

Premature deaths due to exposure to fine particulate matter PM2.5_superseded (2005-2021)

This indicator provides information on the number of deaths in the EU-27 Member States attributable to long-term exposure to fine particulate matter (PM2.5) since the year 2005.

PM2.5 are particulates whose diameter is less than 2.5 micrometres and which can be carried deep into the lungs where they can cause inflammation and exacerbate the condition of people suffering heart and lung diseases.

Simple

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Point of contact	Organisation name	Individual name	Electronic mail address	Website	Role
	European Environment Agency		sdi@eea.europa.eu	http://www.eea.europa.eu	Point of contact
	European Environment Agency		sdi@eea.europa.eu		Custodian

Point of contact

No information provided.

Point of contact

No information provided.

Maintenance and update frequency	Annually
Keywords	
Keywords	
GEMET	<ul style="list-style-type: none"> sustainable development goals air pollution statistical data environmental health impact assessment pollution
Continents, countries, sea regions of the world.	<ul style="list-style-type: none"> EU27 (from 2020)
Reporting obligations	<ul style="list-style-type: none"> (E1a) Information on primary validated assessment data - measurements (Article 10) (D) Information on the assessment methods (Articles 8 and 9) - for fixed and indicative measurements
EEA Management Plan	<ul style="list-style-type: none"> 2023 3.2.2
EEA topics	<ul style="list-style-type: none"> Pollution Air pollution Health Environmental health impacts

	<ul style="list-style-type: none"> • Sustainability 																					
Use constraints	Other restrictions																					
Other constraints	EEA standard re-use policy: unless otherwise indicated, re-use of content on the EEA website for commercial or non-commercial purposes is permitted free of charge, provided that the source is acknowledged (http://www.eea.europa.eu/legal/copyright). Copyright holder: European Environment Agency (EEA).																					
Language of dataset	English																					
Topic category	<ul style="list-style-type: none"> • Environment 																					
Begin date	2005-01-01																					
End date	2021-12-31																					
Distribution format	<ul style="list-style-type: none"> • Microsoft Excel (.xls, .xlsx) () • ascii (.csv, .txt, .sql) () 																					
OnLine resource	<table border="1"> <thead> <tr> <th>Protocol</th> <th>Linkage</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>EEA: FOLDERPATH</td> <td>https://sdi.eea.europa.eu/webdav/datastore/public/eea_s_eu-sdg-11-52_p_2005-2021_v02_r00/</td> <td></td> </tr> <tr> <td>WWW:URL</td> <td>https://sdi.eea.europa.eu/data/6515e4a2-c97f-438c-9a93-5ce4d3ec928c</td> <td>Direct download</td> </tr> <tr> <td>WWW:LINK-1.0-http--link</td> <td>https://www.eea.europa.eu/ims/health-impacts-of-exposure-to</td> <td>EEA Indicator: Premature deaths due to exposure to fine particulate matter in Europe</td> </tr> <tr> <td>WWW:LINK-1.0-http--link</td> <td>https://discomap.eea.europa.eu/App/AQViewer/index.html?fqn=Airquality_Dissem.hra.countries_sel&EUCountries=Yes&ScenarioDescription=WHO_2021_AQG_Scen_Base&AirPollutant=PM2.5&UrbanisationDegree=All%20Areas%20(incl.unclassified)&Year=2020</td> <td>AQ Viewer: Air Quality Health Risk Assessments (Countries)</td> </tr> <tr> <td>WWW:LINK-1.0-http--link</td> <td>https://ec.europa.eu/eurostat/databrowser/view/sdg_11_52/default/table?lang=en</td> <td>Eurostat indicator: Premature deaths due to exposure to fine particulate matter (PM2.5)</td> </tr> <tr> <td>WWW:LINK-1.0-http--link</td> <td>https://www.eionet.europa.eu/etcs/etc-he/products/etc-he-products/etc-he-reports/etc-he-report-2023-3-air-quality-maps-of-eea-member-and-cooperating-countries-for-2021-pm10-pm2-5-o3-no2-nox-and-bap-spatial-estimates-and-their-uncertainties</td> <td>ETC HE Report 2023 /3: Air quality maps of EEA member and cooperating countries for 2021. PM10, PM2.5, O3, NO2, NOx and BaP spatial estimates and their uncertainties</td> </tr> </tbody> </table>	Protocol	Linkage	Name	EEA: FOLDERPATH	https://sdi.eea.europa.eu/webdav/datastore/public/eea_s_eu-sdg-11-52_p_2005-2021_v02_r00/		WWW:URL	https://sdi.eea.europa.eu/data/6515e4a2-c97f-438c-9a93-5ce4d3ec928c	Direct download	WWW:LINK-1.0-http--link	https://www.eea.europa.eu/ims/health-impacts-of-exposure-to	EEA Indicator: Premature deaths due to exposure to fine particulate matter in Europe	WWW:LINK-1.0-http--link	https://discomap.eea.europa.eu/App/AQViewer/index.html?fqn=Airquality_Dissem.hra.countries_sel&EUCountries=Yes&ScenarioDescription=WHO_2021_AQG_Scen_Base&AirPollutant=PM2.5&UrbanisationDegree=All%20Areas%20(incl.unclassified)&Year=2020	AQ Viewer: Air Quality Health Risk Assessments (Countries)	WWW:LINK-1.0-http--link	https://ec.europa.eu/eurostat/databrowser/view/sdg_11_52/default/table?lang=en	Eurostat indicator: Premature deaths due to exposure to fine particulate matter (PM2.5)	WWW:LINK-1.0-http--link	https://www.eionet.europa.eu/etcs/etc-he/products/etc-he-products/etc-he-reports/etc-he-report-2023-3-air-quality-maps-of-eea-member-and-cooperating-countries-for-2021-pm10-pm2-5-o3-no2-nox-and-bap-spatial-estimates-and-their-uncertainties	ETC HE Report 2023 /3: Air quality maps of EEA member and cooperating countries for 2021. PM10, PM2.5, O3, NO2, NOx and BaP spatial estimates and their uncertainties
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OnLine resource

No information provided.

Hierarchy level	Dataset
Statement	<p>To estimate the mortality attributed to air pollution, EEA follows the recommendations provided by the WHO in its more recent update of its Global air quality guidelines (Source: https://apps.who.int/iris/handle/10665/345329). Therefore, a relative risk of 0.08 has been used for PM2.5. This implies that the risk of dying prematurely increases by 8% per each increase in 10µg/m3 in the annual mean PM2.5 concentrations.</p> <p>Furthermore, only the impact above annual concentrations of 5µg/m3 (the 2021 WHO AQ guideline level) are calculated. So, EEA estimates the mortality attributable to not reaching this recommended WHO AQ guideline level. This approach has been followed to calculate the mortality for all years.</p> <p>Accuracy - overall: The main uncertainty is associated with the concentration-response functions used in the calculation of the mortality. That uncertainty is calculated as a confidence interval around a mean or central estimate. The EEA uses a 95 % confidence interval. This implies that there is 95 % probability that the true value lies in the range defined by the interval. The upper and lower limits of the interval are included in the tables accessible via "Source datasets".</p> <p>Comparability - geographical: Data for all countries are comparable, since the concentrations are based on the interpolated maps, the demographics data on national data reported to Eurostat and the mortality calculations are done following the same methodology for all countries.</p> <p>Comparability - over time: 2006 is missing because there are no interpolated PM2.5 maps for that year. There are no methodological breaks, since the time series is recalculated every year (e.g., the last update took into consideration the latest methodology for the whole series).</p>
Source	•

Metadata

File identifier	6515e4a2-c97f-438c-9a93-5ce4d3ec928c XML										
Metadata language	English										
Character set	UTF8										
Hierarchy level	Tabular dataset										
Hierarchy level name	Tabular dataset										
Date stamp	2024-09-11T09:26:10.860546Z										
Metadata standard name	ISO 19115/19139										
Metadata standard version	1.0										
Metadata author	<table border="0"> <thead> <tr> <th>Organisation name</th> <th>Individual name</th> <th>Electronic mail address</th> <th>Website Role</th> </tr> </thead> <tbody> <tr> <td>European Environment Agency</td> <td></td> <td>sdi@eea.europa.eu</td> <td>Point of contact</td> </tr> </tbody> </table>	Organisation name	Individual name	Electronic mail address	Website Role	European Environment Agency		sdi@eea.europa.eu	Point of contact		
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Overviews

Dataset for indicator		Premature deaths due to exposure to fine particulate matter (PM2.5) (11_52)																			
Conditions																					
Unit		Number of premature deaths																			
Coverage		EU27																			
Legend		AGG= Aggregate																			
		MS= Member State																			
		EFTA= EFTA country																			
		CC= Candidate Country																			
		TIME																			
Type	GEO (Labels)	GEO (Codes)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
AGG	European Union (aggregate changing according to the context)	EU_V	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:		
AGG	European Union - 27 countries	EU27_2020	431114	349416	354207	362841	367732	392315	344027	328912	290933	321094	281995	303487	290716	231286	237715	253305			
MS	Belgium	BE	9324	7192	8633	9497	9832	9063	8136	8691	6250	6210	5766	5676	5914	4533	3927	5106			
MS	Bulgaria	BG	19277	17300	19053	16162	15912	20002	16029	13610	14203	14669	13325	13120	12027	9906	10623	10840			
MS	Czechia	CZ	13106	8606	9116	10228	11843	11173	10216	10914	9655	9245	8634	8335	10305	6941	6900	8482			
MS	Denmark	DK	2991	2743	2417	2334	2581	3386	1916	1761	2419	1843	1650	1366	2206	1719	1038	1203			
MS	Germany	DE	66644	48870	54708	63359	68687	64474	51701	58365	52049	49696	44203	45191	49262	34359	28886	32322			
MS	Estonia	EE	774	635	455	276	443	347	325	396	213	132	70	230	79	58	97				
MS	Ireland	IE	641	325	833	738	1008	771	638	879	817	393	468	275	624	598	468	458			
MS	Greece	EL	15298	12564	13212	13414	11988	12999	12271	11468	9647	12502	12159	20682	11144	9480	8807	9990			
MS	Spain	ES	34017	31417	24575	24477	19186	20910	20383	15793	15446	22200	17510	20142	15104	14734	16962	14074			
MS	France	FR	38706	32796	34906	39694	40501	40021	36658	35660	22689	28175	24417	22983	22888	18709	16507	20061			
MS	Croatia	HR	6539	5250	4917	5375	5435	5900	4254	4114	3771	4665	5122	4688	4696	3472	4128	3797			
MS	Italy	IT	72047	60784	58906	58398	52322	66469	60447	55103	45701	60966	49618	54674	46884	42658	52295	46792			
MS	Cyprus	CY	1137	883	964	754	793	931	1069	590	619	711	541	621	526	562	565	629			
MS	Latvia	LV	2639	1617	2396	1688	2043	1424	1525	1549	1779	1245	1238	898	1436	1001	836	1405			
MS	Lithuania	LT	3224	2629	3027	2154	3156	2573	2254	2474	2619	2110	2054	1490	2110	1880	1461	2148			
MS	Luxembourg	LU	260	207	235	279	277	237	208	241	183	200	175	150	150	93	76	77			
MS	Hungary	HU	18002	13051	12950	13493	13705	16357	12503	11500	10758	13030	11290	12614	12161	8667	9502	10381			
MS	Malta	MT	349	272	227	259	188	243	181	174	163	200	151	172	196	188	151	193			
MS	Netherlands	NL	11961	10156	11271	11234	11890	11669	8840	9189	8599	7680	8634	6695	7554	6064	4967	5691			
MS	Austria	AT	7161	5417	5922	5821	6733	6715	5386	5853	4283	4895	3966	4239	5001	3685	3167	3203			
MS	Poland	PL	42139	36065	40371	42328	52629	50089	47886	45876	45114	44471	41552	44821	46792	35647	36541	47298			
MS	Portugal	PT	9160	6274	4288	5214	4074	4876	3680	3649	2622	3943	2906	3041	2640	2517	2639	2105			
MS	Romania	RO	42284	33112	30299	26381	21918	29334	28343	23037	22039	23999	21587	23469	23158	18470	21590	19604			
MS	Slovenia	SI	2035	1557	1565	1694	1712	1955	1632	1603	1306	1660	1467	1554	1495	1147	1236	1191			
MS	Slovakia	SK	6698	5340	5540	5330	5877	6767	5580	5281	4878	5130	4470	5032	4857	3462	3916	5354			
MS	Finland	FI	1238	1261	843	629	1005	958	773	369	883	225	225	97	454	167	61	158			
MS	Sweden	SE	3443	3093	2570	1661	2084	2672	1593	783	1646	798	735	412	902	528	368	646			
EFTA	Iceland	IS	31	26	49	18	35	4	0	23	25	23	11	15	8	2	0	1			
EFTA	Liechtenstein	LI	19	17	16	14	18	17	9	11	7	12	10	8	7	6	7	6			
EFTA	Norway	NO	1324	1184	1003	832	1292	1262	868	768	697	427	449	295	552	318	156	393			
EFTA	Switzerland	CH	4699	3765	4180	4118	4581	4203	3407	3976	2929	3305	2358	2311	2258	1790	1722	1677			
CC	Bosnia and Herzegovina	BA	7694	6309	5905	6994	6768	7310	5335	4164	3656	5350	7473	6216	7311	5797	9156	8984			
CC	Montenegro	ME	1032	1019	929	966	1265	1253	898	736	665	880	963	875	975	866	918	1079			
CC	North Macedonia	MK	6300	4174	4230	5312	4968	5670	5267	4886	4438	4854	6047	6171	5121	3277	3757	4979			
CC	Albania	AL	6505	4893	4371	5192	6240	5697	4941	4297	3453	4838	5135	5276	4779	3807	3789	4604			
CC	Serbia	RS	18319	14773	14894	15070	11868	17517	13371	11204	11554	13176	13749	16192	14705	11132	14372	14845			
CC	Türkiye	TR																			
CC (potential)	Kosovo (under United Nations supervision)	XK	4967	4246	4223	4682	5295	4683	4158	3934	3745	3960	4038	4179	4096	2759	3058	2925			

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