 2022](#)

MAP 8.2 Estimated years of life lost per 100 000 population attributable to exposure to PM_{2.5} in European countries in 2016



Notes: YLL, years of life lost. The classification of values in map legends is quantiles, so one fifth of countries fall in each class. The calculations are made for all of Europe and they may differ for specific studies at country level.
Source: Based on EEA (2019c).

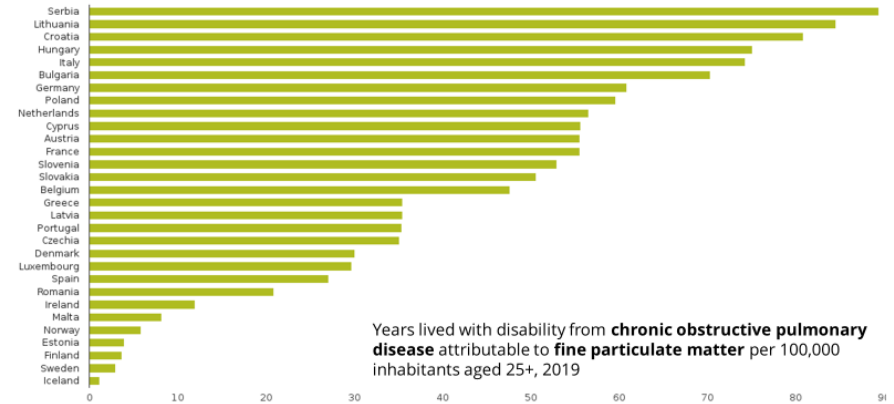
Source: [SOER2020](#)



Source: [zero pollution monitoring assessment](#)

Country Or Territory	Degree Of Urbanisation	Year	Air Pollutant	Health Risk Scenario	Population (2016)	Air Pollution Average (µg/m ³)	Air Pollution Population Weighted Average (µg/m ³)	Premature Deaths	Premature Deaths - lower CI	Premature Deaths - upper CI	Years Of Life Lost	Years Of Life Lost - lower CI	Years Of Life Lost - upper CI
Austria	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_8901020	43070	7.9	9.9	3181	2426	3587	23273	24139	34139
Belgium	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_1152382	25153	6.3	9.4	1927	2994	4937	16174	27511	48415
Bulgaria	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_6991340	23489	11.1	17	16626	8197	11822	108801	92719	132207
Cyprus	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_1229897	8766	16.3	14	565	452	629	6266	4846	6795
Czechia	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_10591925	44736	10.7	12.5	6901	5265	7895	16764	12436	21687
Germany	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_63186179	212783	8.2	9.1	28910	22063	33208	296305	232353	331148
Denmark	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_9327746	27754	6.9	7.6	1041	790	1165	11249	8337	12219
Estonia	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_1328989	20389	4.7	5.4	89	45	65	686	522	772
Spain	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_45169389	60511	7.1	10	16902	12934	18978	164653	125348	183876
European Union Countries	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_44289128	1790984	8.4	11.2	227910	161639	293222	2411915	1841382	2689165
Finland	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_5521206	99483	5.4	4.4	65	47	69	665	517	765
France	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_65178463	376764	6.7	8.6	16339	12570	19488	175988	133700	198387
Greece	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_10717026	24876	10.8	14.9	8645	6761	9887	94274	63951	98994
Croatia	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_4558139	23884	11.1	15.4	4128	3159	4936	45413	39937	49310
Hungary	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_9769498	277658	13.3	14.5	9502	7622	10994	101719	78825	115029
Ireland	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_4964269	55482	5.5	7.1	424	374	559	5941	4511	6644
Italy	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_59841842	168818	11.9	16	92303	60035	138247	462233	353888	514777
Lithuania	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_2794278	35587	7.5	9.8	1462	1112	1637	15840	12133	17812
Luxembourg	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_626105	1658	6.4	7.3	75	57	84	811	615	966
Latvia	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_1907869	32912	6	9.1	833	656	932	9139	6953	10216
Malta	All Areas (incl.unclassified)	2020	PM2.5	WHO_2021_AQI_Scen_Base_5148162	264	6.5	10.1	153	117	169	1738	1322	1942

Source: [Air Quality Health Risk Assessments \(Countries\)](#)



Source: [Health impacts of air pollution in Europe, 2022](#)

Thank you

Alberto.GonzalezOrtiz@eea.europa.eu