Tables and data has been downloaded from AAQD revision https://environment.ec.europa.eu/publications/revision-eu-ambient-air-quality-legislation_en

Ebba Malmqvist

Vårt arbetssätt

- The Air Pollution & Climate Secretariat
- Luftföroreningar på nivåer som inte skadar miljö eller människor
- 1.5 graders målet för skydd av miljö och människor
- Internationella policyprocesser
- 4 miljöorganisationer
- Evidensbaserat
- Funnits sedan 1892

AirClim
Air Pollution & Climate Secretariat

ISEE
International Society for Environmental Epidemiology (ISEE)

Charge of the Europe Chapter

To support the translation of research into timely and effective environmental health policy across Europe as well as provide a forum for research networking and training in the European region.

All ISEE members are welcome to join us!

International Society for Environmental Epidemiology (ISEE)

ISEE Europe Chapter

Elected Members

Hanna Boogaard (Co-chair)

Petter Ljungman (Co-chair)

Ebba Malmqvist

Elaine Fuertes

Carla Ancona

Kurt Straif

Ana Vicedo-Cabrera

Zorana Andersen | Artur Bayda | Sierra Clark | Payam Dadvand | Ulrike Gehring | Barbara Hoffmann | Bénédicte Jacquemin | Meltem Kutlar Joss | Rajini Nagrani

ISEE Europe Chapter

Associated members

Adjani Peralta | Annette Peters | Mette Sørensen | Aina Roca-Barcelo | Tamara Schikowski | Alexandra Schneider | Massimo Stafoggia | Mireille Toledano | Michelle Turner | Danielle Vienneau

ISEE
International Society for Environmental Epidemiology (ISEE)

And many more….

Bert Brunekreef | **Francesco Forastiere** | **Bertil Forsberg** | **Gerard Hoek** | **Michal Krzyzanowski** | **Audrey de Nazelle** | **Mark Nieuwenhuijsen**

Miljökvalitetsnormer

I nuvarande direktiv så rapporteras halter från alla mätstationer till EU årligen och överskridanden kräver åtgärdsplaner som ska se till att överskridande hålls så korta som möjligt.

- Mätstationer i Stockholm, SLB, 2022

EU AAQD i relation till WHO AQG

Pollutants*	2005 WHO Guidelines	2021 WHO Guidelines	EU Current Limit values	EU new proposed Limit values*
PM_{10} (year)	20 µg/m³	15 µg/m³	40 µg/m³	20 µg/m³
PM_{10} (day)	50 µg/m³	45 µg/m³	50 µg/m³	45 µg/m³
$PM_{2.5}$ (year)	10 µg/m³	5 µg/m³	25 µg/m³	10 µg/m³
$PM_{2.5}$ (day)	25 µg/m³	15 µg/m³	-	25 µg/m³
NO_2 (year)	40 µg/m³	10 µg/m³	40 µg/m³	20 µg/m³
NO_2 (day)	-	25 µg/m³	50 µg/m³	50 µg/m³
O_3 (8-hour mean)	100 µg/m³	100 µg/m³	120 µg/m³*	120 µg/m³*
O_3 (peak season mean)	-	60 µg/m³	-	-

- ✓ Limit values to be attained by 1 Jan 2030.
- ✓ It allows for deductions of "natural" source contributions to exceedances of limit values or exposure reduction obligations.

* Limit values are set for PM, NO2, SO2, CO, Pb, As, Cd, Ni, and B(a)P. Target values are set for O_3.

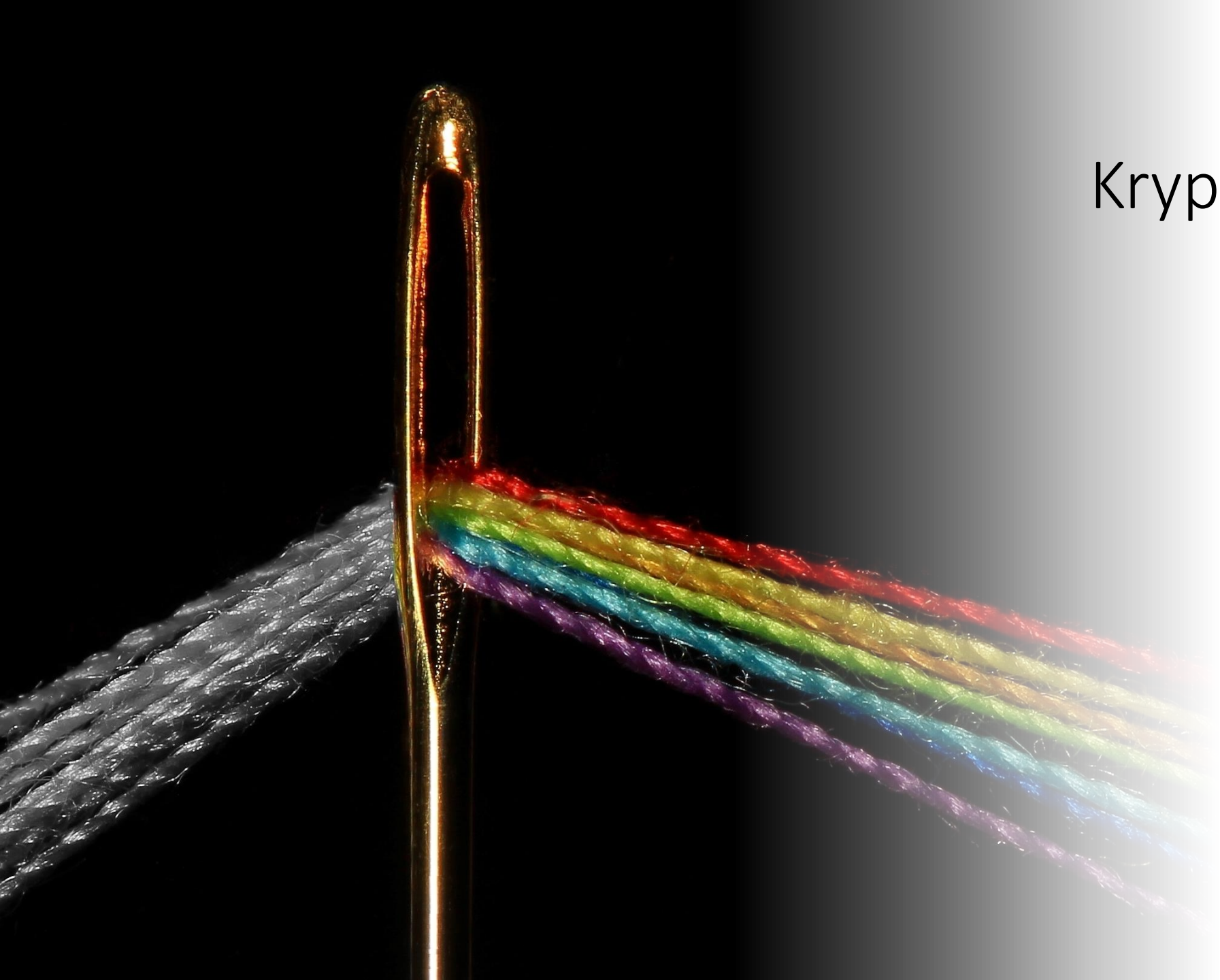
EU standards and compared to WHO AQG

Pollutants*	WHO Guidelines	Exceedances allowed for new proposed Limit values
PM_{10} (day)	≤ 3-4 days / year	≤ 18 days / year
$PM_{2.5}$ (day)	≤ 3-4 days / year	≤ 18 days / year
NO_2 (day)	≤ 3-4 days / year	≤ 18 days / year
O_3 (8-hour mean)	≤ 3-4 days / year	≤ 18 days / year (averaged over 3 years)

*

Övriga föroreningar

	Kalenderår EU AAQD förslag	WHO/US EPA/benchmark
Bensen	3,4 µg/m3	0,17 µg/m3
Bly	0,5 µg/m3	0,05 µg/m3
Arsenik	6,0 ng/m³	0,66 ng/m³
Kadmium	5,0 ng/m³	5,0 ng/m³
Nickel	20 ng/m³	2,5ng/m³
Bens(a)pyren	1,0 ng/m³	0,012 ng/m³



Kryphål

Mätningar/modellering

Hur bra mäter vi? Modellerar

A. Uncertainty of measurements and modelling for ambient air quality assessment

1. Uncertainty for measurement and modelling of long-term mean concentrations (annual mean)

Air pollutant	Maximum uncertainty of fixed measurements		Maximum uncertainty of indicative measurements (1)		Maximum ~~ratio of~~ uncertainty of modelling and objective estimation over uncertainty of fixed measurements
	Absolute value	Relative value	Absolute value	Relative value	Maximum ratio Relative value
$PM_{2.5}$	~~3~~2,5~~0~~ µg/m³	~~30~~25 %	4,0 µg/m³	40 %	20%~~1,74~~
PM_{10}	4,0 µg/m³	20 %	6,0 µg/m³	30 %	20%~~1,3~~
NO_2 / NO_x	~~6~~3,0 µg/m³	~~30~~15 %	~~8~~5,0 µg/m³	~~40~~25 %	30%~~1,4~~
Benzene	0,75 µg/m³	25 %	1,0~~2~~ µg/m³	~~35~~30 %	50%~~1,74~~
Lead	0,125 µg/m³	25 %	0,1~~575~~ µg/m³	~~35~~30 %	50%~~1,74~~
Arsenic	2,4 ng/m³	40 %	3,0 ng/m³	50 %	1,1
Cadmium	2,0 ng/m³	40 %	2,5 ng/m³	50 %	1,1
Nickel	8,0 ng/m³	40 %	10,0 ng/m³	50 %	1,1
Benzo(a)pyrene	0,5 ng/m³	50 %	0,6 ng/m³	60 %	1,1

(1) When using indicative measurements for other purposes other than compliance assessment, such as, but not only: design or review of the monitoring network, model calibration and validation, the uncertainty may be that established for modelling applications.

Vilka mätstationer ska räknas?

Traffic

Traffic/Urban

20m above the streets

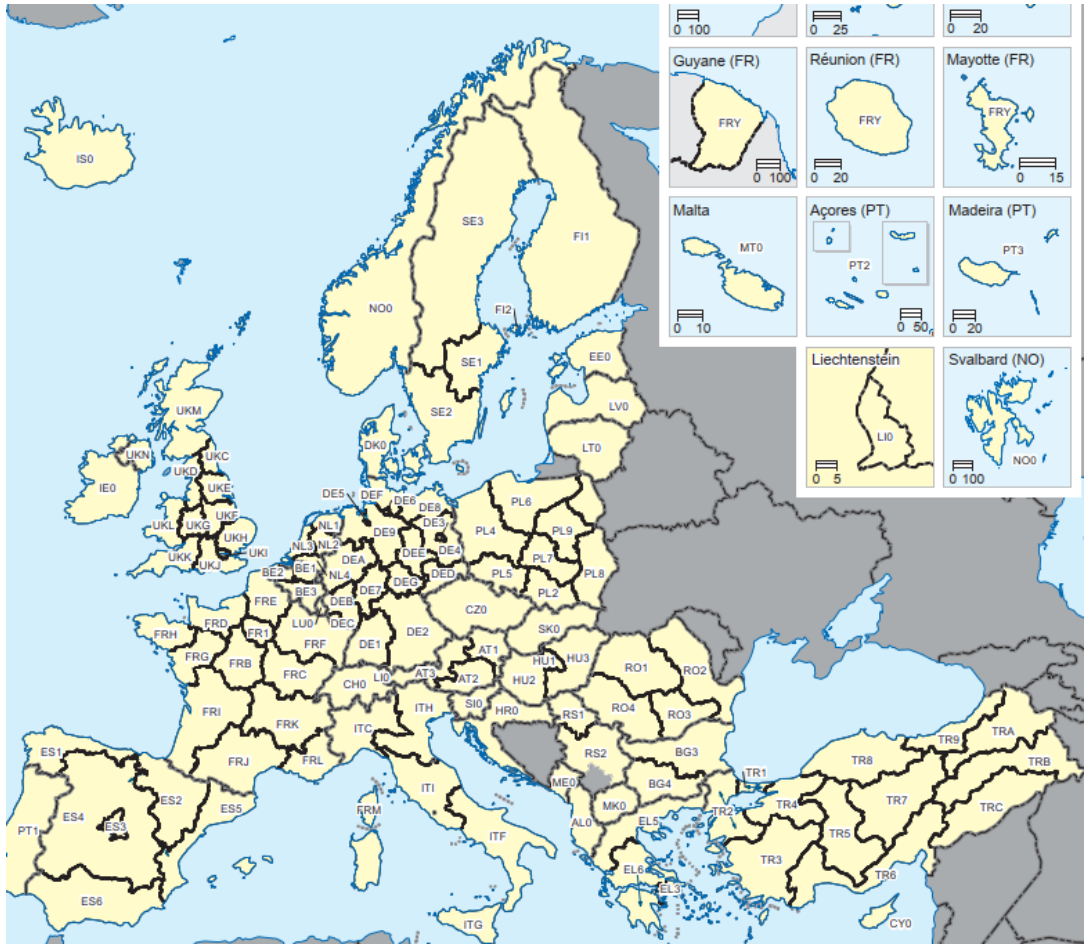
Urban background

Regional background

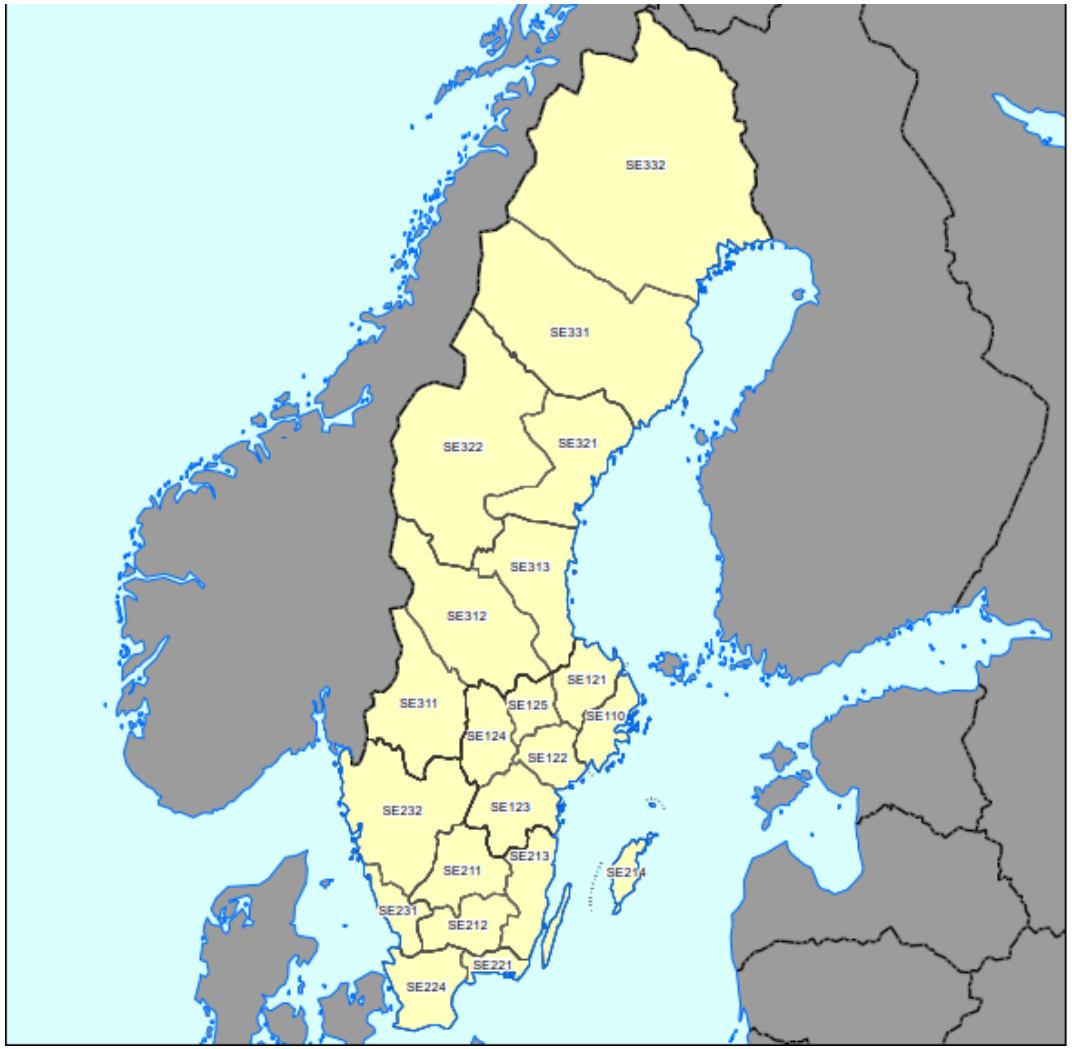
Average Exposure Reduction

- a 3-calendar-year running annual mean urban background concentration averaged over all sampling points at regional (NUTS 1) level, and natural sources are deductible.
- The AEI should not exceed a level that is 25% lower than its value 10 years previously, until WHO Air Quality Guidelines are reached (5 µg/m3 for PM2.5 and 10 µg/m3 for NO2).

NUTS 1


Guyane (FR)
Réunion (FR)
Mayotte (FR)
Malta
Açores (PT)
Madeira (PT)
Liechtenstein
Svalbard (NO)

NUTS 3


SE332
SE331
SE322
SE321
SE313
SE312
SE311
SE121
SE125
SE110
SE124
SE122
SE232
SE123
SE213
SE211
SE214
SE231
SE212
SE221
SE224

Lokala miljöorättvisor

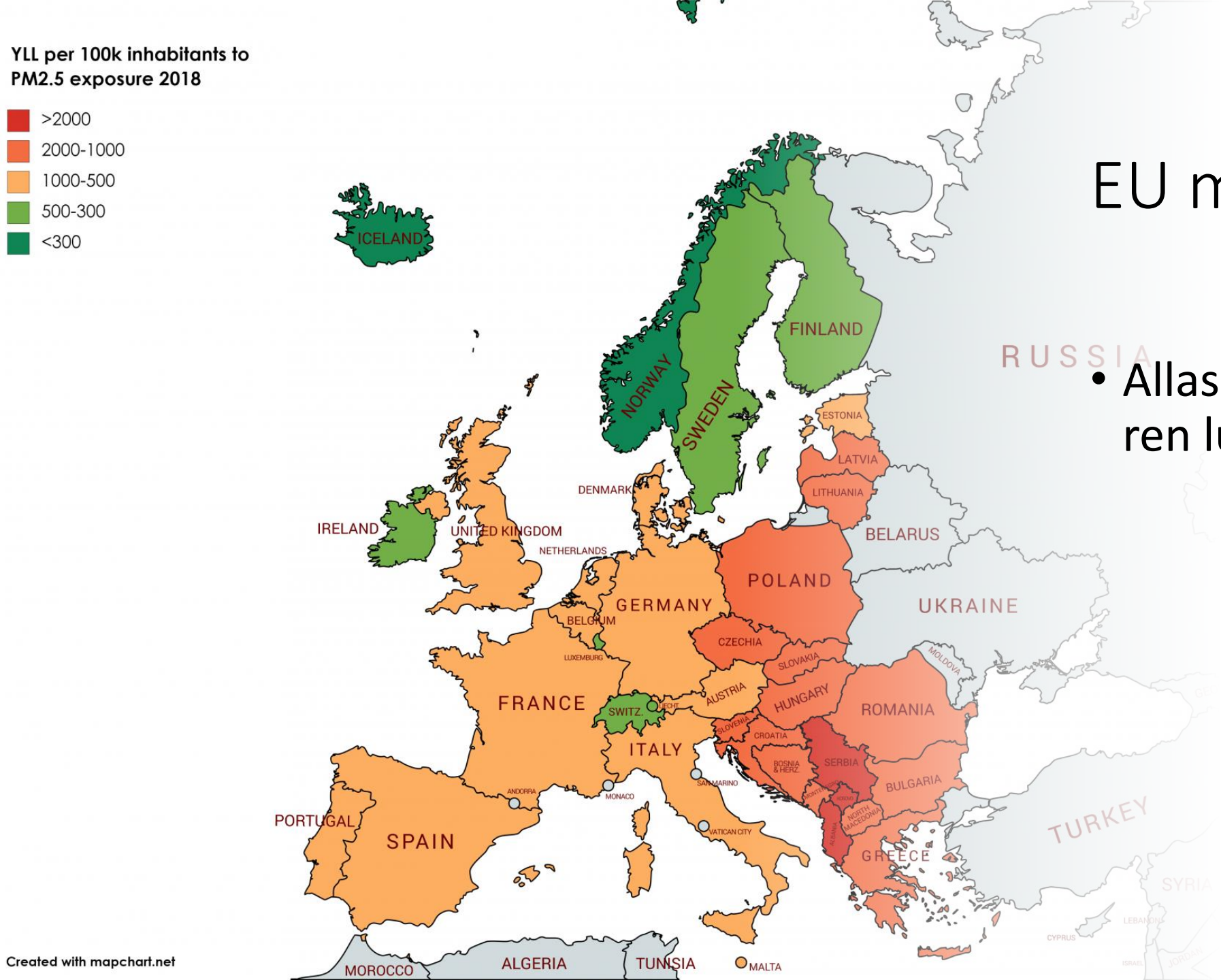
- I vissa städer såsom Malmö finns en miljöorättvisa i vilka som är högexponerade
- Vissa områden i miljonprogramsområde n längs ringleder är inte med I mätprogram I samma utsträckning som innerstäder

Exempel i Sverige

- En studie visade att:
- Gravida kvinnor som fötts utanför EU hade en 3-4 stor risk att bo i områden med halter över miljömålen än svensk-födda kvinnor.
- Kvinnor med låg inkomst hade en 2-3 gånger så stor risk att bo i områden med halter över miljömålen än kvinnor som var höginkomsttagare.
- Vi vet att dålig luft vid graviditet spelar roll resten av livet.
- Flanagan et al. 2019

EU miljöorättvisa

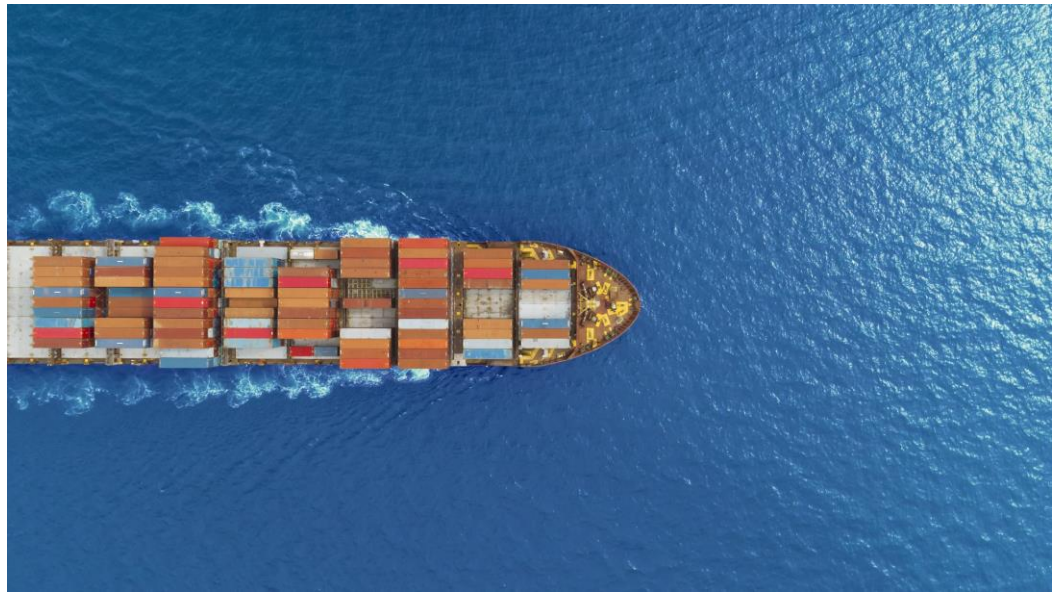
- Allas samma rätt till ren luft



Rätt till information och rättsligt skydd

- Svårare att ha en klar ansvarig
- Komplicerat att förstå

Nya områden med högst halter

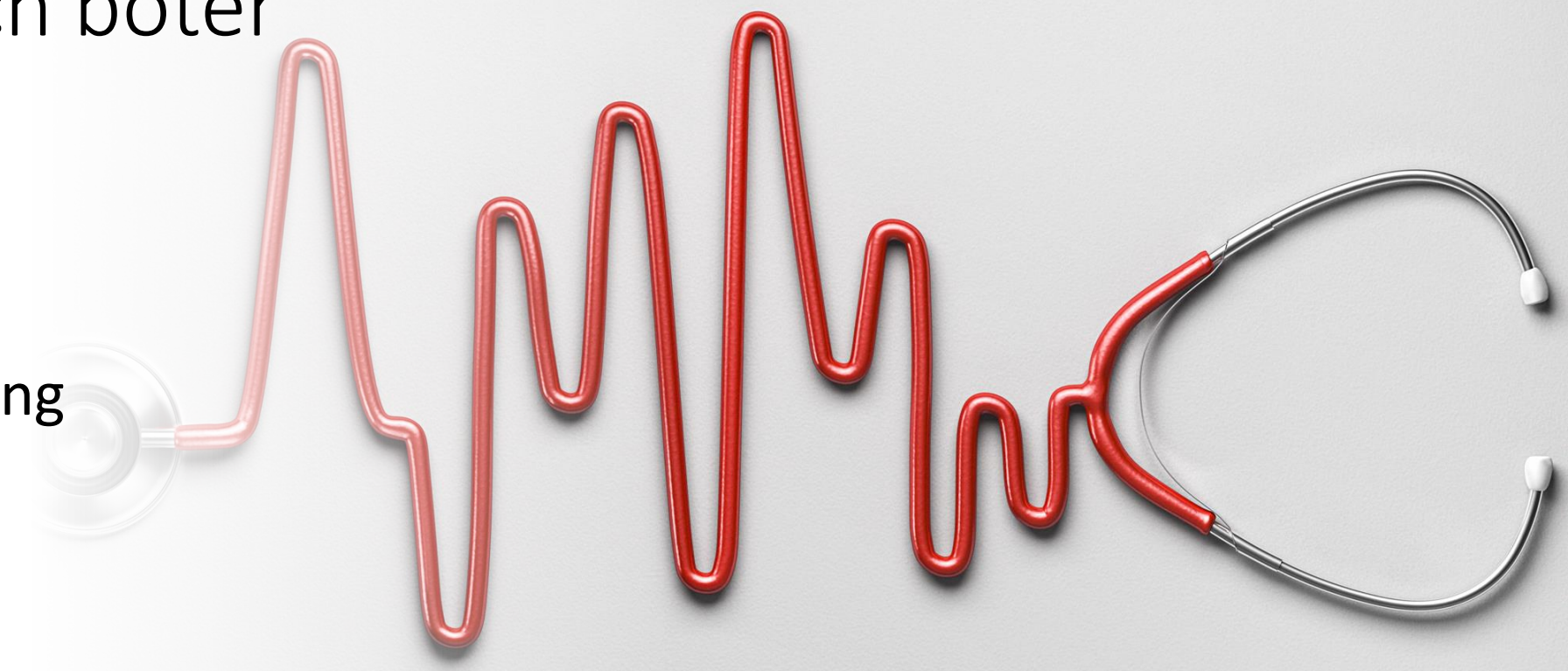


Supersites

Emerging pollutants

Rätt till information, sanktioner och böter

- Luftkvalitetsindex
- Information och varning
- Sanktion
- Kompensation



Ella

Artikel 28
Ersättning för skador på människors hälsa

4. Om ett ersättningsanspråk stöds av bevis som visar att den överträdelse som avses i punkt 1 är den mest sannolika förklaringen till att den personen lidit skada, ska orsakssambandet mellan överträdelsen och uppkomsten av skadan presumeras.

4. Om ett ersättningsanspråk stöds av bevis som visar att den överträdelse som avses i punkt 1 med **övervägande sannolikhet** är en bidragande förklaring till att personen lidit skada, ska orsakssambandet mellan överträdelsen och uppkomsten av skadan presumeras.

MB Kap 32 tidigare miljöskadelagen

What air quality can or want we? Feasibility

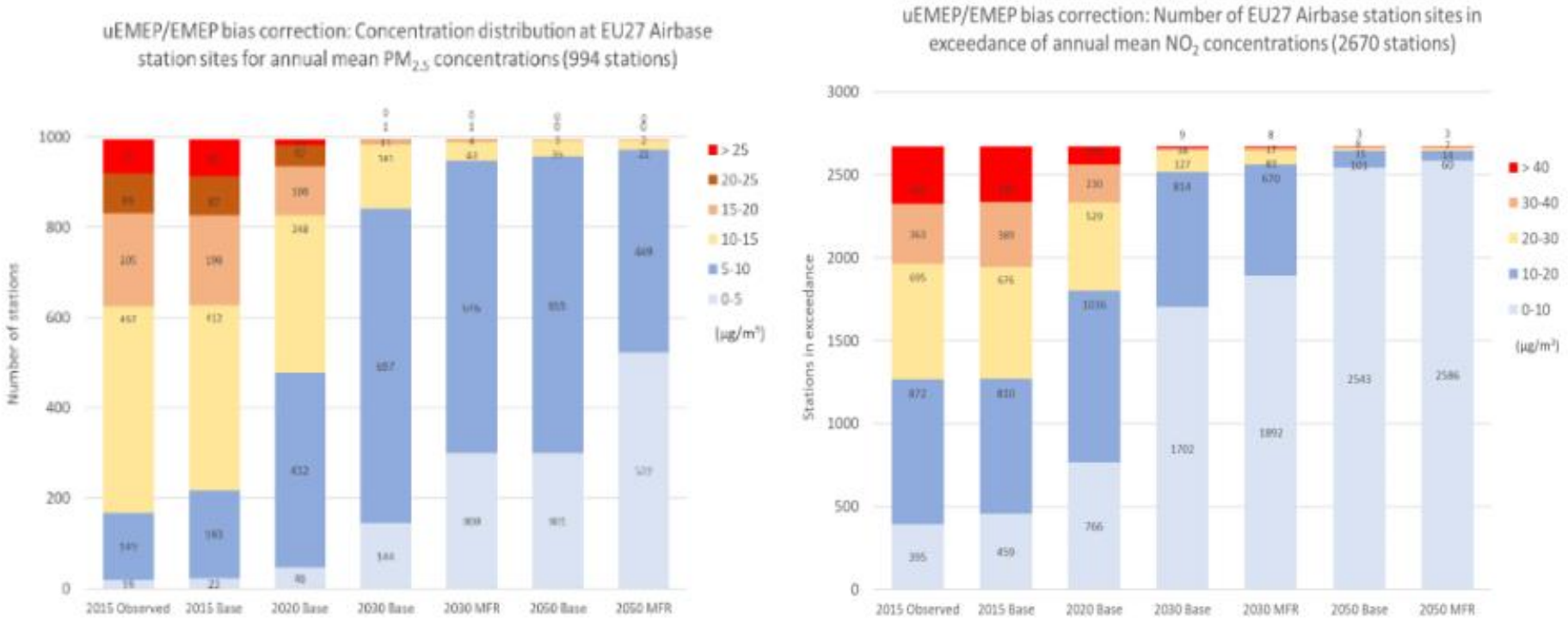
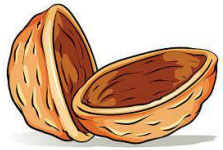


Figure 5 – $PM_{2.5}$ (left) and NO_2 (right) concentration modelling outputs for EU under baseline assumption.[48]

The proposed AAQD in a Scenarios analyzed in impact assessment



Scenario*:	Full alignment (I-1)	Closer alignment (I-2)	Partial alignment (I-3)
$PM_{2.5}$ annual Limit Value	5 µg/m³	10 µg/m³	15 µg/m³
NO_2 annual Limit Value	10 µg/m³	20 µg/m³	30 µg/m³
Benefit / cost ratio	6:1 - 18:1	7.5:1 - 21:1	10:1 - 28:1
Estimated mitigation costs in 2030 (billion EUR) compared to baseline costs	7	5.7	3.3
% sampling sites expected to exceed Limit Value in 2030	71%	6%	0%
% sampling sites expected to exceed Limit Values in 2030 in baseline scenario	85%	15%	1.2%

*alignment with the 2021 WHO AQG by 2030, all relative to the baseline scenario.
Baseline scenario includes existing and policies proposed.

'We breathe in poison': Why the Po Valley is one of the most polluted places in Italy

- 45% Småskalig uppvärmning
- 25% Trafik

65 bilar per 100 invånare (2019)
mot 36/100 i Paris

- 30% Industri och jordbruk

Stor exportör av griskött till Kina

- Topografi
- Invånarna förlorar i genomsnitt 6 månader i livslängd
- Lite action ännu mindre efter Cv19

Pictured from space, smog hangs over the Po Valley in northern Italy. Photo: NASA/AFP

ISEE and ERS commentary on proposed AAQD

Commentary

ISEE ENVIRONMENTAL EPIDEMIOLOGY

OPEN

Clean air in Europe for all

A call for more ambitious action

Hanna Boogaard[a,*], Zorana Jovanovic Andersen[b], Bert Brunekreef[c], Francesco Forastiere[d], Bertil Forsberg[e], Gerard Hoek[c], Michal Krzyzanowski[d], Ebba Malmqvist[f], Mark Nieuwenhuijsen[g], Barbara Hoffmann[h], on behalf of ERS and ISEE

- A clear path toward complete alignment with the 2021 WHO AQG is missing
- Limit values are needed for ozone
- Adverse health effects of air pollution are underestimated
- Many potential policy options and actions are missing from the feasibility scenario
- More effort needed to decrease inequalities in health burdens from air pollution
- Be wary of the deduction of “natural” source contributions

https://journals.lww.com/environepidem/Fulltext/2023/04000/Clean_air_in_Europe_for_all__A_call_for_more.3.aspx

	Current EU AAQD	EU AAQD proposal	WHO AIR QUALITY GUIDELINES	
Pollutants	LIMIT VALUES ($\mu g/m^3$)		Pollutants	HEALTH BASED ($\mu g/m^3$)
$PM_{2.5}$ annual	25	10	$PM_{2.5}$ annual	5
$PM_{2.5}$ 24 hours[1]	-	25	$PM_{2.5}$ 24 hours[2]	15
PM_{10} annual	40	20	PM_{10} annual	15
PM_{10} 24 hours[3]	50	45	PM_{10} 24 hours[2]	45
NO_2 annual	40	20	NO_2 annual	10
NO_2 24 hours[1]	-	50	NO_2 24 hours[2]	25
SO_2 24 hours[4]	125	50	SO_2 24 hours[2]	40
CO 24 hours[1]	-	4	CO 24 hours[2]	4
	TARGET VALUES ($\mu g/m^3$)			HEALTH BASED ($\mu g/m^3$)
O_3			O_3 Peak season[5]	60
0_3 8-hours[6]	120	120	0_3 8-hours[2]	100

[1] not to be exceeded more than 18 times per calendar year

[2] a 99th percentile (i.e., 3–4 exceedance days per year)

[3] not to be exceeded more than 18 times per calendar year in proposal and current AAQD 35 times

[4] not to be exceeded more than 18 times per calendar year in proposal and current AAQD 3 times

[5] Average of daily maximum 8-hour mean O_3 concentration in the six consecutive months with the highest six-month running-average O_3 concentration

[6] The maximum daily 8-hour mean concentration not to be exceeded on more than 18 days per calendar year averaged over 3 years