



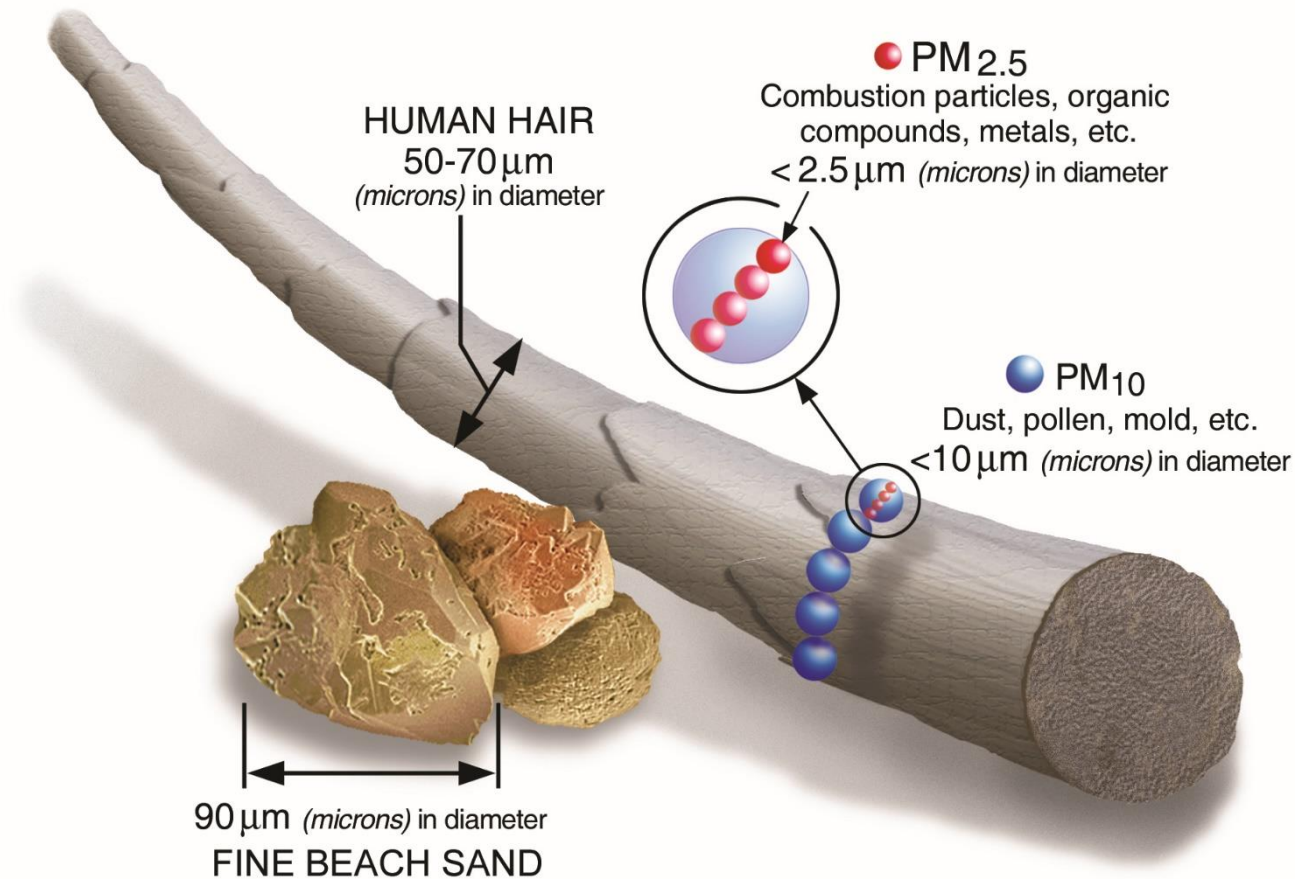
Air Quality – Revision of EU Rules

November 2022

*European Commission
Clean Air & Urban Policy Unit*

Clean Air Policy focuses on key air pollutants

Understanding particulate matter



List of key air pollutants

- Particulate matter (PM_{2.5}, PM₁₀)
- Nitrogen dioxide (NO₂)
- Ozone (O₃)
- Sulphur dioxide (SO₂)
- Carbon monoxide (CO)
- Benzene (C₆H₆)
- Benzo(a)Pyrene (BaP)
- Heavy metals attached to PM (arsenic, cadmium, nickel, lead)
- Volatile organic compounds (VOC)
- Particulate matter precursor pollutants, such as ammonia (NH₃)
- + air pollutants of emerging concern

Why is air pollution a problem?

- **Health impacts:** Air pollution is the number one environmental cause of health impacts in the EU, with estimates of **300 000 premature deaths per year**.
- **Social impacts:** It disproportionately affects **vulnerable groups** - children, elderly, persons with pre-existing conditions, socioeconomically disadvantaged.
- **Economic impacts:** It causes annual costs at **€231-853 billion (bn)** in health impacts, €8 bn in lost workdays, €4-12 bn in ecosystems damage, €10-11 bn in crop yield loss, €19 bn in forest damage, €1 bn in damage to buildings.
- **Environmental impacts:** It causes **eutrophication** (74%) and **acidification** (5%) of ecosystem area exceeding critical loads, + crop and forest damage.
- **and Europeans care about the air they breathe** (Eurobarometer 2022)

EU clean air policy



Ambient Air Quality (AAQ) Directives

Maximum concentrations of
air polluting substances

(PM_{2.5}, PM₁₀, NO₂, O₃, SO₂, CO, C₆H₆, BaP, As, Cd, Ni, Pb)

**SETTING OBJECTIVES
FOR GOOD AIR QUALITY**

**REDUCING EMISSIONS
OF POLLUTANTS**



National Emission reduction Commitments Directive

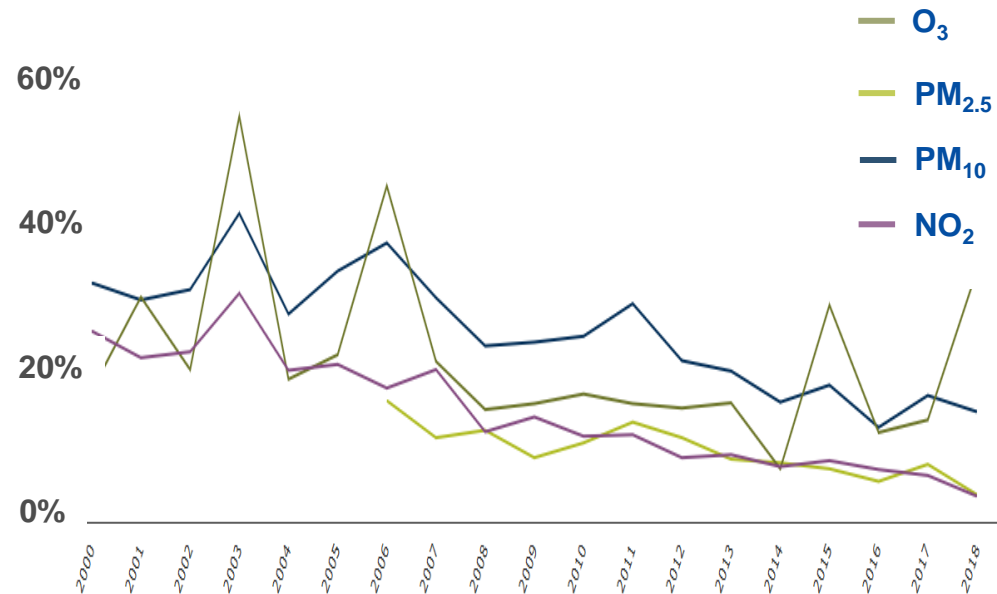
National emission totals
(SO₂, NO_x, NMVOC, PM_{2.5}, NH₃)

Source-specific emission standards

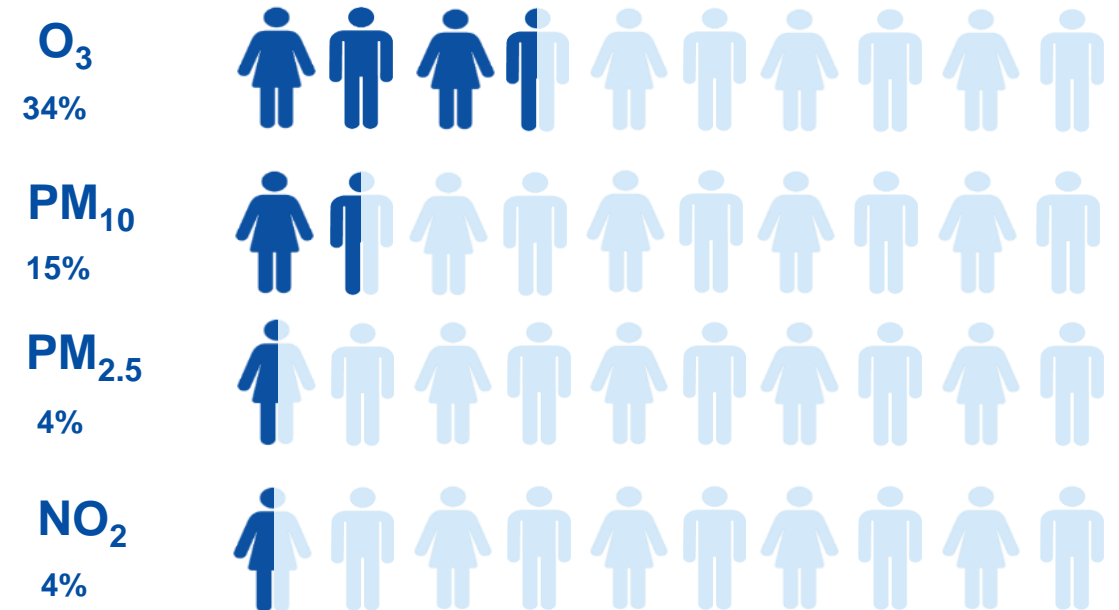
- IE Directive
- MCP Directive
- Eco-design Directive
- Energy efficiency
- Euro and fuel standards

EU clean air policy works ... but ...

EU urban population exposed to air pollution above **EU standards from 2000 to 2018**

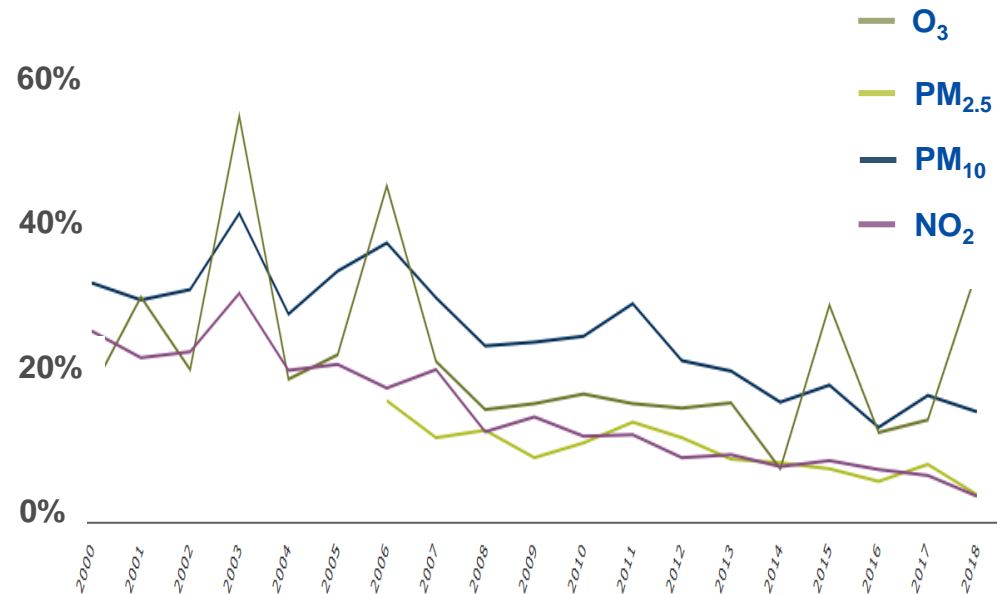


EU urban population exposed to air pollution above **EU standards** in 2018 / 2019

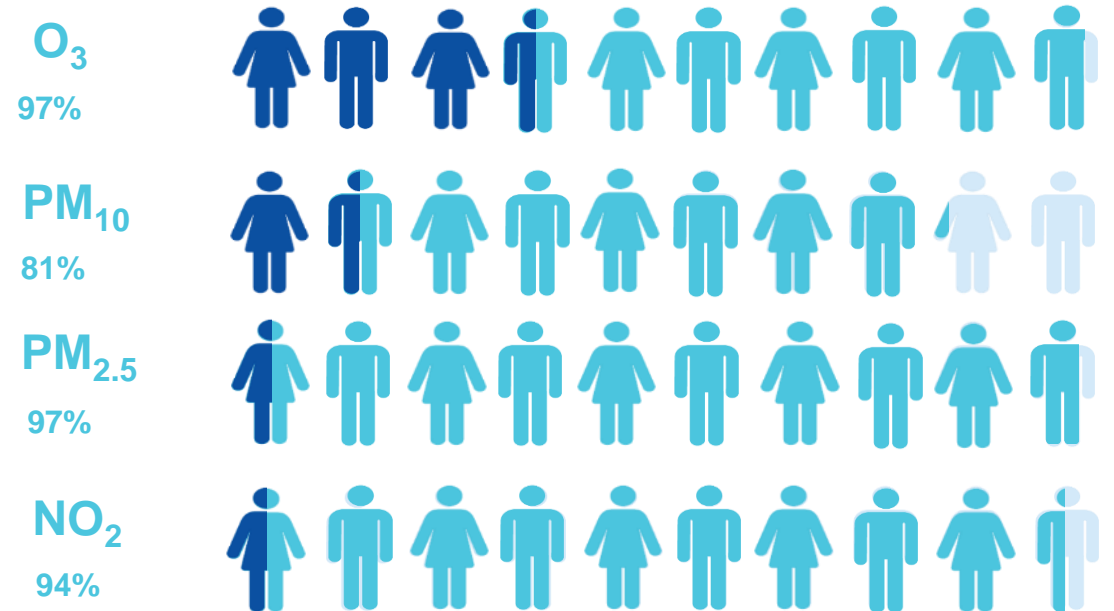


EU clean air policy works ... but ...

EU urban population exposed to air pollution above **EU standards from 2000 to 2018**



EU urban population exposed to air pollution above **WHO (2021) guidelines** in 2018 / 2019



“The Commission will draw on the lessons learnt from the evaluation of the current air quality legislation.

It will also propose to strengthen provisions on monitoring, modelling and air quality plans to help local authorities achieve cleaner air.

The Commission will notably propose to revise air quality standards to align them more closely with the World Health Organization recommendations.”

Communication on the European Green Deal (COM/2019/640 final)

#EUGreenDeal

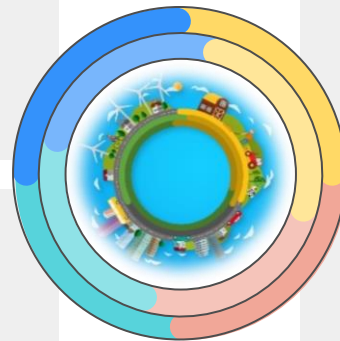
What does our proposal improve?

Environment & health

- **Zero pollution objective** at the latest by 2050
- **Intermediate 2030 EU air quality standards**
- Update of **other air quality metrics**, including more refined average exposure obligations
- **Regular review mechanism**

Governance & enforcement

- Air quality plans to be more effective in **ending and preventing exceedances** of EU standards
- **Improved enforceability**: new provisions on access to justice, compensation and penalties
- More **transboundary cooperation** on air quality



Monitoring & assessment

- Refined approach to **air quality monitoring**, increased use of **air quality modelling**
- Additional information on representativeness of **sampling points**, better inform air quality action
- Monitoring **pollutants of emerging concern** (e.g. ultrafine particles, black carbon, ammonia)

Information & communication

- More **up-to-date air quality information**
- Requirements for **air quality indices** to provide hourly reporting of available air quality data
- **Informing the public** about possible health impacts and provide recommendations

Different policy options (example: for PM_{2.5})

AMBITION LEVEL

-



EU standards today / baseline



Policy option I-3



Policy option I-2



Policy option I-1



WHO – Air Quality guidelines and interim targets for PM (annual mean)

Annual mean level	PM _{2.5} (µg/m ³)	Mortality
Interim target 1	35	+ 24 % above guideline level
Interim target 2	25	+ 16 % above guideline level
Interim target 3	15	+ 8 % above guideline level
Interim target 4	10	+ 4 % above guideline level
AQ guideline level	5	mortality at guideline level



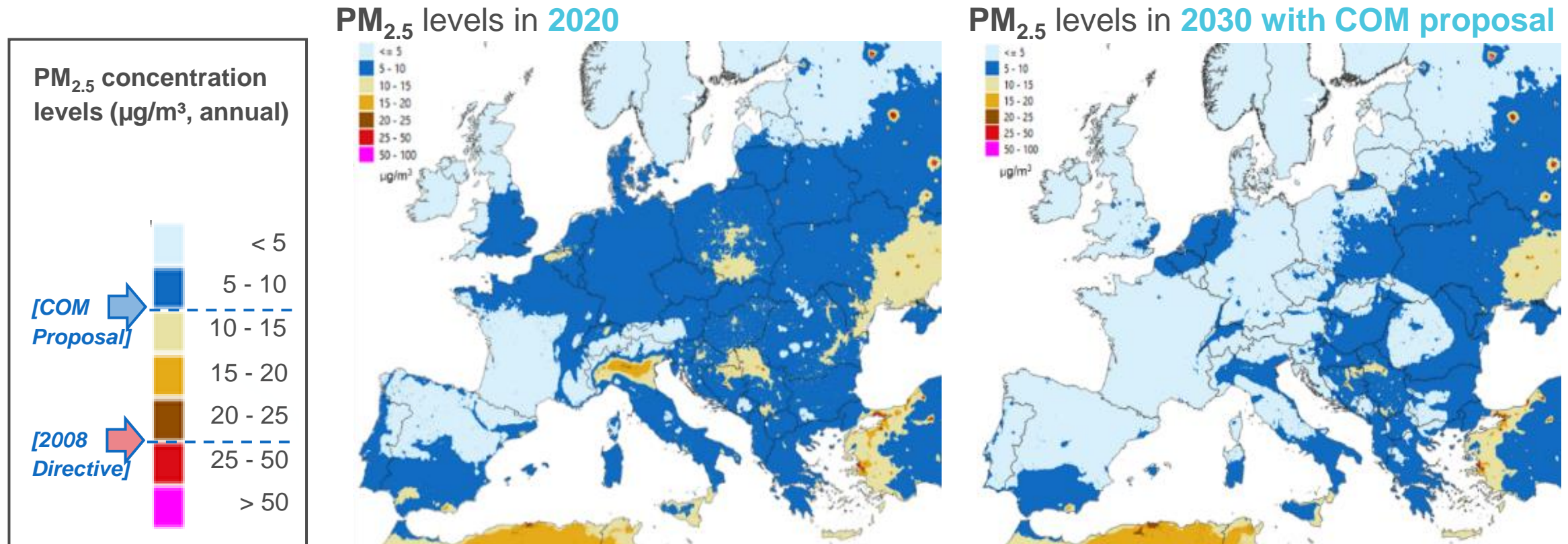
Standards in comparison

	Commission proposal 2022	EU AQ standard	2021 WHO AQ guideline
PM _{2.5} (annual) [µg/m ³]	10	25 / 20	5
PM _{2.5} (24-hour) [µg/m ³]	(18 days) 25	-	(1%) 15
PM ₁₀ (annual) [µg/m ³]	20	40	15
PM ₁₀ (24-hour) [µg/m ³]	(18 days) 45	(35 days) 50	(1%) 45
NO ₂ (annual) [µg/m ³]	20	40	10
NO ₂ (hourly) [µg/m ³]	(1 hour) 200	(18 hours) 200	200
O ₃ (8-hour mean) [µg/m ³]	(18 days) 120	(25 days) 120	(1%) 100

Note: For daily air quality standards reference is made in parentheses to allowed exceedances expressed as number of days or percentiles. For a full year of measurements, 1% translates into the standard not to be exceeded on more than 3 days.

What will the proposal achieve? – Cleaner Air

- First and foremost, the air quality will improve across the European Union.



Based on GAINS/EMEP/uEMEP. Note that these maps show the total concentration levels, and include also contributions from natural sources of wind blown dust and sea salt.

What will the proposal achieve? – By 2030

- **Health benefits:** Reduces **annual mortality** (premature deaths) linked to air pollution by more than 75% (and by 50% more than without this policy)⁽¹⁾ – also reduces **related morbidity** (illnesses) by 50% more than without this policy.
- **Social benefits:** Stricter limit values particularly protect sensitive populations and vulnerable groups; Directive requires additional health impact information.
- **Economic benefits:** Benefits far outweigh the costs, with annual total gross **benefits estimated at €42 bn** (and up to €121 bn depending on the valuation method) in 2030, compared to measures that costs less than €6 bn annually.
- **Environmental benefits:** Decreases in **eutrophication (-22%)** and **acidification (-63%)** of ecosystems; less crop losses and damage to forests.



⁽¹⁾ Note that these estimates refer only to health impacts above the WHO Air Quality Guideline levels. However, air pollution below these levels can also impact human health.

Contact us:

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Have your say:

<https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12677-Revision-of-EU-Ambient-Air-Quality-legislation>

Thank you

