

Luchtkwaliteit: een Europees perspectief

Conferentie Luchtkwaliteit
Brussel, 5 december 2014

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European Environment Agency



EEA rapporten 2014

EEA Report | No 7/2014

Focusing on environmental pressures from long-distance transport

TERM 2014: transport indicators tracking progress towards environmental targets in Europe

ISSN 1725-9177

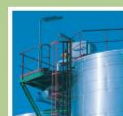
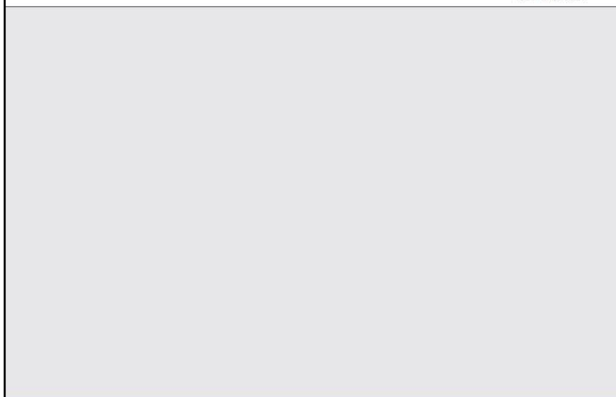


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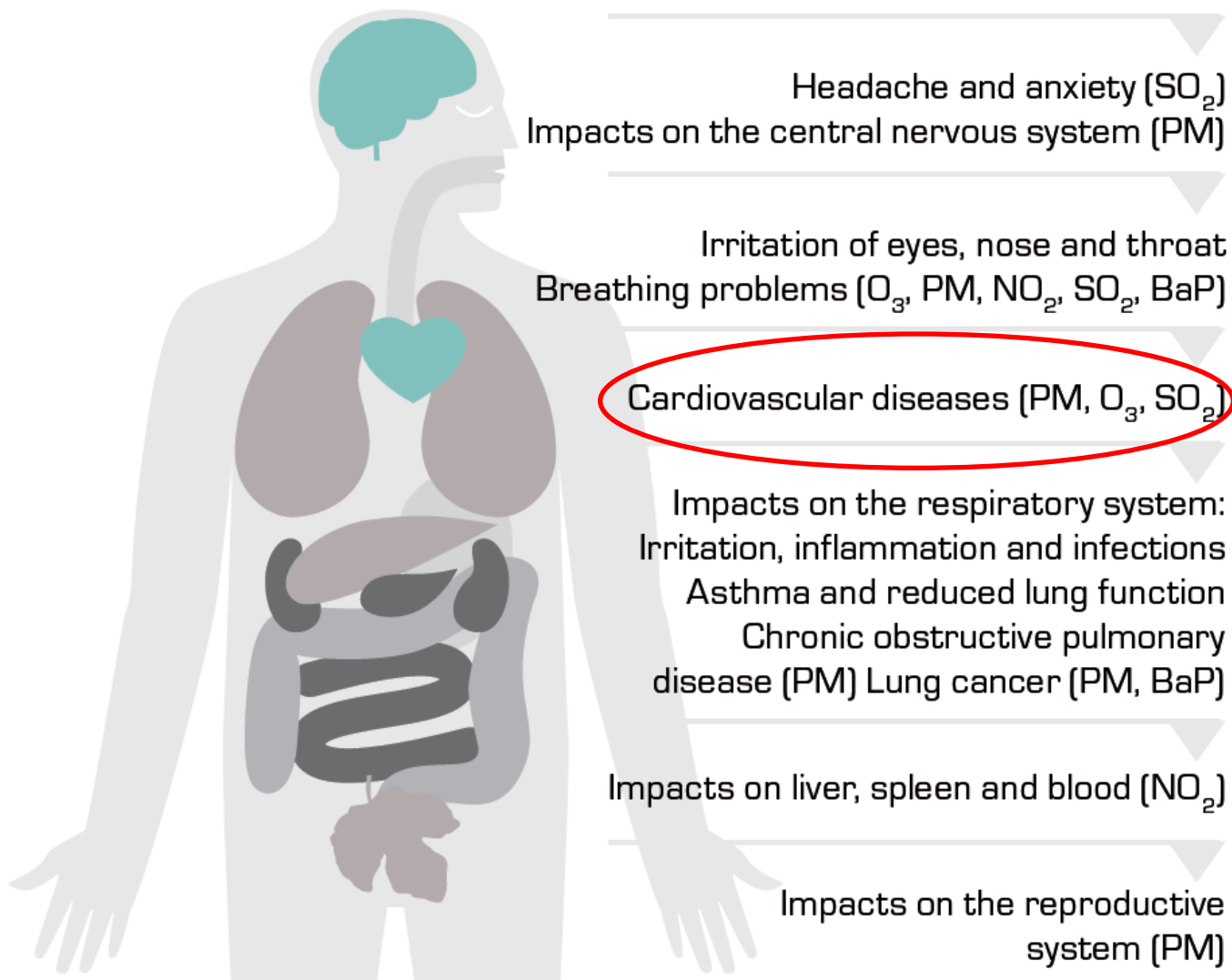
Air quality in Europe — 2014 report

ISSN 1725-9177



European Environment Agency 

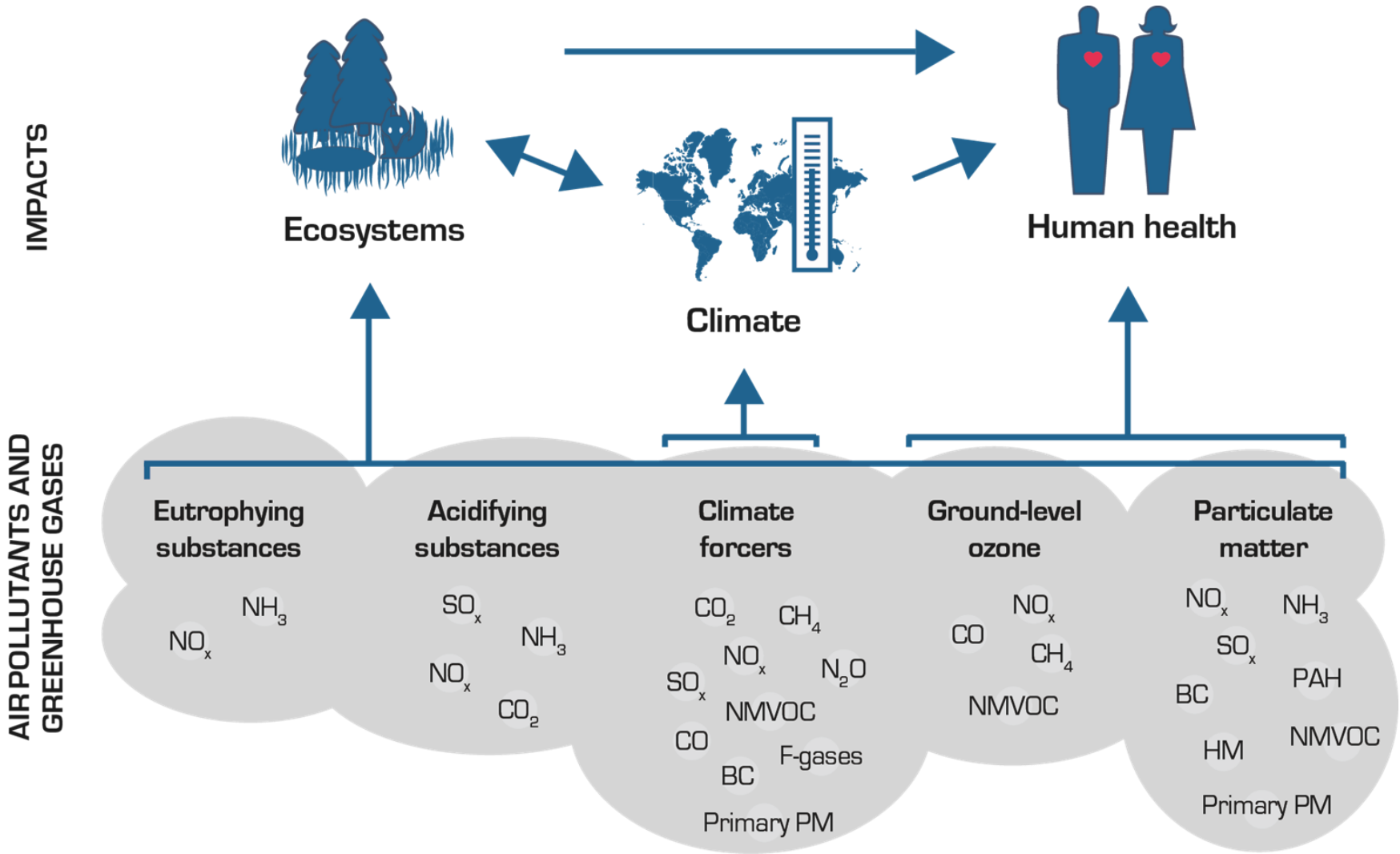
Luchtverontreiniging – een ernstig gezondheidsprobleem



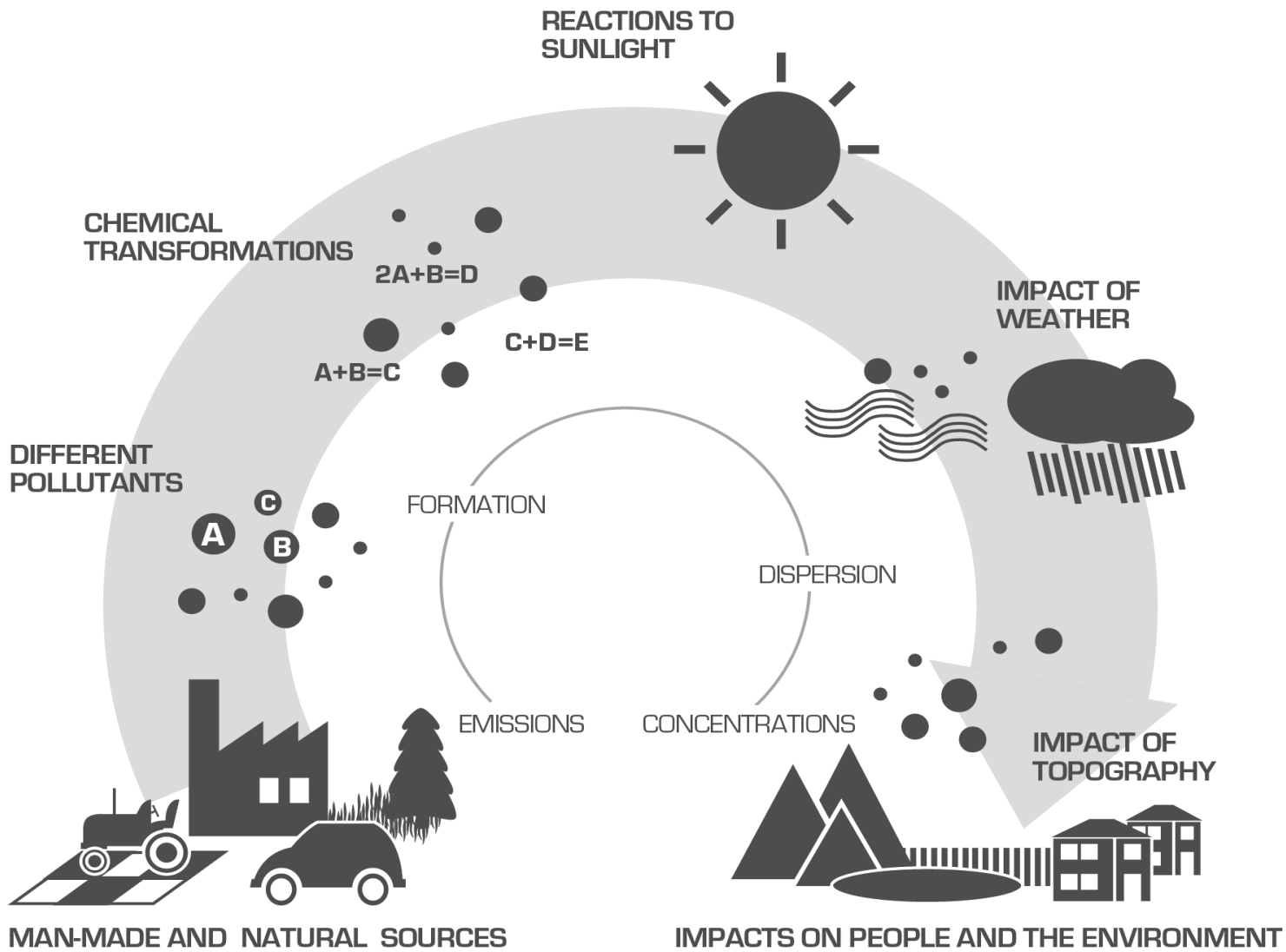
Haast alle economische activiteiten zijn 'drivers' van emissies van pollutanten

- Electriciteitsproductie
- Transport
- Industriële productie
- Landbouw
- Afvalverwerking
- Verwarmingsinstallaties
- ...

Luchtverontreiniging is ook schadelijk voor ecosystemen en draagt bij aan klimaatverandering

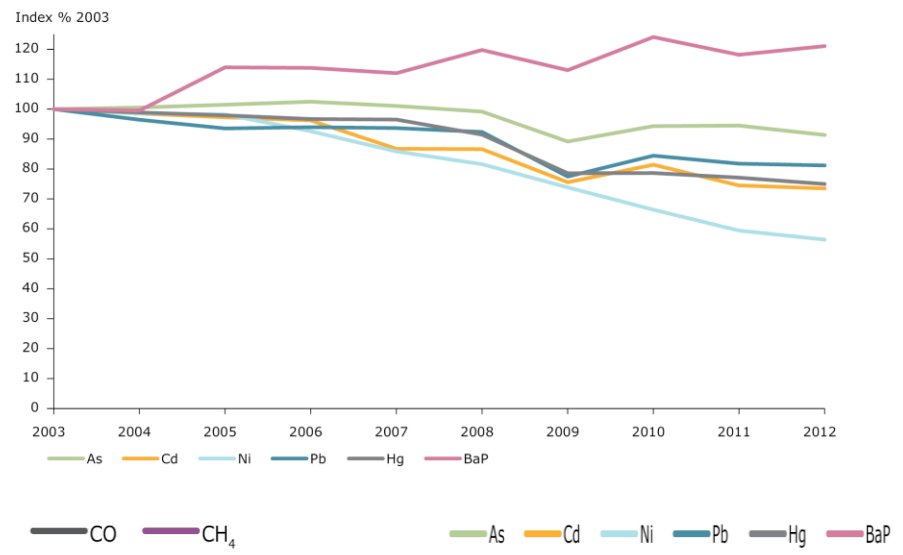
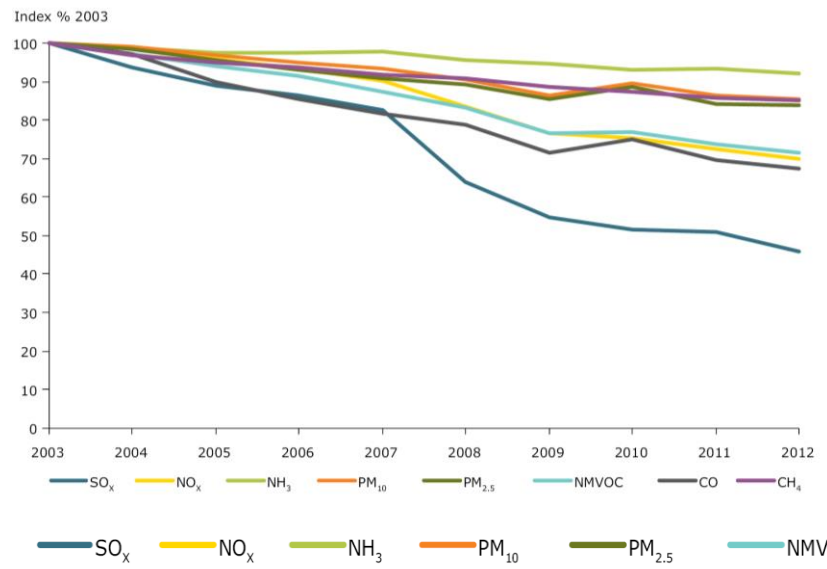


Belangrijk onderscheid: uitstoot reducties vs. reducties in concentraties



Emissies van de meeste pollutanten zijn verminderd

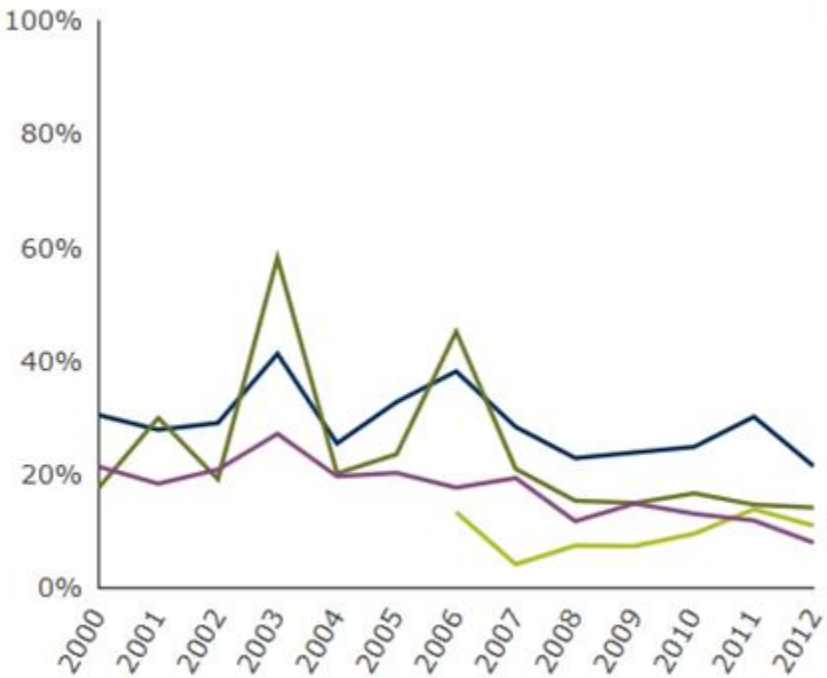
EU Member States have made progress in cutting emissions of most air pollutants (2003-2012)



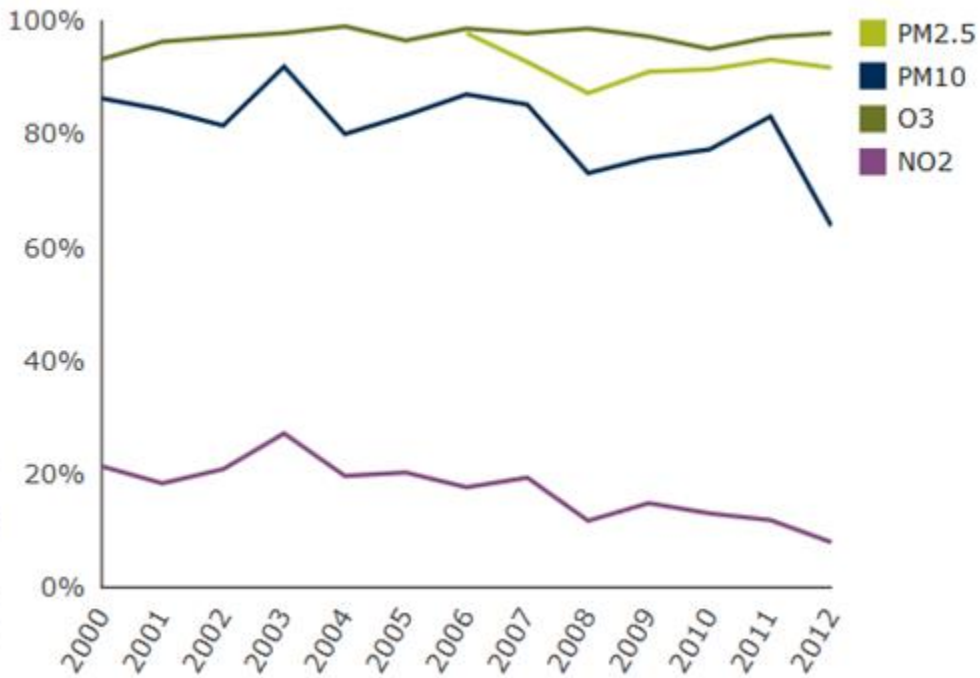
Source: EEA

Maar, blootstelling aan verontreiniging blijft een gezondheidsprobleem

Urban population exposed to concentrations above **EU limit/target values**



Urban population exposed to concentrations above **WHO air quality guidelines**

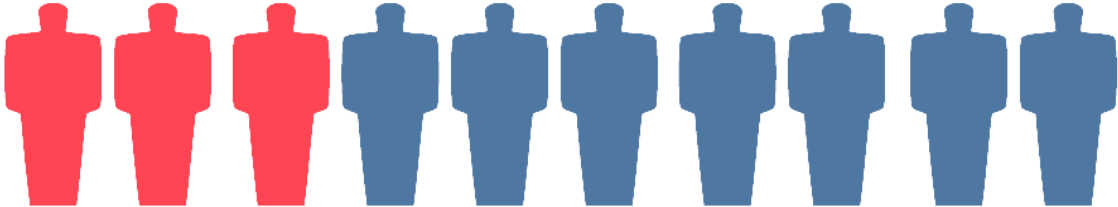


Source: EEA

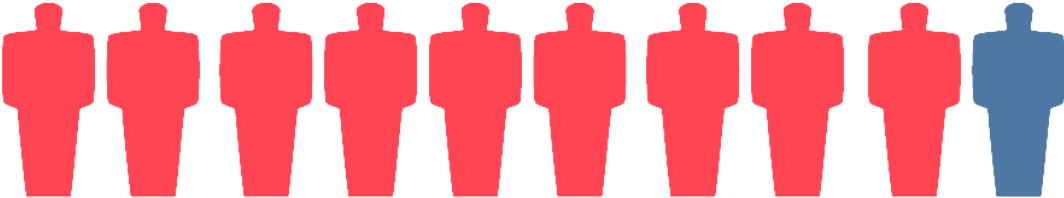
Ondanks reducties in particulate matter (PM) emissies, zijn PM concentraties nog niet op een 'veilig' niveau

Share of urban population exposed to dangerous levels of particulate matter in Europe

3 out of 10
exposed to exceedances of the EU daily limit value

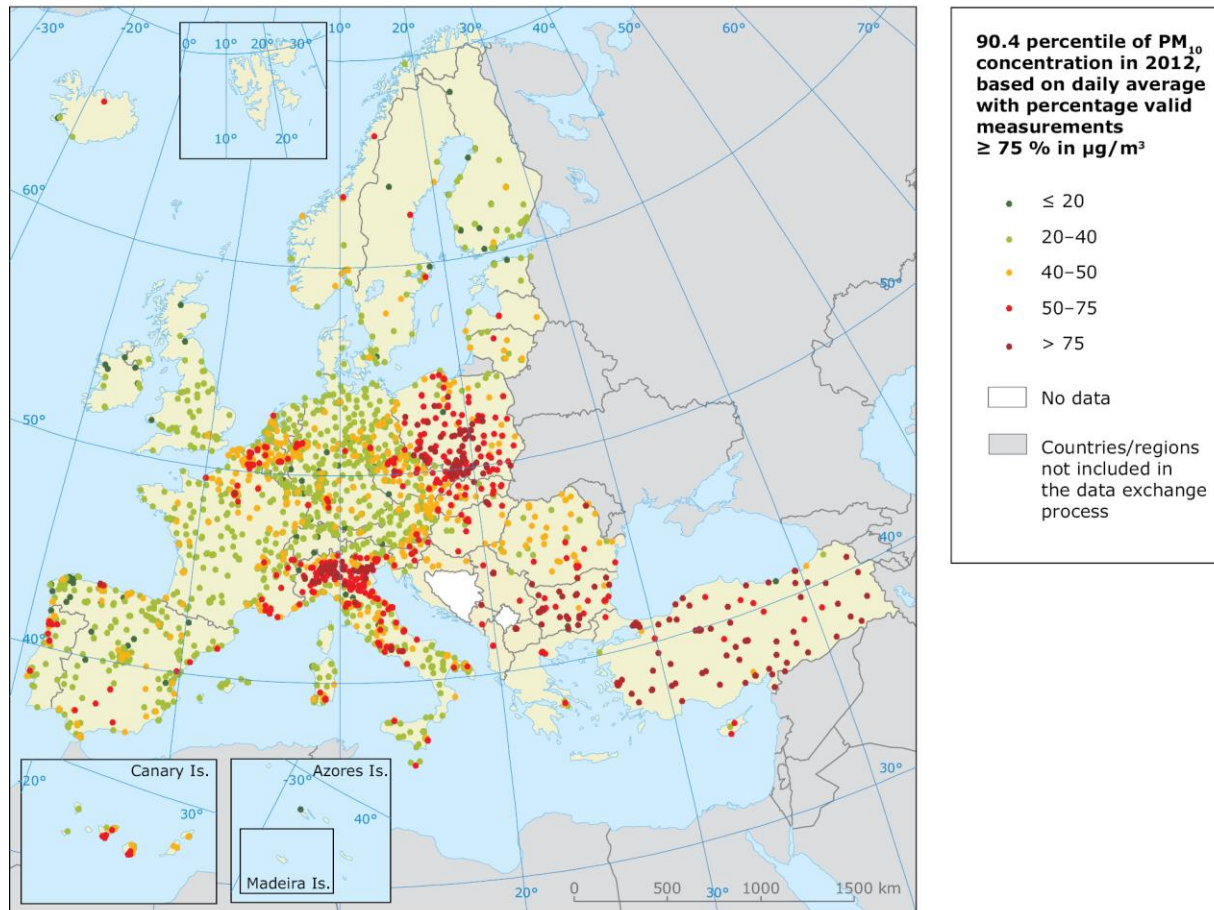


9 out of 10
exposed to exceedances of the WHO guideline value



PM concentraties overschrijden systematisch EU limieten in grote delen van Europa

Map 4.1 Concentrations of PM₁₀ (2012)



Note: The map shows the proximity of recorded PM₁₀ concentrations to the daily limit value, allowing 35 exceedances over one year of the 50 $\mu\text{g}/\text{m}^3$ threshold — represented here by the 90.4 percentile of the data records in one year. Exceedances are shown as red and dark red dots.

Source: AirBase v. 8.

Huidige PM concentraties – het belangrijkste milieurisico voor 'premature deaths' in Europa

Table 4.4 Premature deaths attributable to PM_{2.5} and O₃ exposure in 2011 in 40 European countries and the EU-28

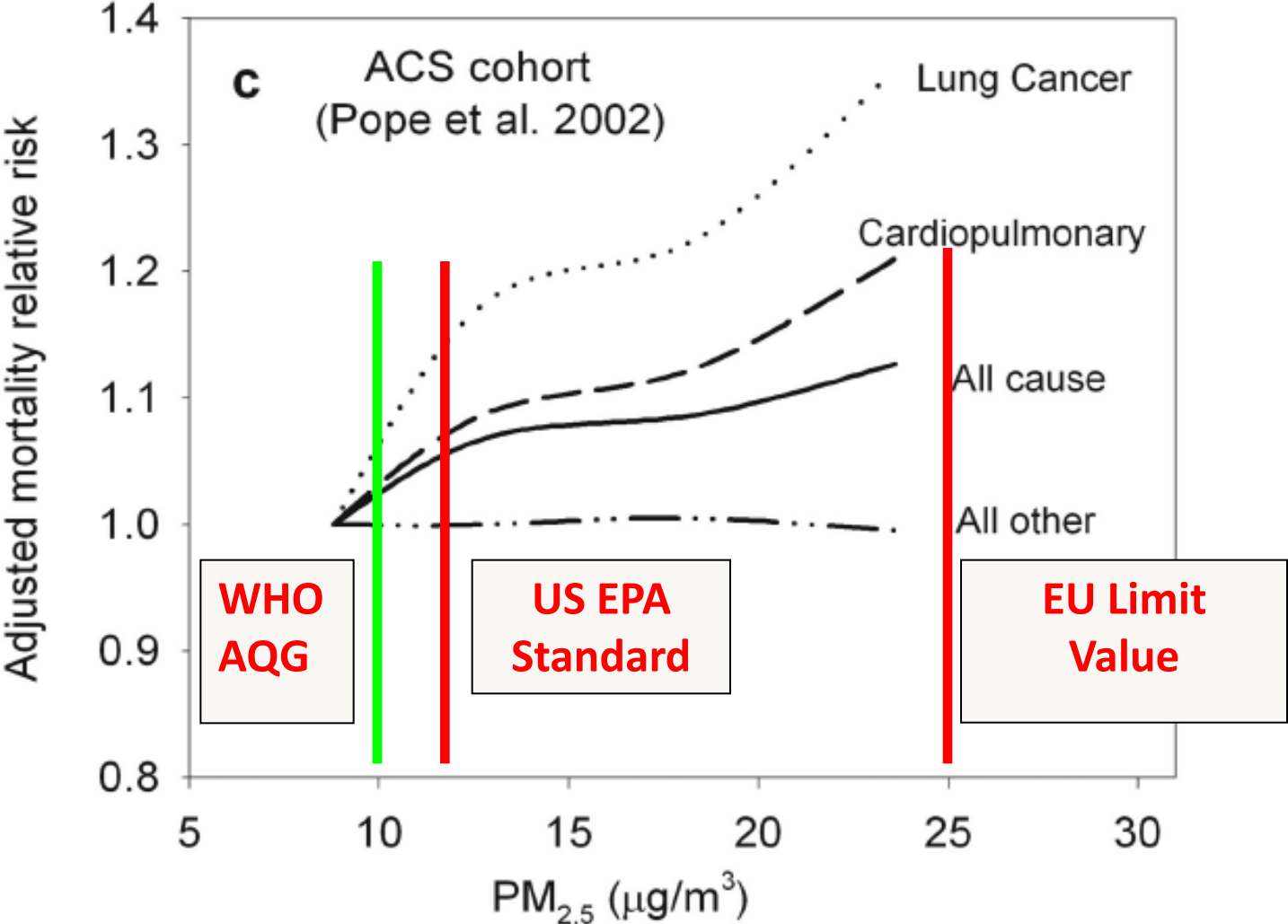
Country	Population	PM _{2.5}				O ₃			
		Annual mean	Best estimate	Low (*)	High (*)	SOMO35	Best estimate	Low (*)	High (*)
AT Austria	8 045 346	16.3	6 768	4 450	8 899	5 452	309	149	458
BE Belgium	10 325 029	17.3	10 304	6 776	13 547	2 714	220	106	326
BG Bulgaria	8 117 809	18.3	10 806	7 131	14 161	5 215	425	205	629
CY Cyprus	886 301	21.0	710	468	929	8 773	41	20	61
CZ Czech Republic	10 234 773	18.8	10 872	7 166	14 262	4 743	376	182	557
DE Germany	82 201 457	14.8	69 762	45 754	91 947	3 668	2 342	1 131	3 469
DK Denmark	5 394 271	12.5	3 979	2 603	5 257	2 752	117	57	174
EE Estonia	1 343 899	8.0	647	421	859	2 516	27	13	40
ES Spain	39 113 763	11.1	25 046	16 365	33 127	5 858	1 772	857	2 625
FI Finland	5 174 350	7.4	2046	1 331	2 717	2 052	74	36	110
FR France	58 494 279	15.3	46 339	30 418	61 024	4 439	1 829	884	2 709
GR Greece	10 939 253	16.8	10 700	7 037	14 066	9 182	796	385	
HR Croatia	4 440 678	19.6	5 437	3 586	7 128	6 470	246		
HU Hungary	10 186 452	23.1	15 952	10 554	20 852	5 828			
IE Ireland	3 740 194	7.9	1 229	800	1 631				42
IT Italy	56 769 828	19.8	64 544	42 650	84 437	2 839	1 633		
LT Lithuania	3 493 293	12.7	2 556	1 672	2 462		85		
LU Luxembourg	446 716	13.3	284	188	352	2 527			
LV Latvia	2 393 215	11.1	899	599	1 367	2 708			86
MT Malta	394 641	25.8	1 562	962	326			7	23
NL Netherlands	15 000 000	11.5	10 305	8 305	12 305		229	111	340
PL Poland	38 100 000	19.5	42 412	28 412	54 412	4 065	1 100	531	1 629
PT Portugal	10 500 000	10.5	8 000	5 000	11 000	4 552	330	159	488
RO Romania	21 250 000	10.5	15 000	9 000	21 000	3 276	633	306	938
RS Serbia	7 250 000	15.5	5 000	3 000	7 000				
SI Slovenia	2 000 000	12.1	2 749	5 600	2 628	181	87	268	
SK Slovakia	5 400 000	17.4	1 938	1 278	2 543	7 062	97	47	143
UA Ukraine	46 000 000	21.8	6 300	4 163	8 245	6 051	243	117	360
UK United Kingdom	61 050 805	12.4	39 450	25 809	52 116	1 471	634	306	940
VA Vatican	82 833	13.7	51	34	67	7 891	4	2	6
YU Yugoslavia	3 613 517	17.2	2 042	1 344	2 684	7 769	129	62	191
Bosnia and Herzegovina	4 558 292	17.2	3 412	2 246	4 483	5 702	154	75	229
CH Switzerland	7 687 824	12.6	4 394	2 876	5 803	5 435	256	124	378
IS Iceland	294 964	4.6	54	35	72	1 094	2	1	3
LI Liechtenstein	37 372	8.5	16	10	21	5 128	1	1	2
MC Monaco	52 324	16.4	29	19	38	8 354	2	1	3
ME Montenegro	671 451	15.1	482	317	634	6 970	31	15	45
MK former Yugoslav Republic of Macedonia, the	2 071 302	15.8	1 763	1 158	2 319	7 110	108	52	160
NO Norway	4 629 088	6.3	1473	958	1 957	2 395	74	36	110
RS Serbia	9 212 284	21.2	13 063	8 640	17 083	5 793	495	239	733
SM San Marino	27 602	14.7	25	16	33				
All	516 729 933		458 065	301 304	602 092		17 407	8 413	25 782
EU-28	487 038 228		430 219	282 943	565 573		16 160	7 810	23 937

Around 430 000 premature deaths in the EU-28 each year originating from long-term exposure to PM.

Note: (*) The low and high columns show the upper and lower boundary of the 95 % confidence interval taking only into account the uncertainty in the relative risk.

The numbers presented are not rounded to ease comparison.

Air Quality Standards for annual PM2.5 concentration



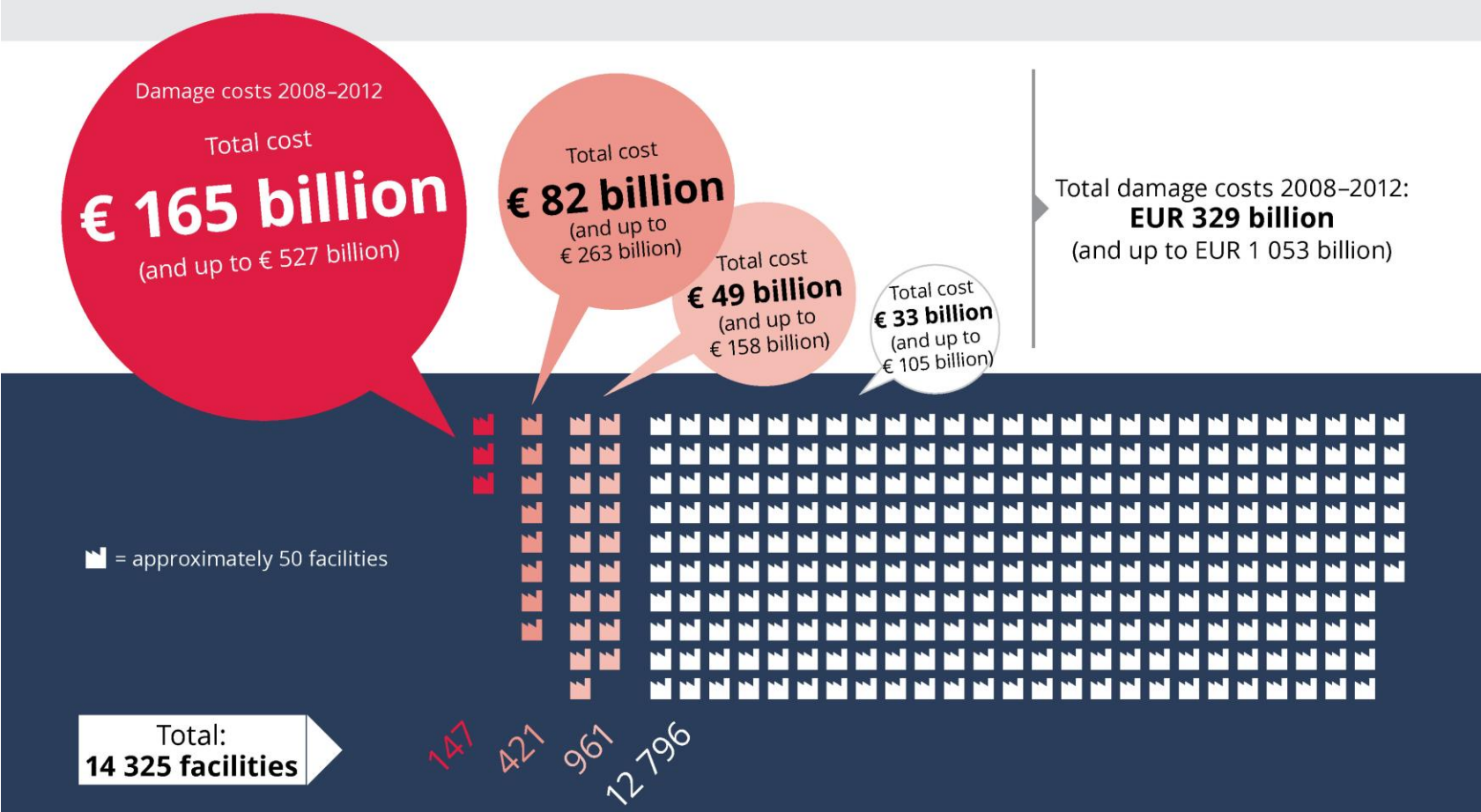
Source: Utrecht University

Schade door luchtverontreiniging (2010)

- 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: EC, 2013: Impact assessment for new policy package to clean up Europe's air.

Gezondheids- en milieukosten door verontreiniging van industriële faciliteiten (2008-2012)

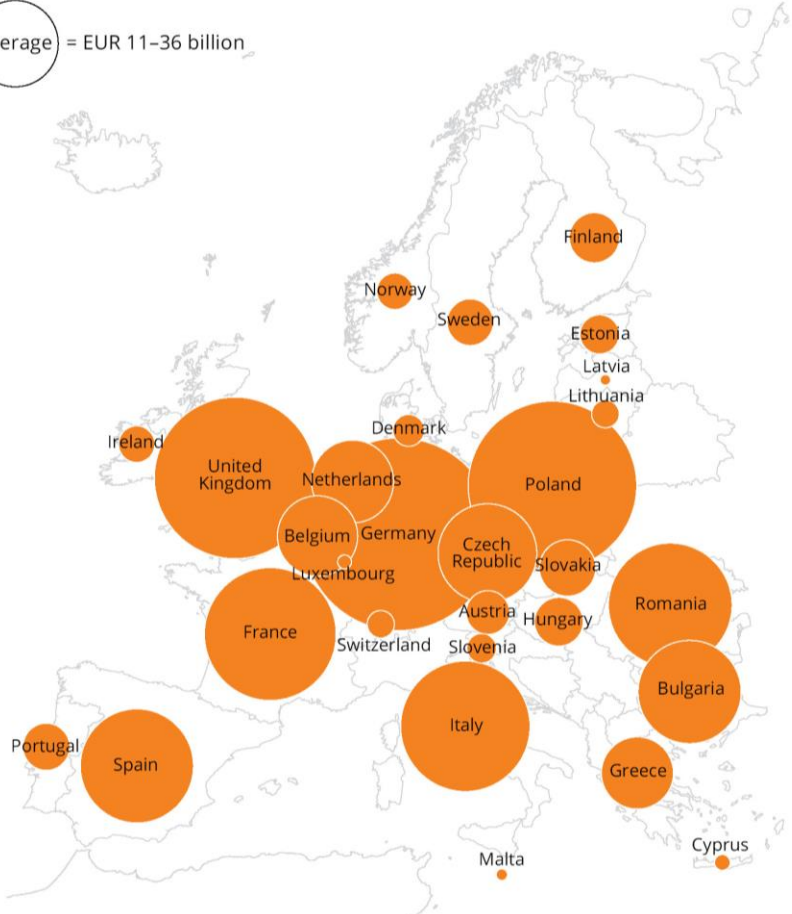


Source: EEA

Health and environmental costs of air pollution: damages caused by facilities in countries 2008-2012

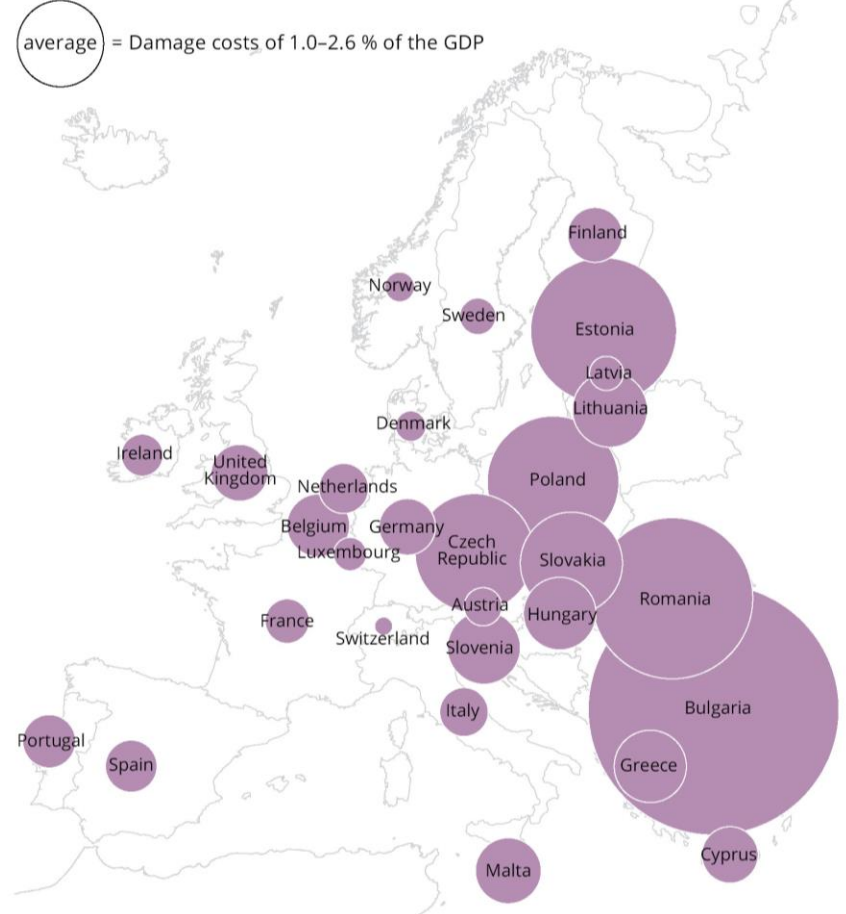
Absolute costs caused

average = EUR 11-36 billion



Costs caused relative to GDP

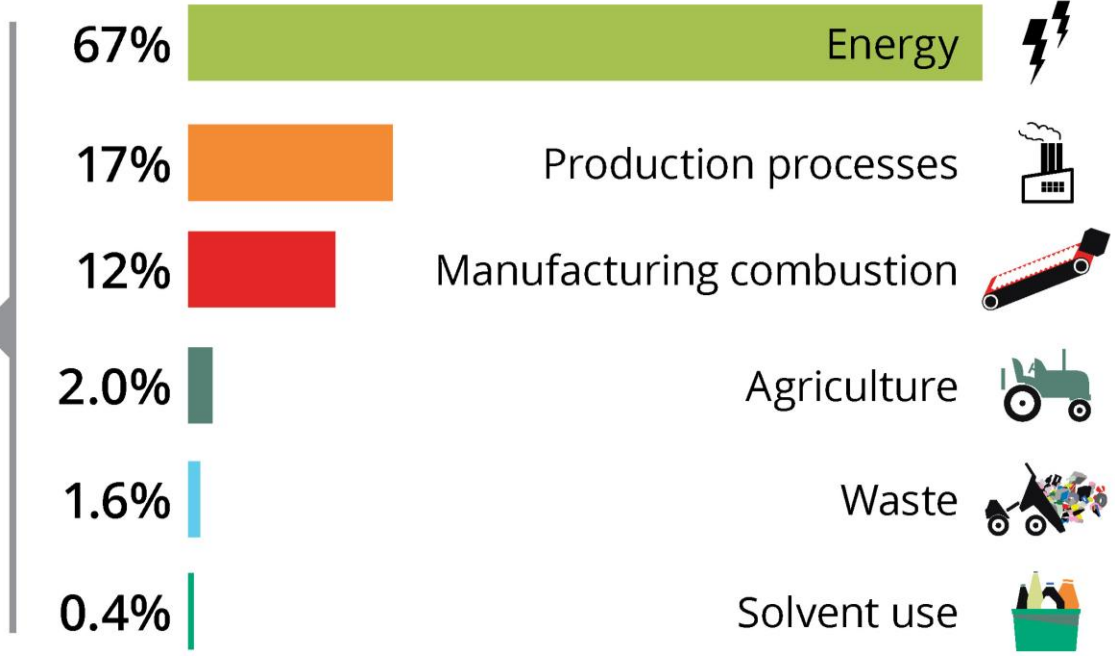
average = Damage costs of 1.0-2.6 % of the GDP



Source: EEA

Kosten naar industriële sector 2008-2012

TOTAL COST:
€ 329 billion
(and up to € 1 053 billion)



Source: EEA

Totale kosten naar type pollutant (2008-2012)

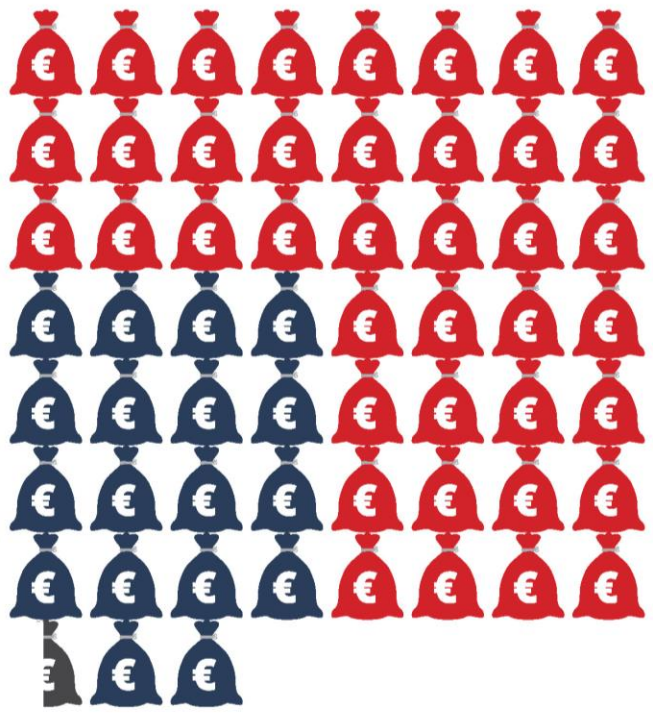
Total damage costs in 2012:
€ 59 billion (and up to € 189 billion)

Main air pollutants
(NH₃, NO_x, PM₁₀, SO₂, NMVOCs)
€ 40 billion
(and up to € 115 billion)

Carbon dioxide
€ 18 billion
(and up to € 73 billion)

Heavy metals
(As, Cd, Cr, Hg, Ni, Pb)
€ 0.34 billion

Organic pollutants
(benzene, dioxins, furans, PAHs)
€ 0.10 billion



Source: EEA

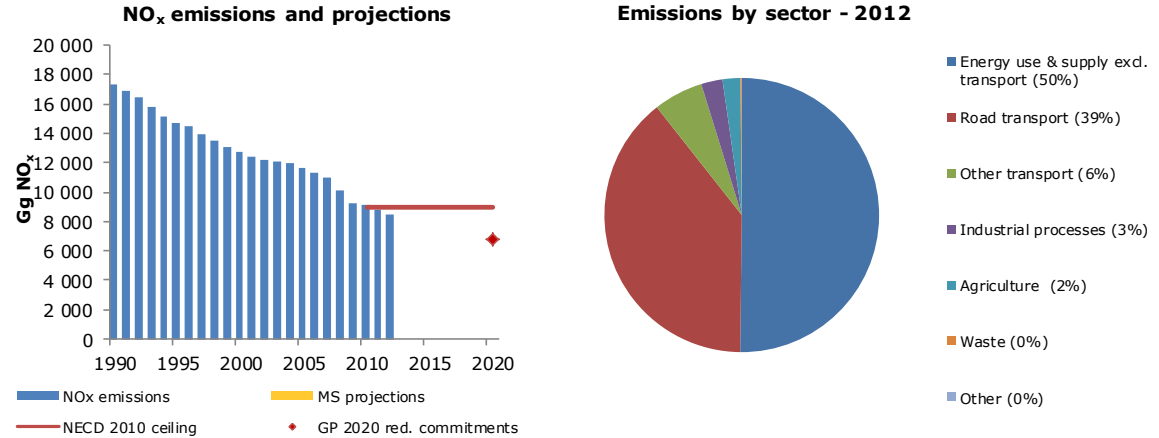
Kosten van luchtverontreiniging door industriële faciliteiten, 2008-2012 – België (top 10)

Rank	Facility	City
45	TOTAL RAFFINADERIJ	Antwerpen
56	ARCELOR MITTAL	Gent
109	ARCELORMITTAL UPSTREAM sa (COKE FONTE)	Ougree
110	ESSO RAFFINADERIJ	Antwerpen
231	BASF	Antwerpen
284	AGC FLAT GLASS EUROPE	Moustier-Sur-Sambre
285	ELECTRABEL CENTRALE RODENHUIZE	Gent
312	ELECTRABEL CENTRALE LANGERLO	Genk
346	ELECTRABEL CENTRALE RUIEN	Kluisbergen
372	HOLCIM BELGIQUE sa	Obourg

Drivers for emissions of nitrogen oxides

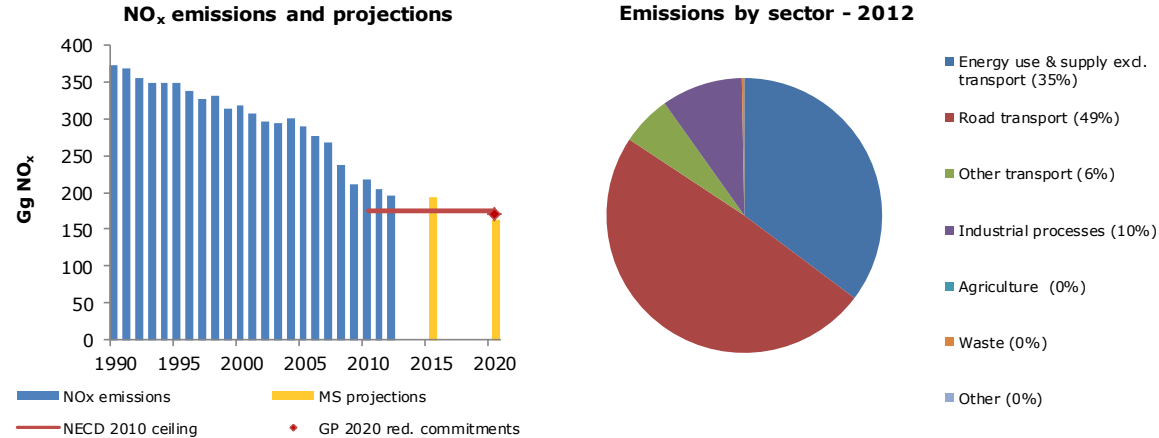
Nitrogen oxides (NO_x)

EU-28



Nitrogen oxides (NO_x)

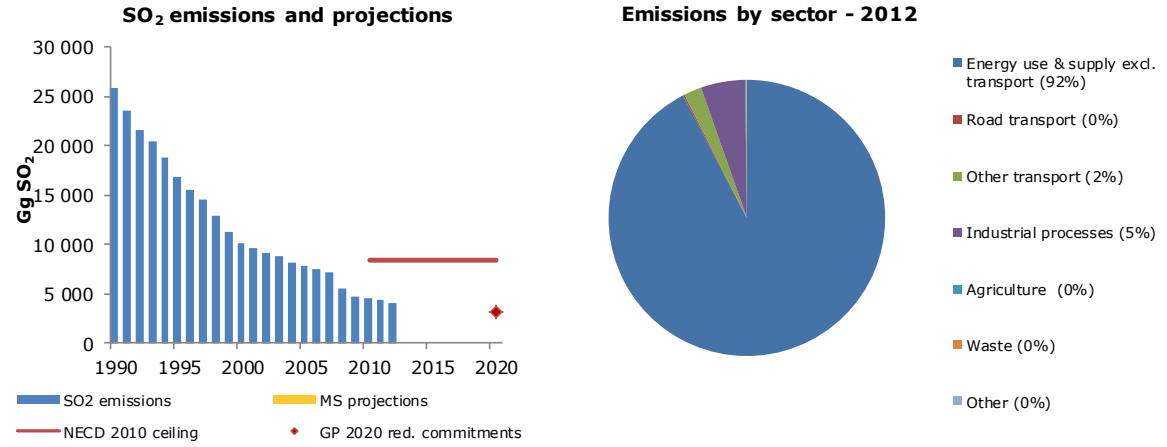
Belgium



Drivers for emissions of sulphur dioxide

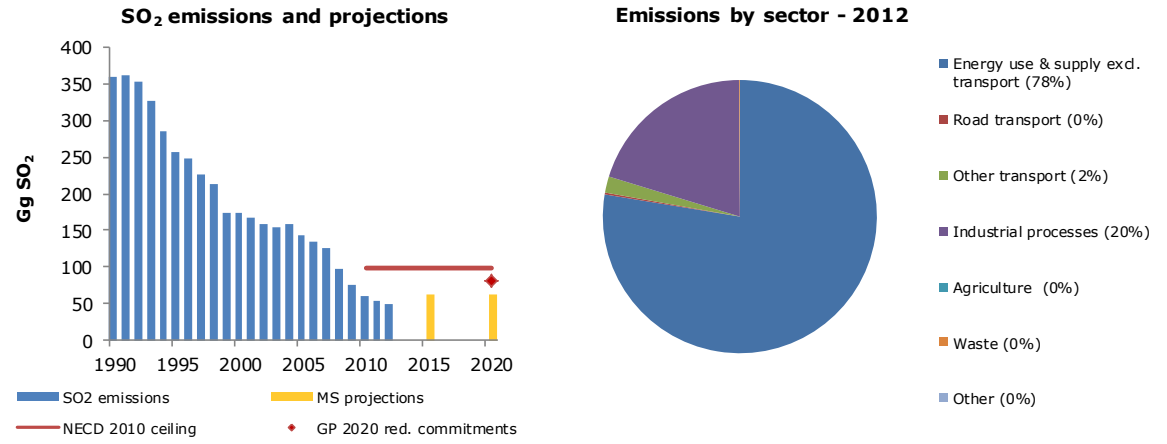
Sulphur dioxide (SO₂)

EU-28



Sulphur dioxide (SO₂)

Belgium



Europese antwoorden?

- Beter implementatie (national emission ceilings and AQ limits).
- Verdere significante reducties zijn noodzakelijk: nieuwe wetgeving
- Co-benefits klimaat- en energiebeleid
- Investeren in betere kennis.

Thank you

Hans.Bruyninckx@eea.europa.eu

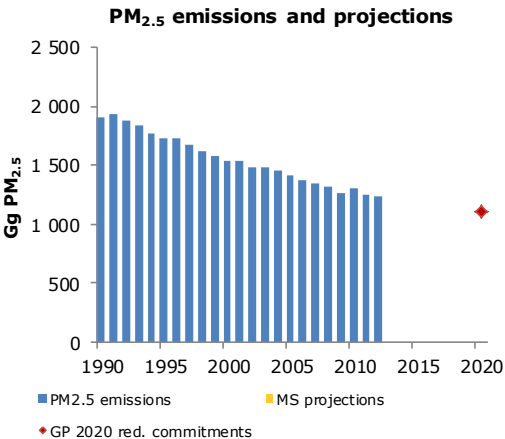
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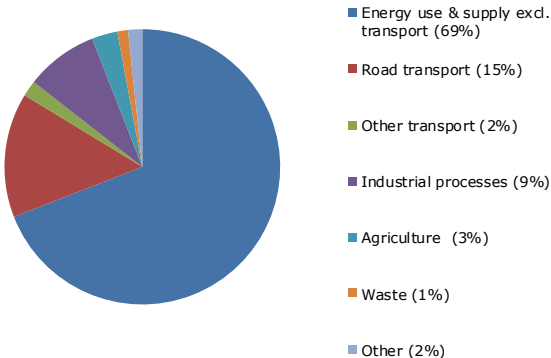
Drivers for emissions of fine particulate matter

Fine particulate matter (PM_{2.5})

EU-28

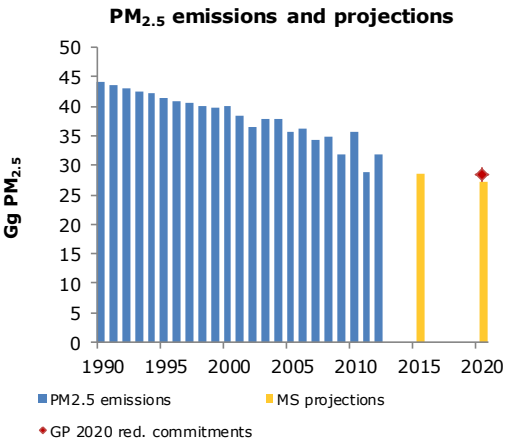


Emissions by sector - 2012

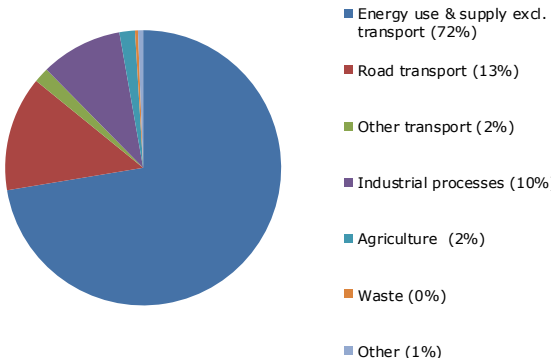


Fine particulate matter (PM_{2.5})

Belgium



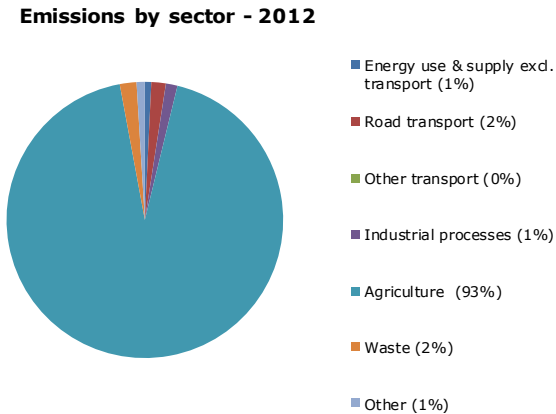
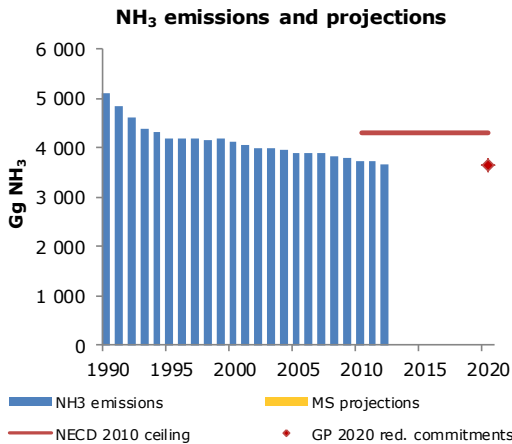
Emissions by sector - 2012



Drivers for emissions of ammonia

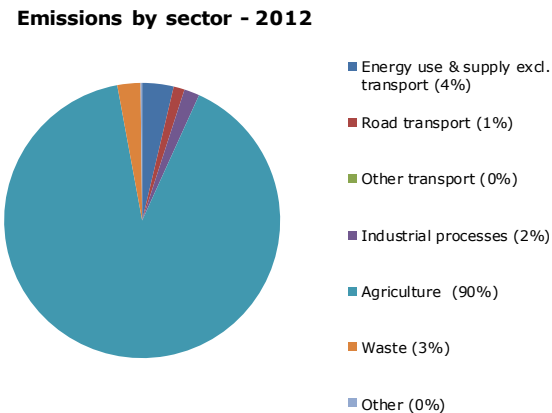
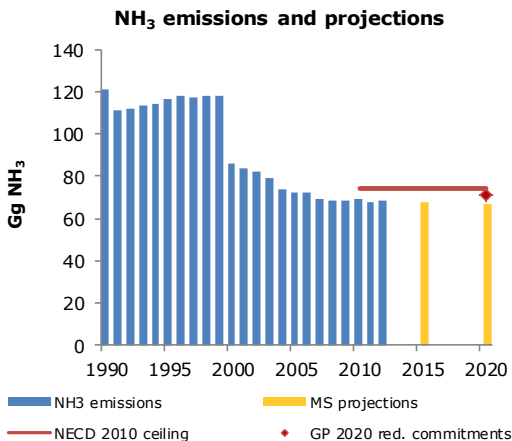
Ammonia (NH₃)

EU-28



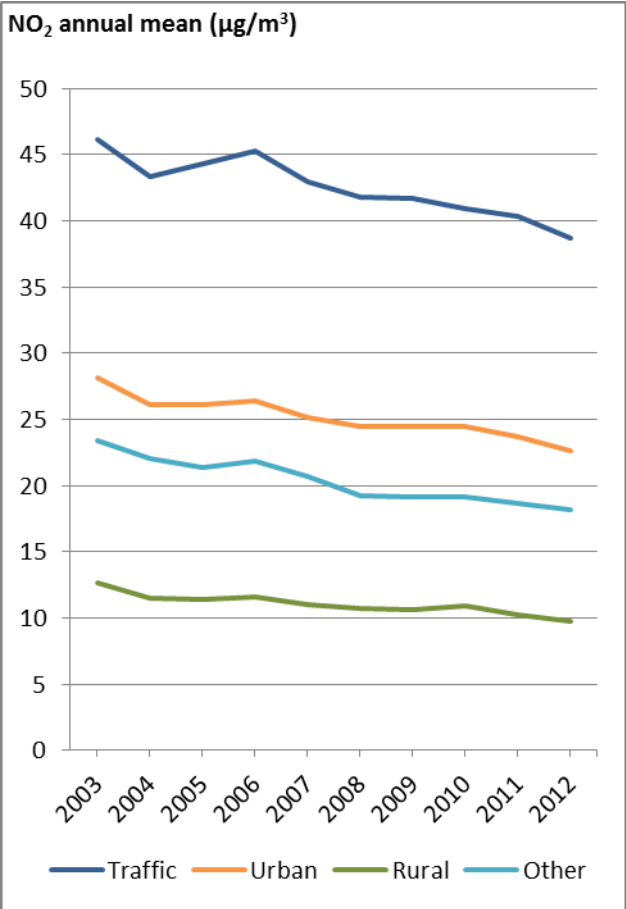
Ammonia (NH₃)

Belgium

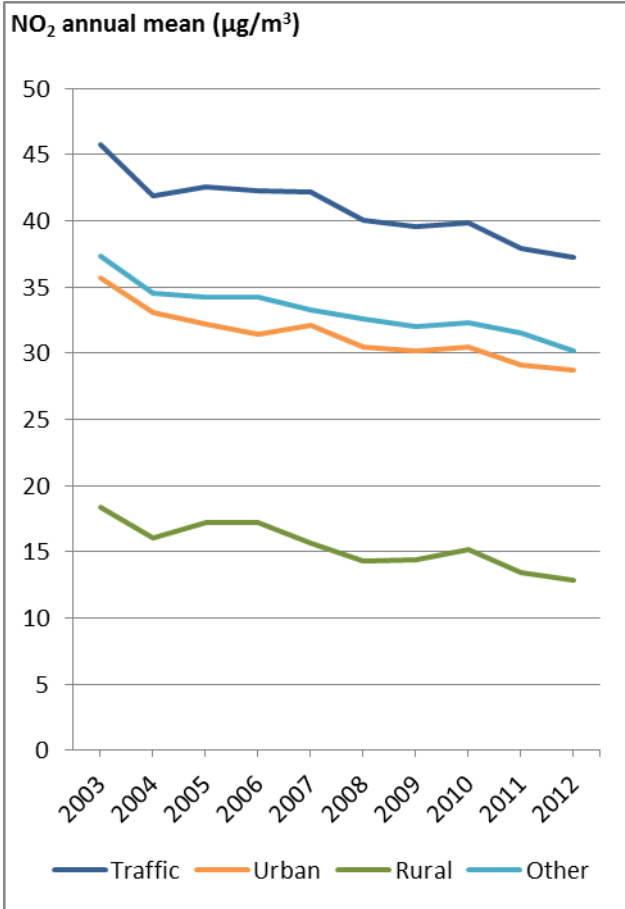


NO₂ concentration trends

EU



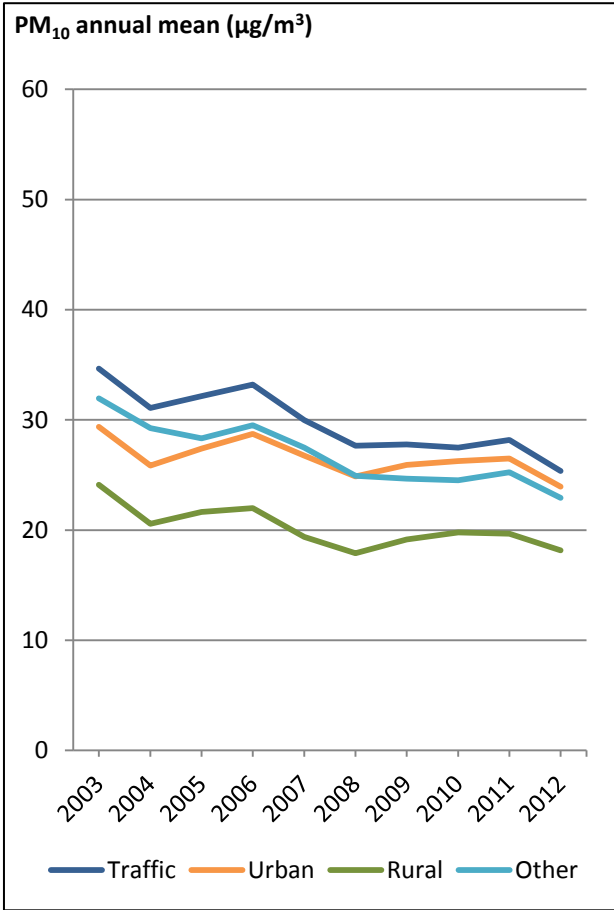
Belgium



Source: EEA

PM10 concentration trends

EU

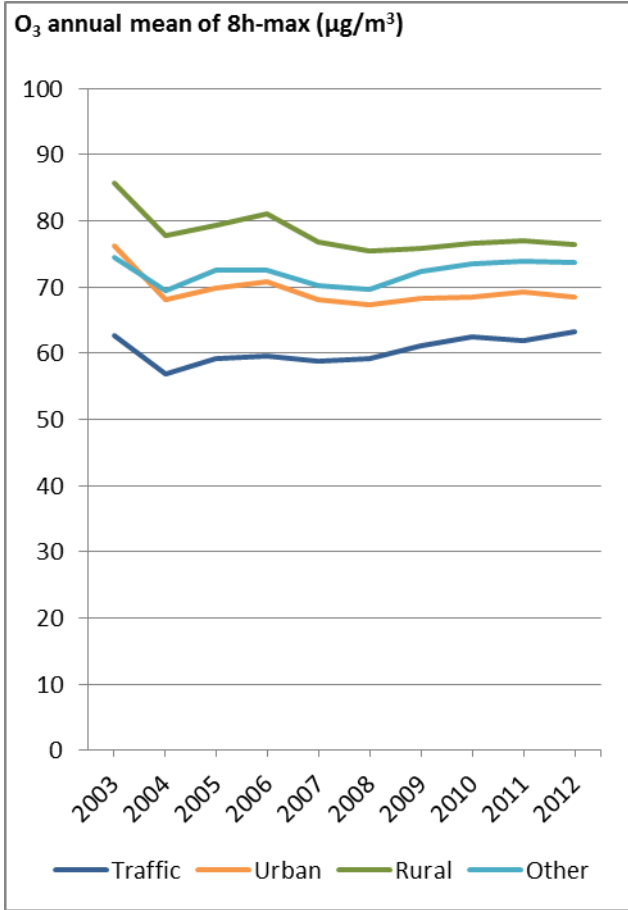


Belgium



O3 concentration trends

EU



Belgium

