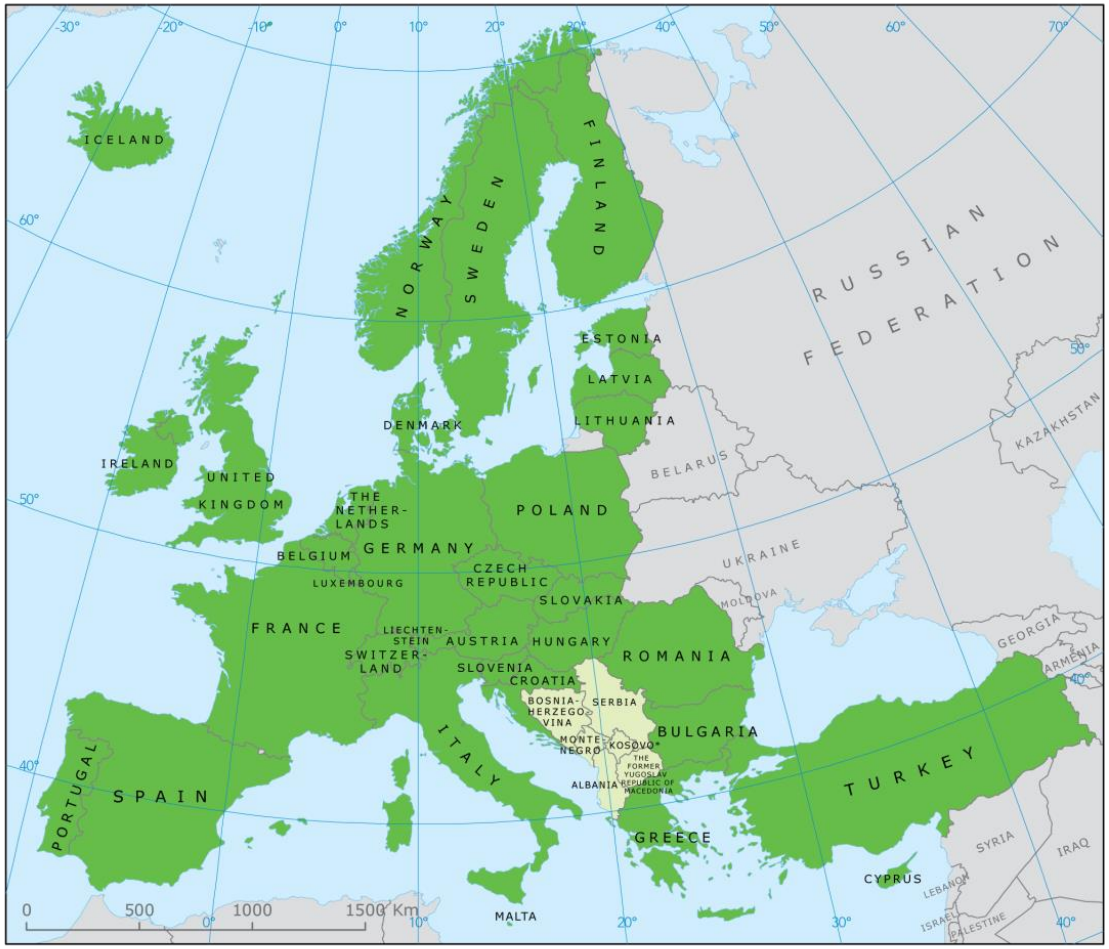
Luchtkwaliteit in Europa

The EEA's mission

What?
The provision of **relevant, reliable, targeted and timely** information to **policy-making agents** and **the public**.

Why?
To help achieve significant and measurable improvements in Europe's environment and to support sustainable development.

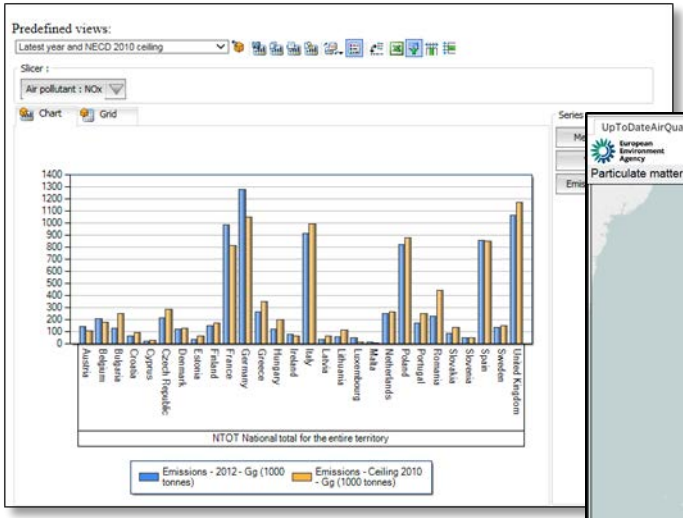
EEA member and cooperating countries

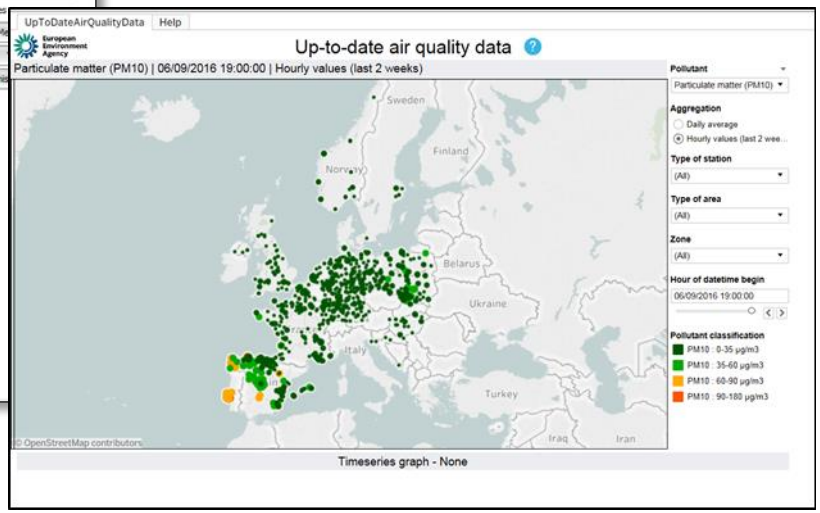


European Environment Agency

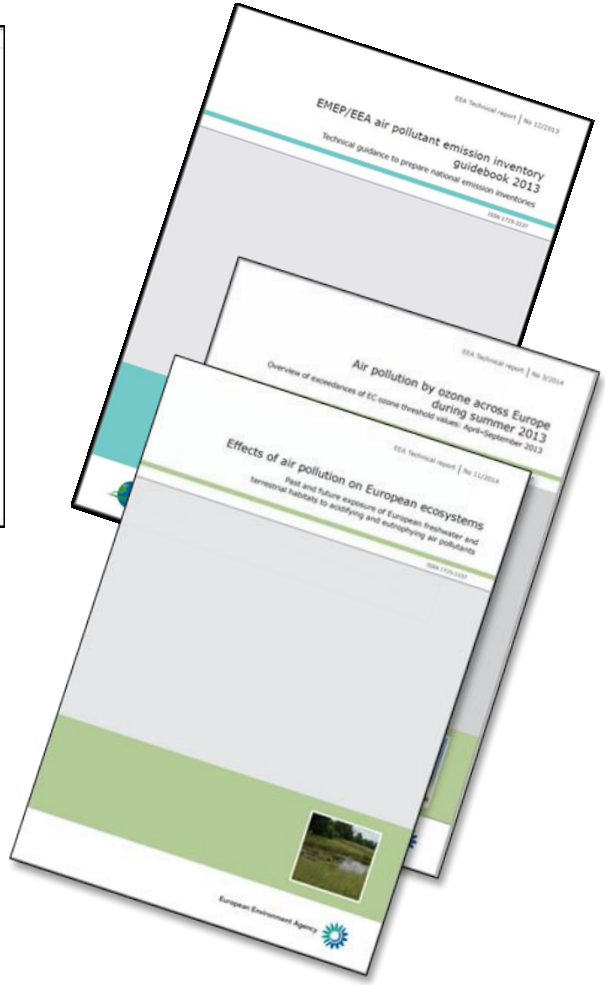
Our work on air pollution

Data viewers



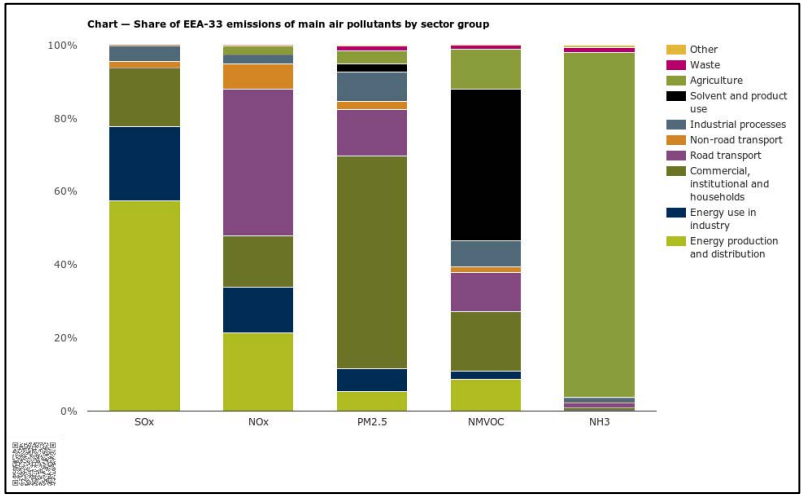


Reports



Data

Indicators



European Environment Agency

Air quality report 2016

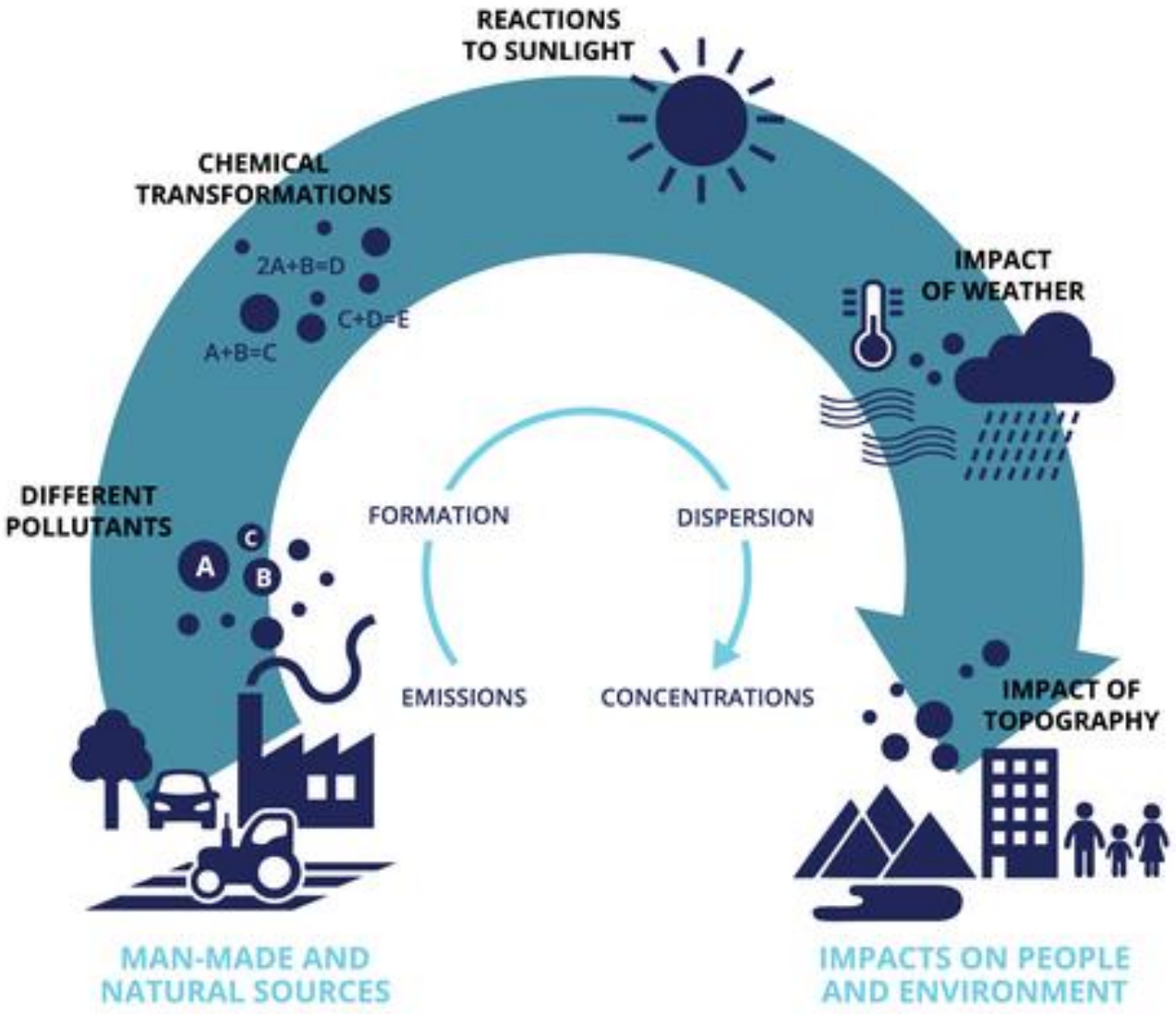
Air quality in Europe – 2016 report

Coming soon

http://www.eea.europa.eu/publications/air-quality-in-europe-2016

European Environment Agency

Complex cycle from emissions to impacts

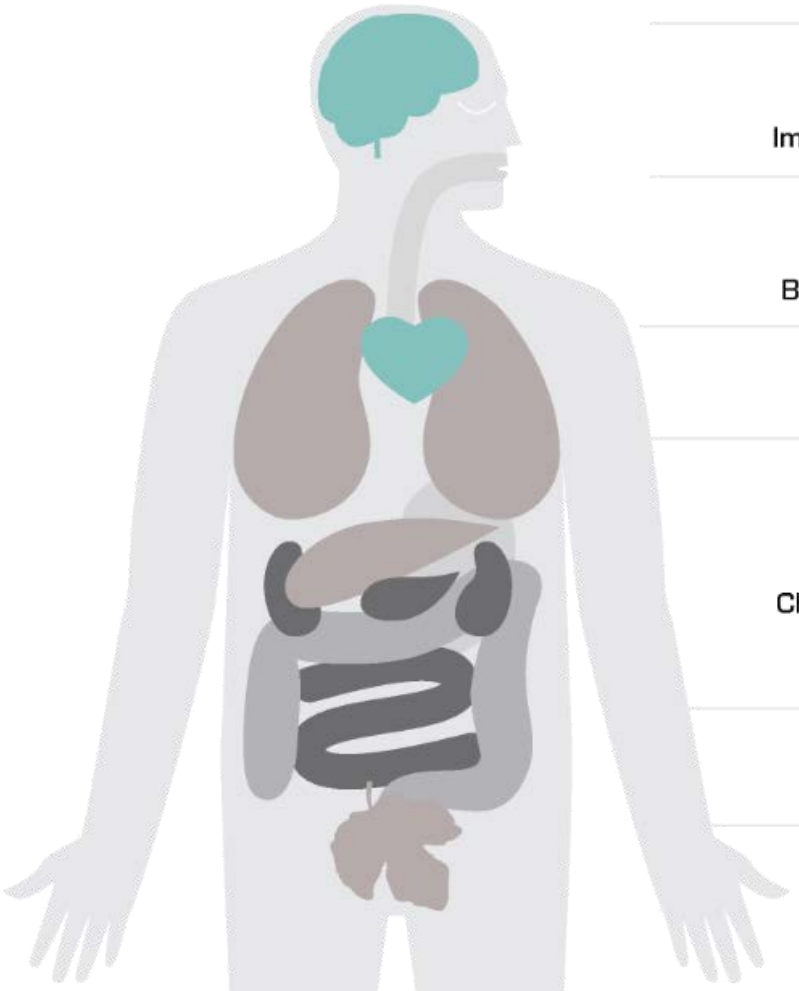


Source: EEA

European Environment Agency

Air Pollution – a pressing public health problem

$PM_{2.5}$



Headache and anxiety (SO_2)
Impacts on the central nervous system (PM)

Irritation of eyes, nose and throat
Breathing problems (O_3, PM, NO_2, SO_2, BaP)

Cardiovascular diseases (PM, O_3, SO_2)

Impacts on the respiratory system:
Irritation, inflammation and infections
Asthma and reduced lung function
Chronic obstructive pulmonary disease (PM)
Lung cancer (PM, BaP)

Impacts on liver, spleen and blood (NO_2)

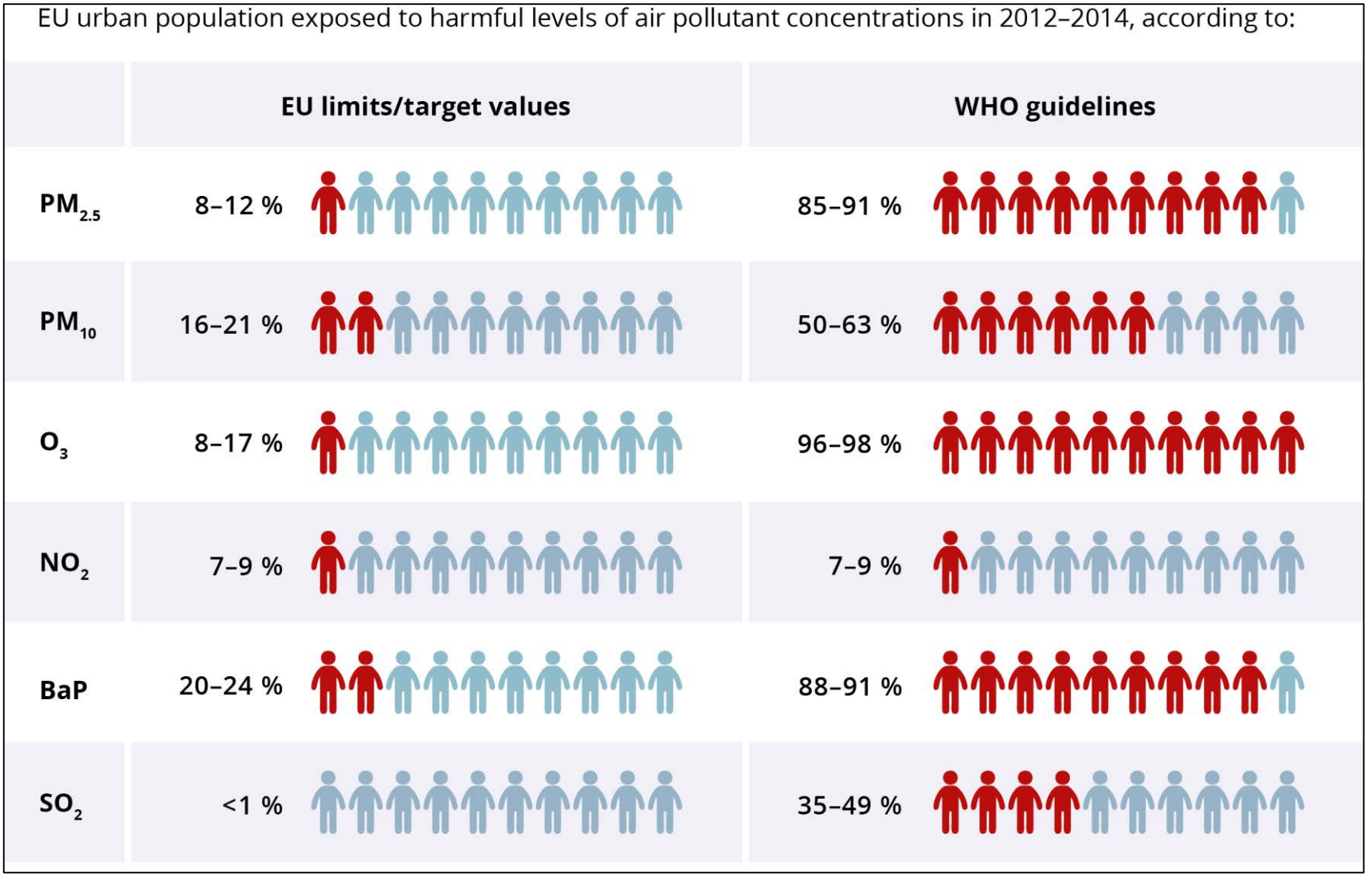
Impacts on the reproductive system (PM)

European Environment Agency

Source: EEA

Many Europeans are still exposed to harmful levels of air pollution

EU urban population exposed to harmful levels of air pollutant concentrations in 2012–2014, according to:



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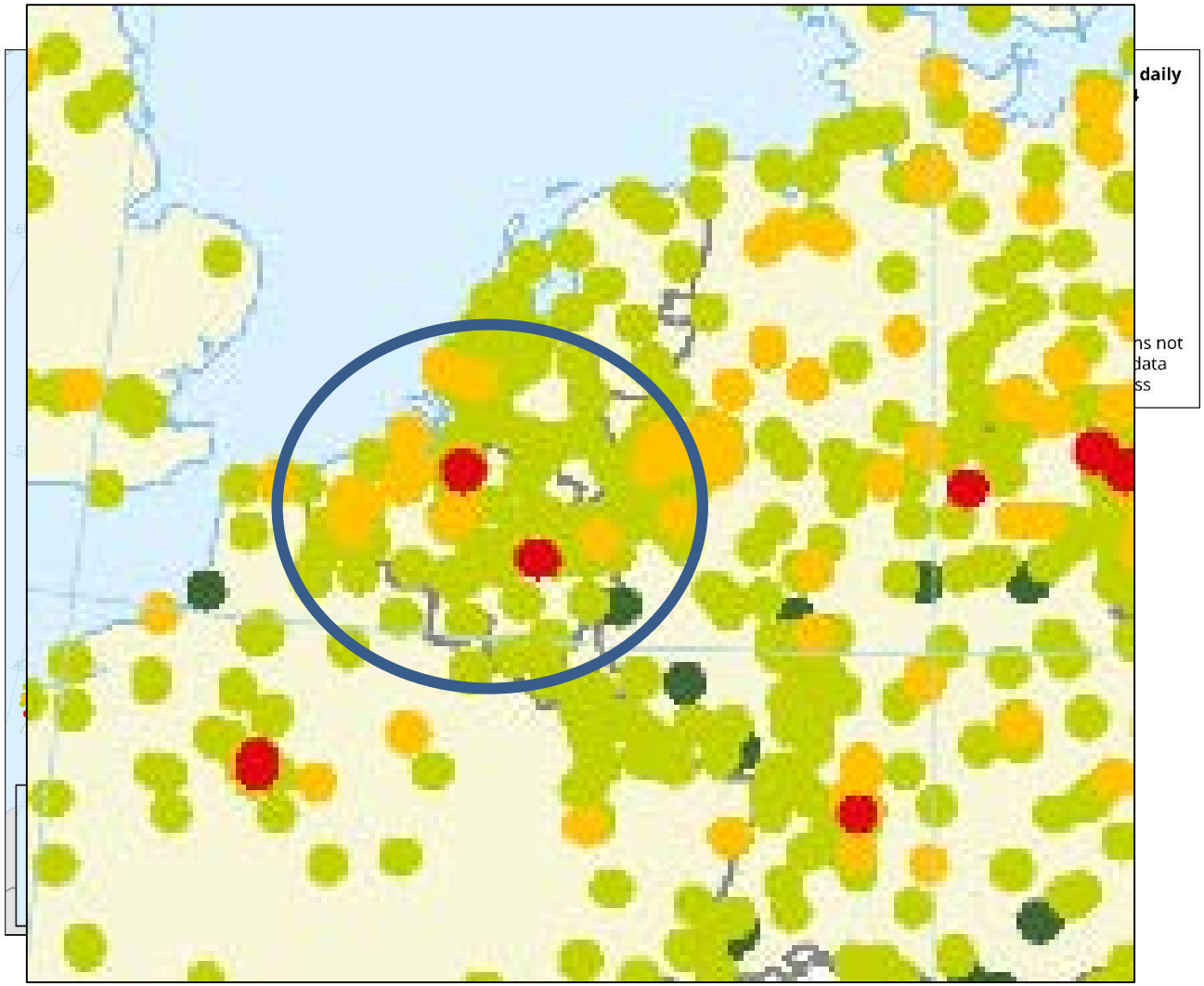
Source: CSI004, EEA, 2016

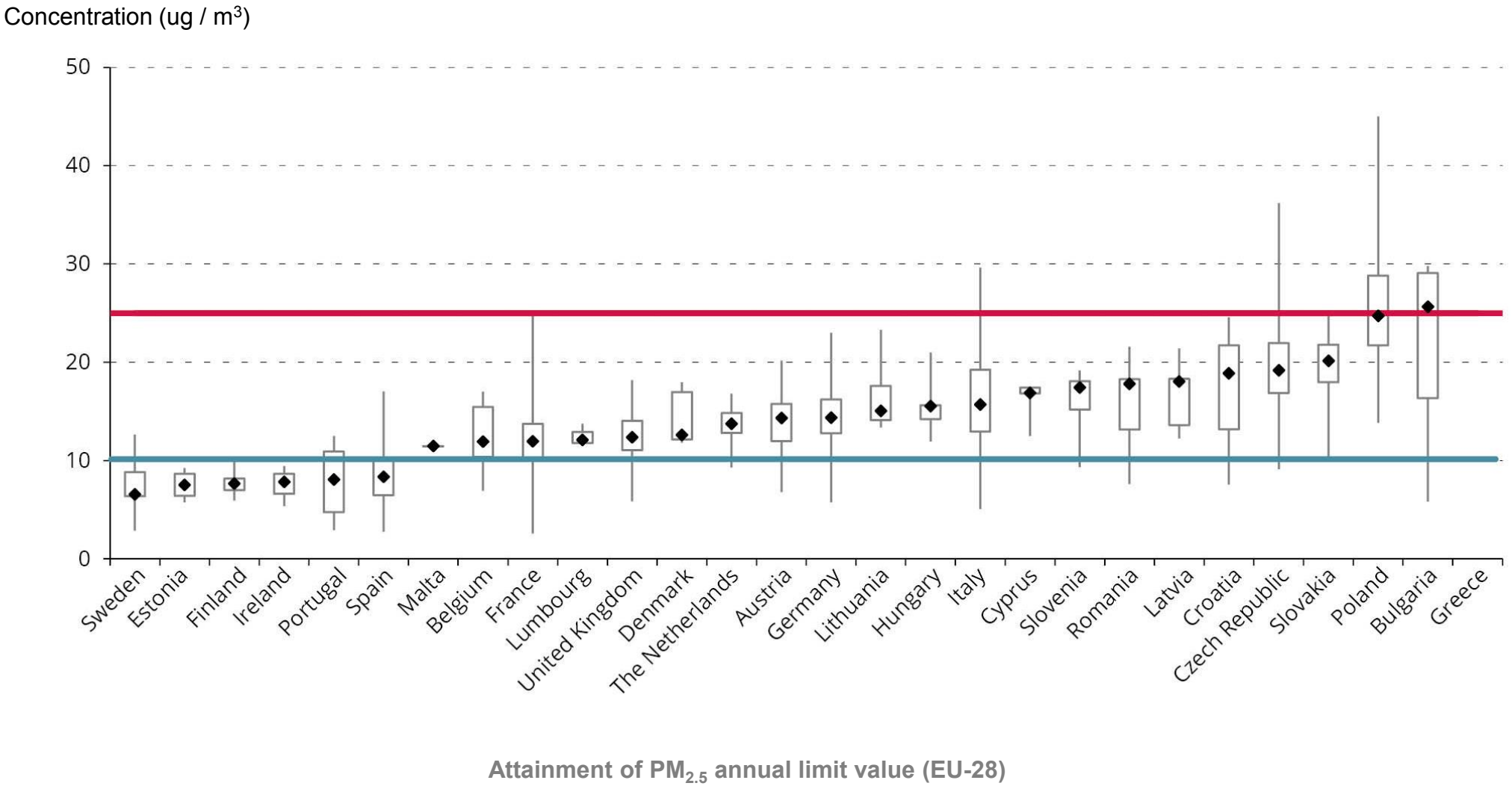
Particulate matter (PM_{10}) concentrations systematically exceed EU standards across large parts of Europe



Source: EEA Air Quality in Europe – 2016 Report

European Environment Agency

Air quality status – $PM_{2.5}$, EU28 (2014)

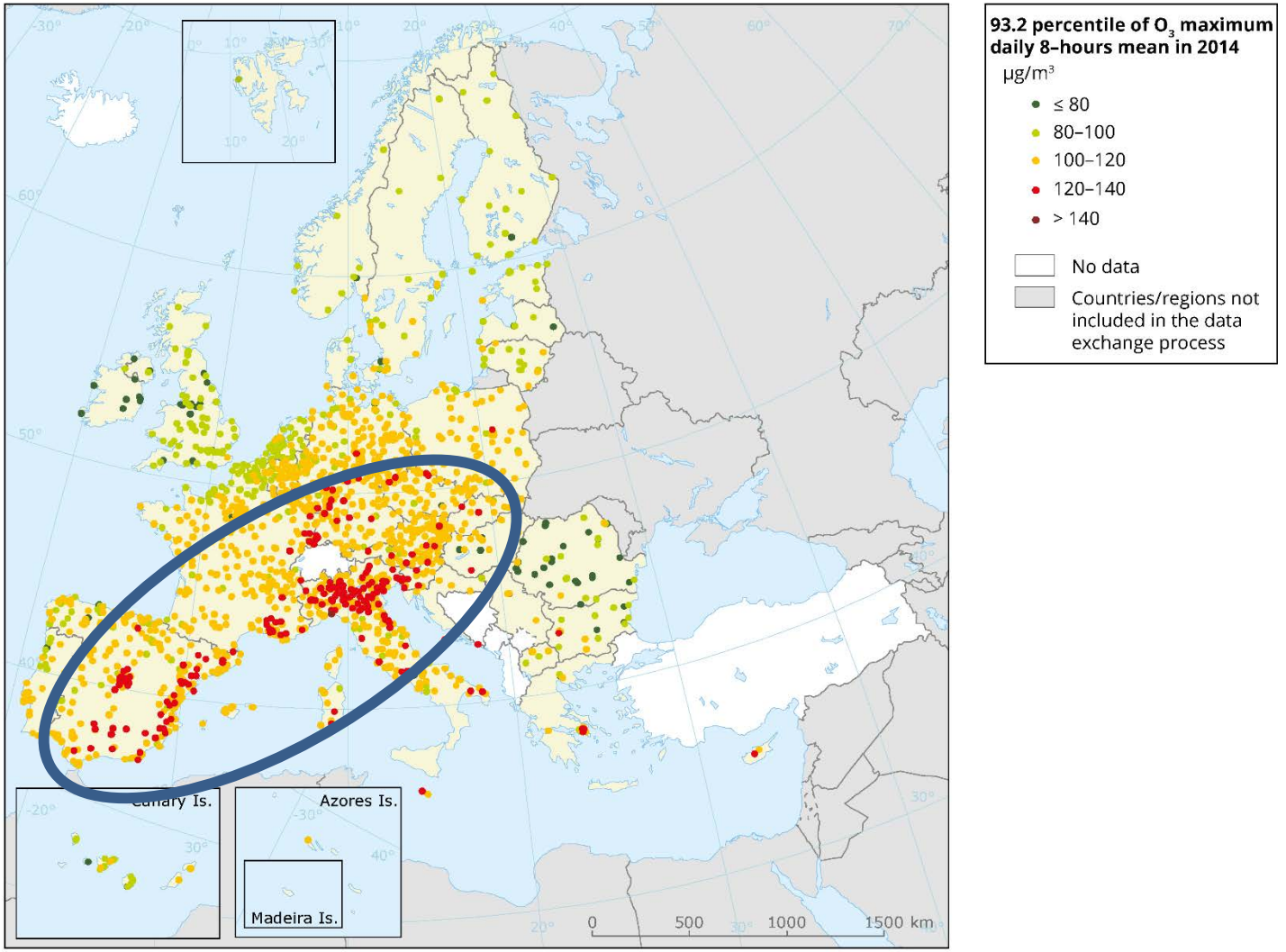


Attainment of $PM_{2.5}$ annual limit value (EU-28)

Source: EEA Air Quality in Europe – 2016 Report

European Environment Agency

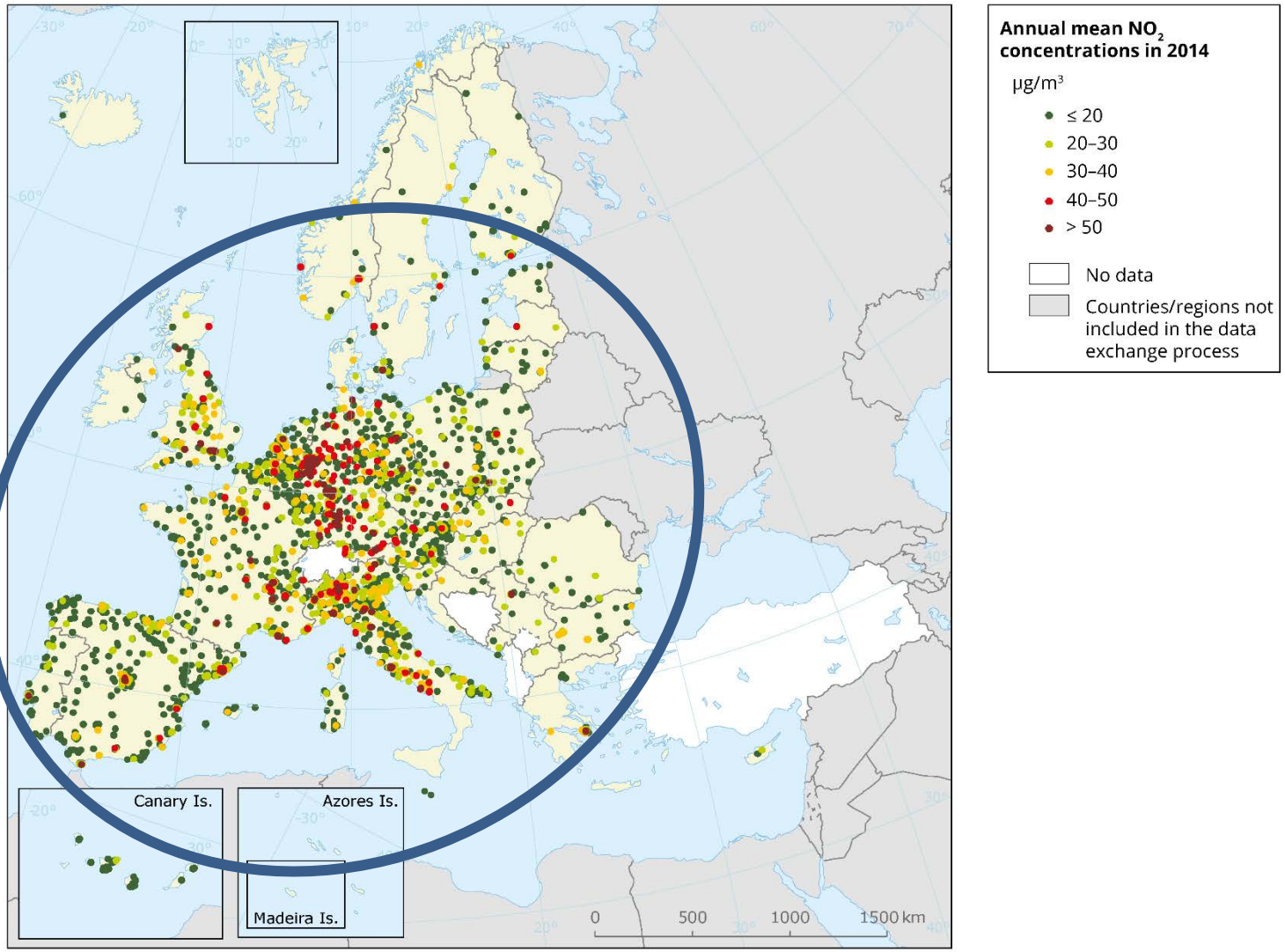
High ozone (O_3) concentrations harm both health and ecosystems (including crops)



Source: EEA Air Quality in Europe – 2016 Report

European Environment Agency

Nitrogen dioxide harms the respiratory and cardiovascular systems



Source: EEA Air Quality in Europe – 2016 Report

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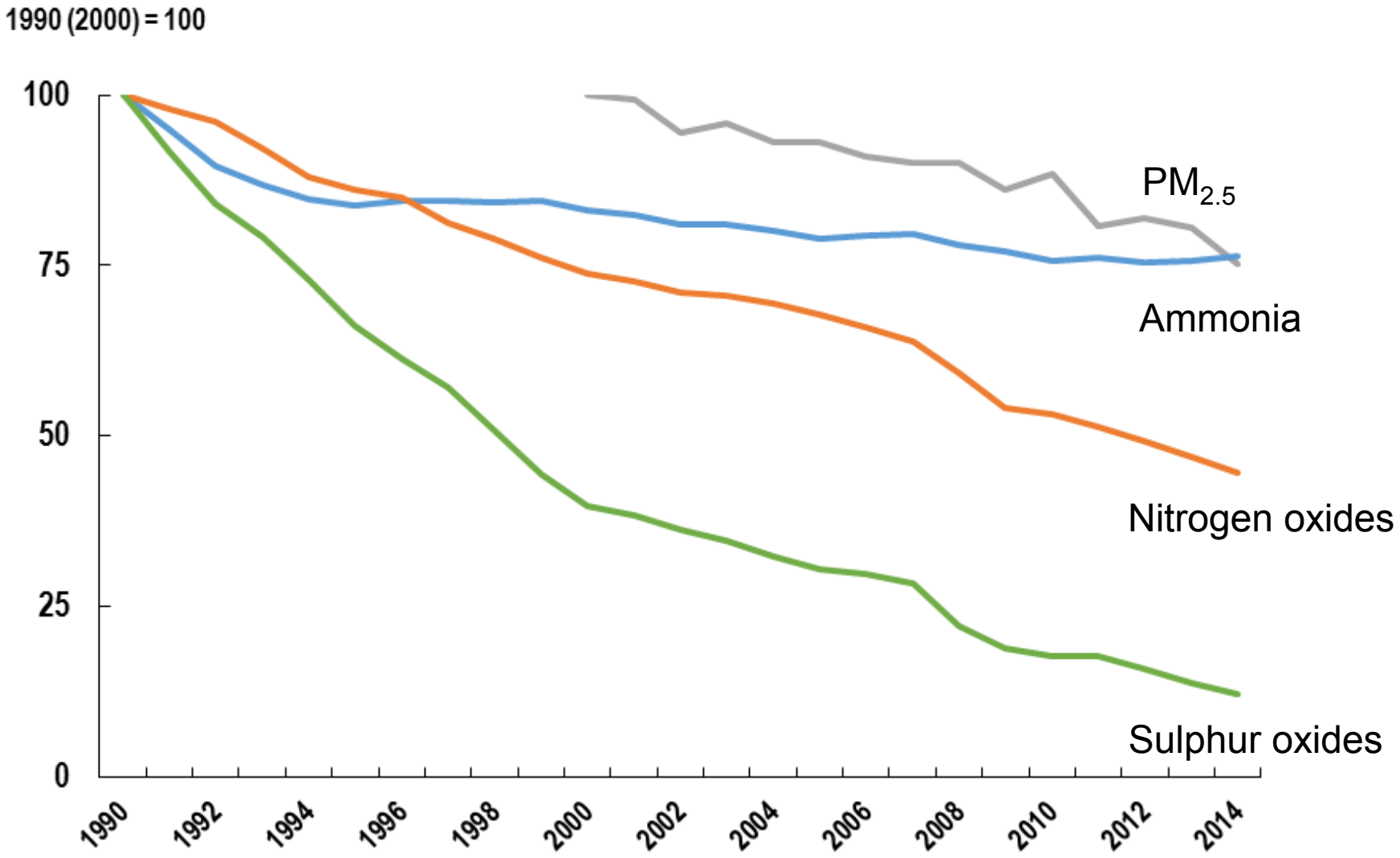
Air pollutant emissions – EU-28 (2014)



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Source: Air pollutant emissions data viewer (LRTAP Convention) EEA 2016

Health impacts - latest estimates

Country	Population	$PM_{2.5}$		NO_2		O_3	
		Annual mean (c)	Premature deaths	Annual mean (c)	Premature deaths	SOMO35 (c)	Premature deaths
Austria	8 451 860	15.7	6 960	19.3	910	5 389	330
Belgium	11 161 642	16.6	10 050	23.6	2 320	2 520	210
Bulgaria	7 284 552	24.1	13 700	16.5	570	4 082	330
Croatia	4 262 140	16.8	4 820	15.8	160	5 989	240
Cyprus	865 878	17.1	450	7.3	< 5	7 900	30
Czech Republic	10 516 125	19.6	12 030	17.1	330	4 266	370
Denmark	5 602 628	9.6	2 890	13.0	60	2 749	110
Estonia	1 320 174	7.8	690	10.8	< 5	2 545	30
Finland	5 426 674	5.9	1 730	9.4	< 5	2 011	80
France	63 652 034	14.5	45 120	18.7	8 230	4 098	1 780
Germany	82 020 578	14.2	73 400	20.4	10 610	3 506	2 500
Greece	11 003 615	19.7	13 730	14.6	1 490	8 532	
Hungary	9 908 798	18.2	12 890	16.8	390		
Ireland	4 591 087	9.2	1 520				
Italy	59 685 227	18.2			21 040		
Latvia	2 023 825			13.7		2 614	60
Lithuania		13.9			< 5	2 703	90
Luxembourg	537 039			23.4	80	3 167	10
Malta	421	12.5	230	12.0	< 5	7 403	20
Netherlands	16 779 575	14.3	11 530	21.3	1 820	2 410	270
Poland	38 062 535	22.8	48 270	16.1	1 610	3 792	1 150
Portugal	10 047 083	10.0	6 070	14.0	150	5 091	420
Romania	20 020 074	18.5	25 330	17.9	1 900	2 221	430
Slovakia	5 410 836	20.1	5 620	16.0	< 5	5 116	200
Slovenia	2 058 821	17.4	1 960	17.6	150	6 540	100
Spain	44 454 505	11.0	23 940	18.0	4 280	5 895	1 760
Sweden	9 555 893	6.0	3 020	11.5	< 5	2 317	160
United Kingdom	63 905 297	11.8	37 930	22.8	11 940	1 606	710
Albania	2 874 545	20.3	2 010	15.9	10	7 179	100
Andorra	76 246	11.9	40	14.3	< 5	7 303	< 5
Bosnia and Herzegovina	3 839 265	16.0	3 620	15.7	80	5 670	180
Former Yugoslav Republic of Macedonia	2 062 294	30.4	3 360	20.8		6 326	100
Iceland	321 857	6.5	80		< 5	1 473	< 5
Kosovo (a)	1 815 606			19.3	230		100
Liechtenstein			20		10	5 221	< 5
		13.8		23.2	10	7 795	< 5
			600	17.2	30	6 674	30
	051 275	7.1	1 590	14.4	170	2 443	70
	33 562	15.1	30	15.4	< 5	5 067	< 5
Serbia	7 181 505	21.1	10 730	20.2	1 340	4 505	320
Switzerland	8 039 060	13.9	4 980	22.4	1 140	4 919	240
Total (b)			**467 000**		**71 000**		**17 000**
EU-28 (b)			**436 000**		**68 000**		**16 000**

436 000 premature deaths in the EU-28 in 2013 originating from long-term exposure to PM.

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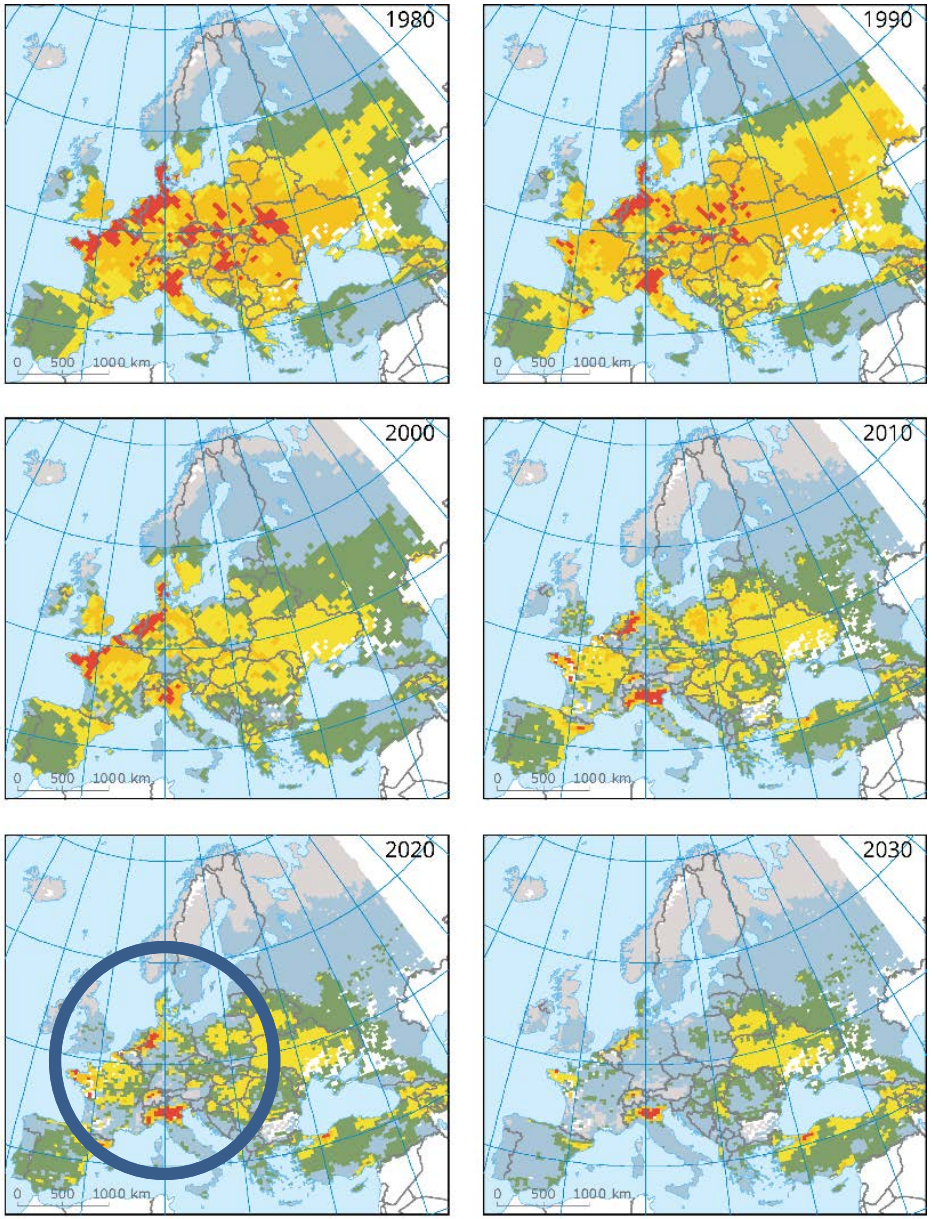
Source: EEA Air Quality in Europe – 2016 Report

Air pollution damages vegetation and ecosystems

1. Acidification
2. Eutrophication



Source: CSI005, EEA, 2015

European Environment Agency

Looking forward: Estimated future air pollution health impacts

Continued improvements in air pollution levels are expected under current legislation, but beyond 2030 only slow progress is expected.

Additional measures are needed if Europe is to achieve the long-term objective of air pollution levels that do not lead to unacceptable harm to human health and the environment. (12/2013 Clean Air Policy Package).

- Directive (EU) 2015/2193 on medium combustion plants.
- Revision of the National Emission Ceilings Directive 2001/81/EC .
- New Real Driving Emissions test procedure (NOx).
- New regulation on non-road mobile machinery emissions.

Looking forward: transitions, risk and precaution

- Efficiency gains in current systems will not get us to the WHO norms
- Transitions in transport, energy and agriculture needed
  - 2030-2050 climate and energy objectives
  - E-driving report
  - Carbon lock-in report
  - CAP reform
- Importance of spatial planning!
- Risk and precaution: role of new scientific knowledge
  - HBMI
  - Chemical braindrain (Grandjean)

Air pollution causes real economic costs

Damage cost of mortality – at least EUR 330 billion.

Direct economic damage - EUR 15 billion from workdays lost.

Direct economic damage - EUR 4 billion in healthcare cost.

Direct economic damage - EUR 3 billion crop yield loss.

(Source: European Commission, for 2010)

Air pollution and health – key conclusions

Air quality policies have delivered many improvements as a direct result of policies. Exceedances of European standards tend to be rare.

However, considerable impacts on human health (400 000 premature deaths each year) and on the environment persist.

Effective air quality policies require action and cooperation on global, European, national and local levels.

The more stringent WHO guidelines should be applied and made part of European legislation.

Systemic solutions must be found to achieve the EU's 2050 vision of living well within the limits of the planet.

European Environment Agency

Thank you

Hans.Bruyninckx@eea.europa.eu

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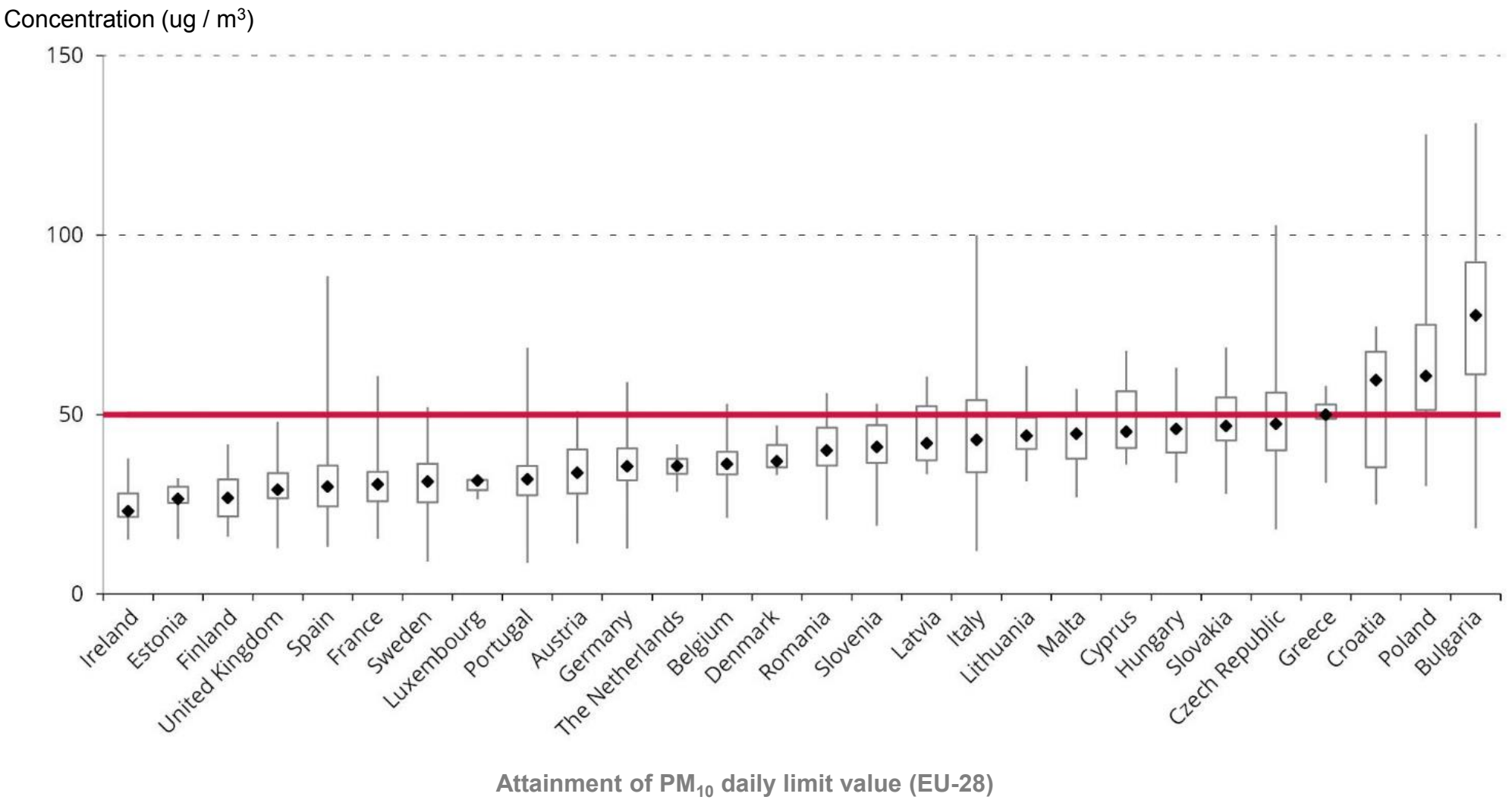
Air quality status – PM_{10}, EU-28 (2014)



Attainment of PM_{10} daily limit value (EU-28)

Source: EEA Air Quality in Europe – 2016 Report

European Environment Agency