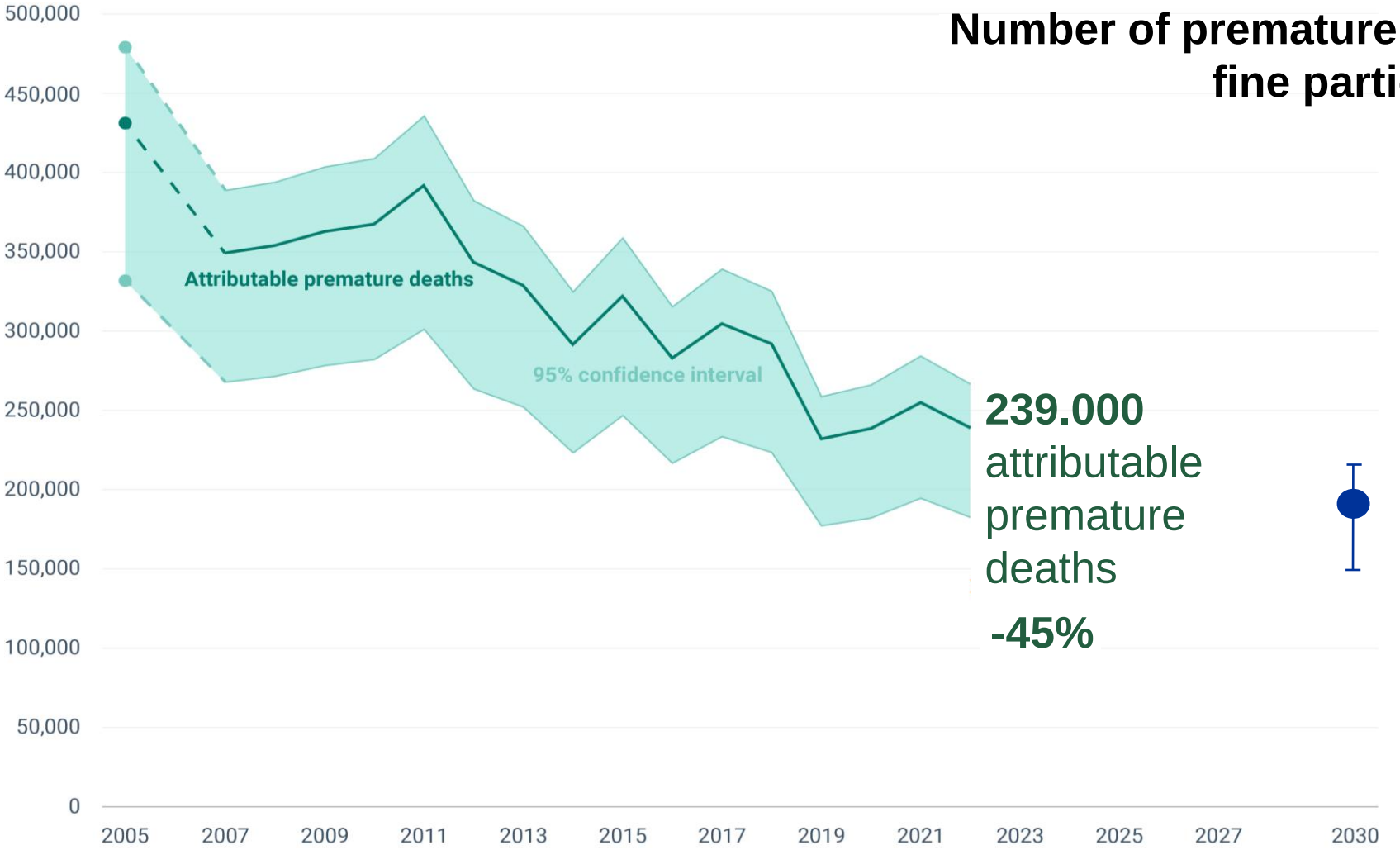
The revised Ambient Air Quality Directive – focus on additional pollutants

8 September 2025

Clean Air & Urban Policy Unit

European Commission

Does EU clean air policy work?



Number of premature deaths attributed to fine particulate matter ($PM_{2.5}$)

239.000 attributable premature deaths

-45%

2030 Zero Pollution Action Plan target:

-55%

https://www.eea.europa.eu/en/analysis/indicators/health-impacts-of-exposure-to

Does EU clean air policy work?

What's new in the AAQD recast

Environment & health

- **Zero pollution objective** at the latest by 2050
- Intermediate **2030 EU air quality standards**
- **Postponement** of deadlines possible (climate and orographic, domestic heating, projections)
- New metrics & **average exposure obligations**

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)

Governance & enforcement

- **Regular review mechanism**
- Air quality plans to be **more effective**
- **Improved enforceability**: new provisions on access to justice, compensation and penalties
- More **transboundary cooperation** on air quality

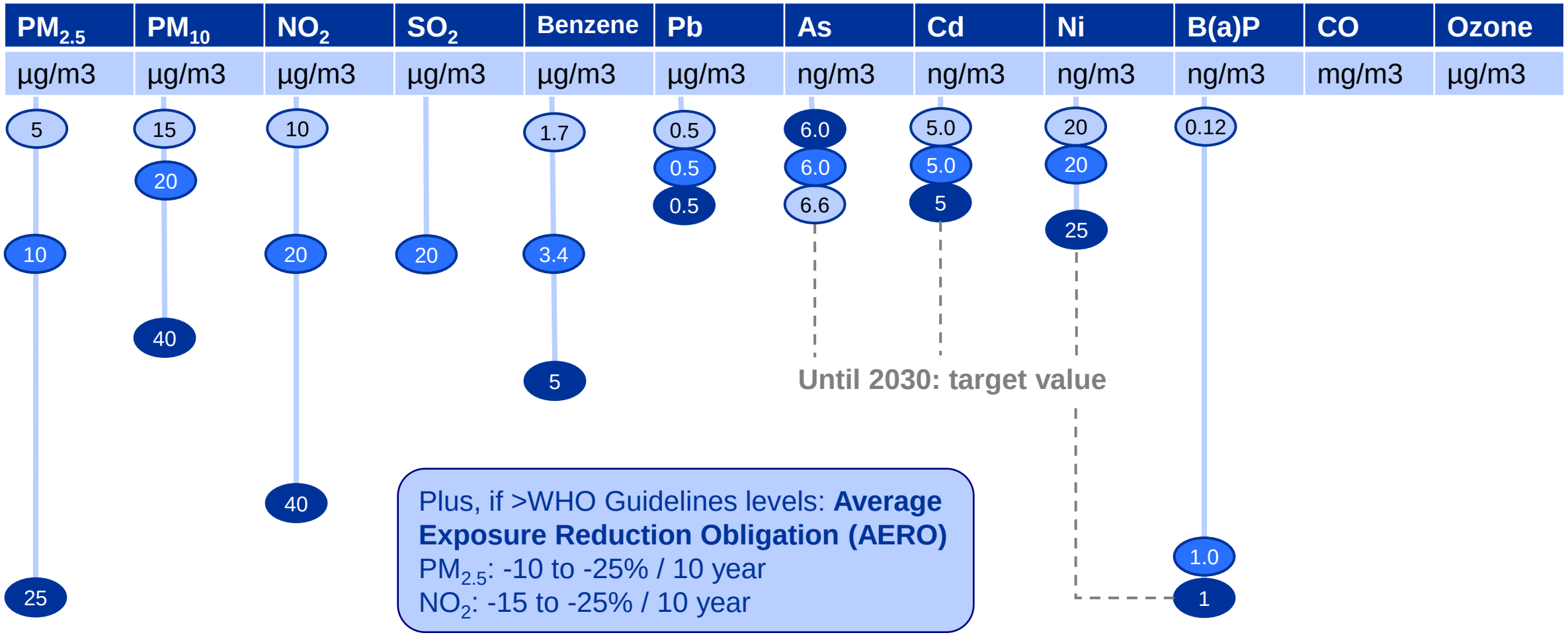
Information & communication

- 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

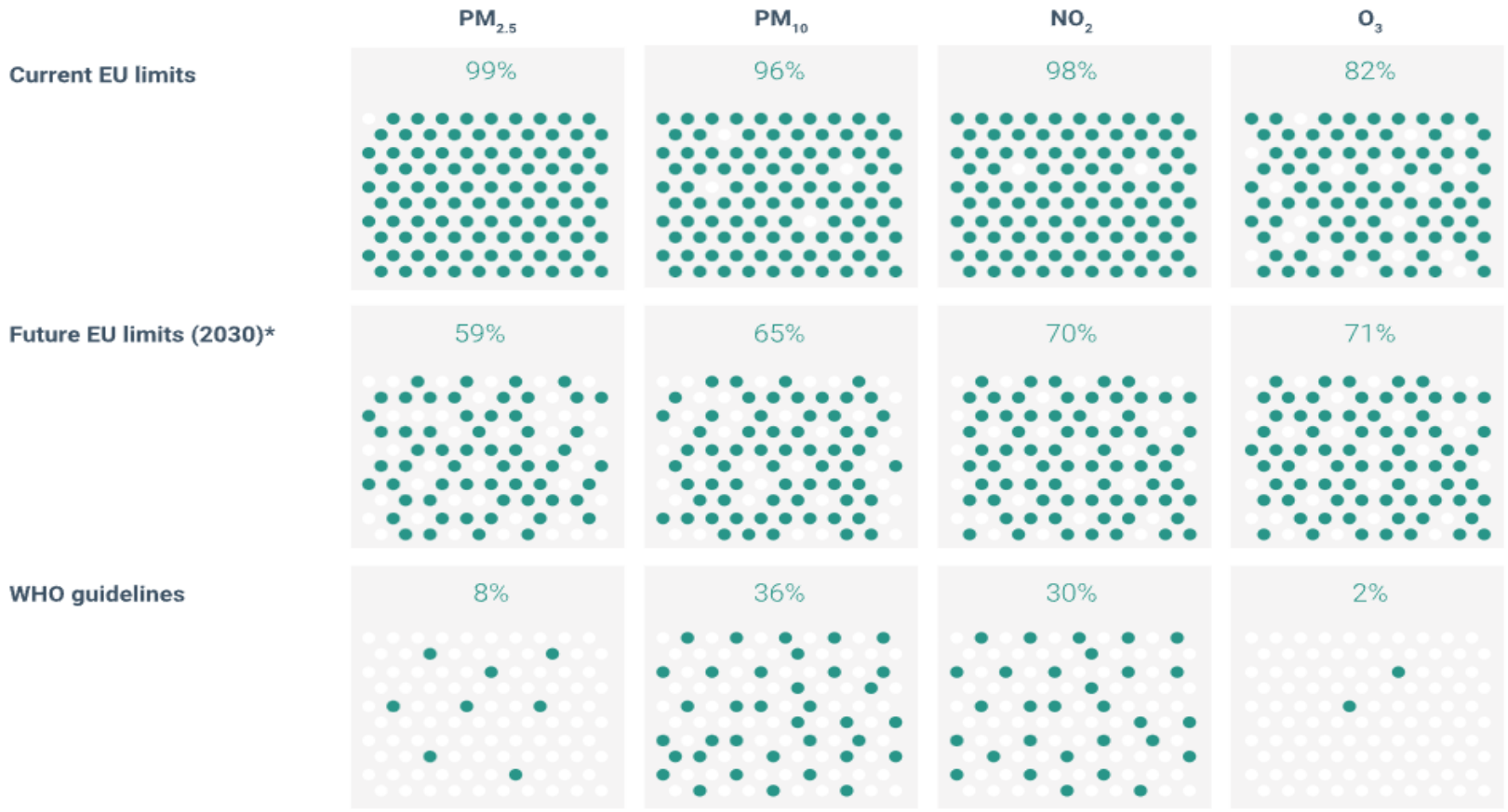
Directive (EU) 2024/2881 in a nutshell

Chapter	Articles	Content
I	1-6	**General Provisions** including objectives, subject matter, regular review, definitions, responsibilities, and establishment of zones and average exposure territorial unit
II	7-11	**Assessment of Ambient Air Quality and Deposition Rates** including assessment regime, assessment criteria, sampling points, monitoring supersites, and provisions on reference measurement methods, modelling applications, and data quality objectives
III	12-18	**Ambient Air Quality Management** including limit values, target values and average exposure reduction obligations, exceedances of alert or information thresholds, contributions from NS and WSS, and postponement of attainment deadline and exemption from certain limit values
IV	19-21	**Plans** including air quality plans and air quality roadmaps, short-term action plans, and transboundary air pollution
V	22-23	**Information and reporting** including public information and provisions related to the transmission of information and reporting
VI	24-26	**Delegated and Implementing Acts** including provisions for amendments to Annexes, exercise of the delegation, and the Committee procedure
VII	27-29	Enforcement through **Access to Justice, Compensation and Penalties** including specific provisions related to access to justice, compensation for damage to human health, and penalties
VIII	30-33	**Transitional and Final Provisions** including Transposition, Repeal, Entry into force and application, and Addressees
Annexes I-X		

Air quality standards (annual)



Percentage of stations in 2023 with annual concentrations below applicable EU and WHO standards



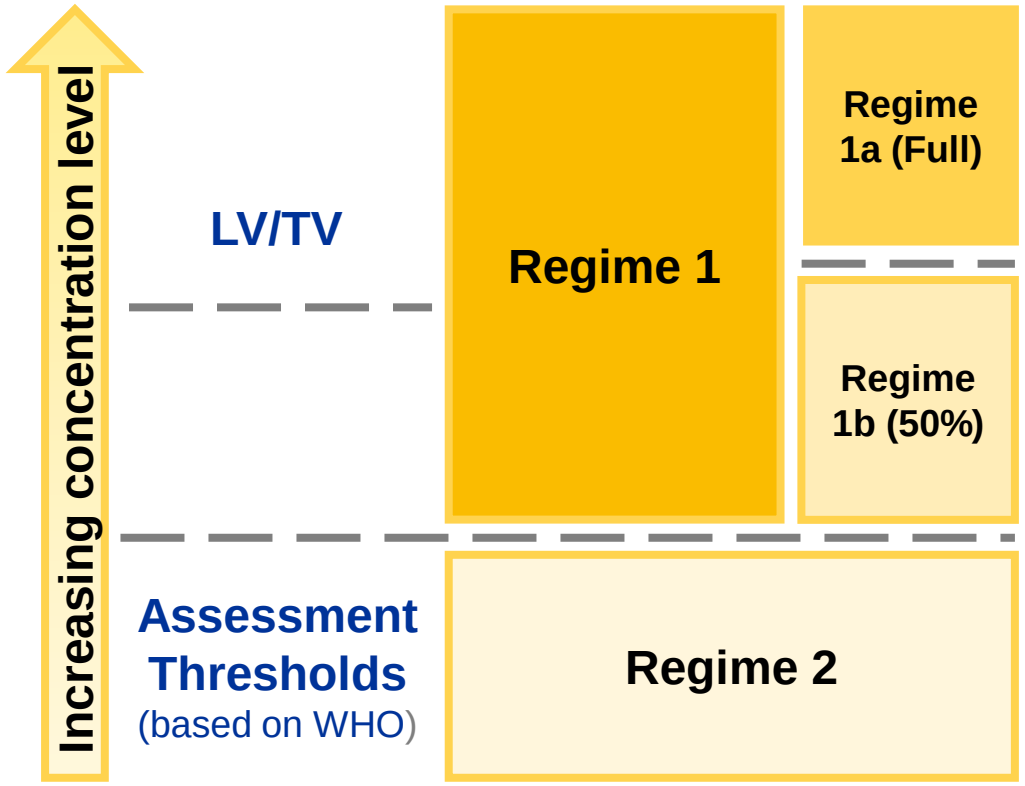
*The 2030 limit values are presented for comparative purposes only to show the distance to target to achieve these limits by 2030.

See: [Air quality status report 2025 | European Environment Agency's home page]

Air Quality Assessment

Assessment regimes & criteria

Refined **monitoring and assessment regimes**, with stronger role for modelling and additional requirements to assure monitoring continuity and spatial representativeness.



Regime 1a - *fixed sampling points shall be used; may be supplemented by indicative measurements/modelling to assess air quality. From 2 yrs after adoption of IA modelling: indicative or modelling shall be used. Modelling at least every 5 yrs.*

Regime 1b - *fixed sampling points shall be used; but can be reduced by up to 50% under conditions (i.e. if there is sufficient modelling and/or indicative measurements, same number of indicative as fixed replaced).*

Regime 2 - *modelling applications, indicative measurements, objective-estimation techniques or a combination shall be sufficient for assessment of AQ.*

Air Quality Assessment

Monitoring of UFPs in the AAQD

- In its latest Air Quality Guidelines (from 2021), the World Health Organization (WHO) has recommended further research on the health impacts of ultrafine particles but has not proposed specific guideline values - also due to a lack of sufficient measurement data.
- Important to measure at both rural and urban relevant locations to **enhance and consolidate scientific understanding** of their effects on human health and the environment.
- Monitoring of UFPs:
  - at least one sampling point per 5 million inhabitants will have to be established at a location where high concentrations are likely to occur (Art 9.8) – e.g. influenced by sources from air, water or road transport (such as airports, ports, roads), industrial sites or domestic heating (Annex VII)
  - requirement to measure at monitoring supersites at both urban and background locations
- *also relevant:* where the objective is to assess the contributions of industrial sources, ports or airports, at least one sampling point shall be installed downwind from the main source within the relevant predominant wind direction in the nearest residential area (Annex IV. B.2(h)).
- Black carbon *may* me measured at same locations.

Air Quality Assessment

Measurements at monitoring supersites

ANNEX VII

MEASUREMENTS *AT MONITORING SUPERSITES AND* OF MASS CONCENTRATION, CHEMICAL COMPOSITION OF $PM_{2.5}$, OZONE PRECURSOR SUBSTANCES AND ULTRAFINE PARTICLES

SECTION 1 – MEASUREMENTS OF POLLUTANTS AT MONITORING SUPERSITES

Measurements at all monitoring supersites at urban background locations and rural background locations shall include the pollutants listed in Tables 1 and 2 respectively.

Table 1 - Pollutants to be measured at monitoring supersites at urban background locations

Pollutant	*Type of measurement*
PM_{10}, $PM_{2.5}$, UFP, BC	*Fixed measurements*
NO_2, O_3	*Fixed measurements*
SO_2, CO	*Fixed or indicative measurements*
Size distribution of UFP	*Fixed or indicative measurements*
Benzo(a)pyrene, other polycyclic aromatic hydrocarbons (PAH) as relevant [1]	*Fixed or indicative measurements*
Total deposition [2] of benzo(a)pyrene, and other polycyclic aromatic hydrocarbons (PAH) as relevant	*Fixed or indicative measurements*
Arsenic, cadmium, lead, and nickel	*Fixed or indicative measurements*
Total deposition [2] of arsenic, cadmium, lead, nickel and mercury	*Fixed or indicative measurements*
Benzene	*Fixed or indicative measurements*
Chemical composition of $PM_{2.5}$ in accordance with Section 1 of Annex VII	*Fixed or indicative measurements*

[1] *Benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 9(8).*

[2] *Where the siting of a monitoring supersite at an urban background location does not allow for the guidelines and criteria of EMEP to apply in accordance with Point C, point (f), of Annex IV, the corresponding deposition measurement may be performed at a separate urban background location within the area of representativeness.*

Table 2 - Pollutants to be measured at monitoring supersites at rural background locations

Pollutant	*Type of measurement*
PM_{10}, $PM_{2.5}$, UFP, BC	*Fixed measurements*
NO_2, O_3 and ammonia (NH_3)	*Fixed measurements*
SO_2, CO	*Fixed or indicative measurements*
Total deposition of benzo(a)pyrene and other polycyclic aromatic hydrocarbons (PAH) as relevant	*Fixed or indicative measurements*
Total deposition of arsenic, cadmium, lead, nickel and mercury	*Fixed or indicative measurements*
Benzo(a)pyrene, other polycyclic aromatic hydrocarbons (PAH) as relevant [1]	*Fixed or indicative measurements*
Arsenic, cadmium, lead, and nickel	*Fixed or indicative measurements*
Chemical composition of $PM_{2.5}$ in accordance with Section 1 of Annex VII	*Fixed or indicative measurements*
Total gaseous mercury	*Fixed or indicative measurements*

[1] *Benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 9(8).*

Table 3 - Pollutants recommended to be measured at monitoring supersites at urban background locations and rural background locations if not covered by the requirements of Tables 1 and 2

Pollutant	*Type of measurement*
Size distribution of UFP	*Fixed or indicative measurements*
Particulate matter oxidative potential	*Fixed or indicative measurements*
Ammonia (NH_3)	*Fixed or indicative measurements*
Levoglucosan to be measured as part of the chemical composition of PM2,5	*Fixed or indicative measurements*
Total gaseous mercury	*Fixed or indicative measurements*
Particulate and gaseous divalent mercury	*Fixed or indicative measurements*
Nitric acid	*Fixed or indicative measurements*

Air Quality Assessment

Measurements at monitoring supersites

- Urban background locations: at least 1 per 10 mil. Inhabitants.
- Rural background locations:
  - at least 1 if territory > 10 000 km² and < 100 000 km²
  - If territory > 100 000 km², at least 1 every 100 000 km²
- Joint supersites possible across different MS
- These can be taken into account for the minimum number of SPOs (not the case for meeting minimum number of SPOs for UFPs if MS > 2Mill – annex III.D) .
- Exceptions for measuring BC, UFPs, NH_3: *A Member State may choose not to measure black carbon, ultrafine particles or ammonia in half of its rural background monitoring supersites if the number of its rural background monitoring supersites exceeds the number of its urban background monitoring supersites by at least a ratio of 2:1, as long as the selection of sites is representative for the three pollutants.*

Implementing Directive (EU) 2024/2881

Entry into force:
12 Dec 2024

Technical support documents:
(a) monitoring
(b) modelling

4th Clean Air Outlook

2026 is the first year that is **relevant for AQ roadmaps**

Technical support documents:
(a) natural sources
(b) winter sanding / salting

Implementing Act (Art 8)

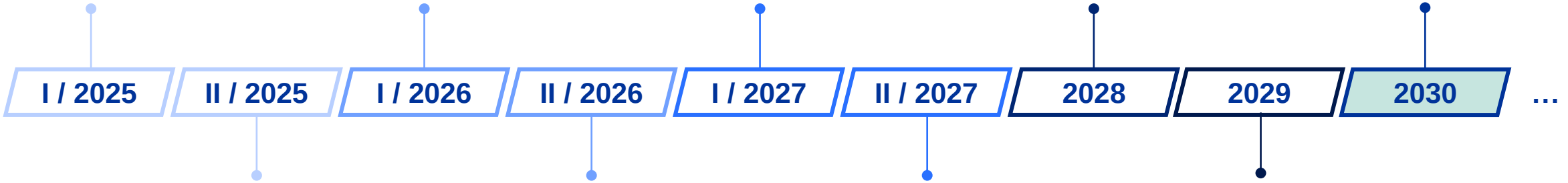
2027 is the first year for the **revised assessment regime**

5th Clean Air Outlook (tbc)

First AQ roadmaps
need to have been established

As of 2030,
Annex 1 Table 1
and **AERO apply**

Review of Directive
(by 31 Dec 2030)



EU Clean Air Forum V

Evaluation of NEC Directive

Other Implementing Acts

First 'preliminary' reporting
using Reportnet 3

Transposition deadline:
11 Dec 2026

EU Clean Air Forum VI

First 'annual' reporting
using Reportnet 3

EU Clean Air Forum VII

6th Clean Air Outlook (tbc)

MS to **notify postponements**
of deadlines (by 31 Jan 2029)

COM to **raise objections**
(or not) within 9 months

Some concluding reflections

EU Clean Air Policy works! We have seen major improvements in air quality since the 1990s.

Air quality monitoring (4.000 monitoring stations) and air quality modelling provide us with an **exceptionally robust, comparable and harmonized information basis** across the EU. This will increase with **new monitoring data** on additional pollutants.

Implementation, governance and communication will be key to bank benefits of EU Clean Air Policy. EU funding available for clean air amounts to €185 bn (2021-2027) .[(1)]

Some regions in the EU face more of a challenge to reach current and future EU air quality standards, but also these regions have seen striking improvements in recent years.

The revised Ambient Air Quality Directive – when implemented – will render **significant health, social, environmental and economic benefits** across the EU.

(1) See: https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/horizontal-priorities/green-budgeting/clean-air-tracking_en

For more info and register click here!

Thank you

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