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AIR QUALITY MANAGEMENT UPDATES FROM EUROPE

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European Green Deal: Commission proposes rules for cleaner air and water



PRESS RELEASE
837/23
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Air quality: Council ready to start talks with Parliament on new rules to strengthen standards in the EU

Today the Council adopted its **negotiating mandate** for talks with the European Parliament on a proposal to set EU air quality standards to be achieved by 2030 and to put the EU on a trajectory closer to its zero-pollution vision for air by 2050. It also seeks to align EU air quality standards more closely with World Health Organization (WHO) guidelines.

The negotiating mandate, which was agreed at Coreper level, sets out the Council's position for the start of negotiations ('trilogues') with the Parliament to shape the final text of the legislation.



Each year, we see around 300 000 premature deaths due to air pollution in Europe. This is unacceptable; we must act now. With today's agreement, we are setting the basis for cleaner air and a healthier environment in the EU, with improved standards and more effective action to tackle air pollution. This is not just a piece of legislation; it is a testament to our dedication to the well-being of our citizens and our responsibility towards the planet.

Teresa Ribera Rodríguez, acting Spanish third vice-president of the government and minister for the ecological transition and the demographic challenge



Air quality : revision of EU Rules

Adopted on 26 October 2022:

- Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on ambient air quality and cleaner air for Europe (recast) - **COM/2022/542 final**
- Commission Staff Working Document Impact Assessment Report - **SWD/2022/545 final** - and the corresponding Executive Summary - **SWD/2022/345 final**

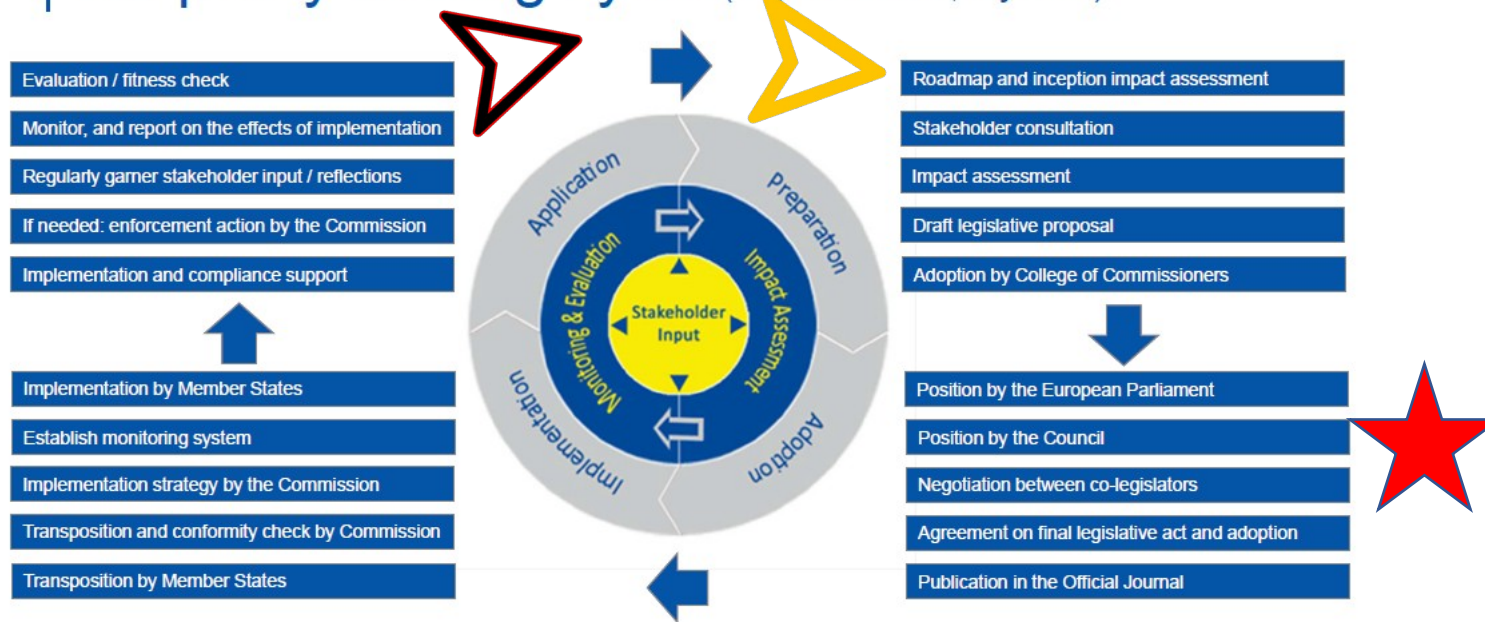
Supported by

- Study to support the impact assessment for a revision of the EU Ambient Air Quality Directives – Final Report & Appendix
- Study on systematic assessment of monitoring of other air pollutants not covered under Directives 2004/107/EC and 2008/50/EC



Process and goals

EU policy making cycle (key elements, stylised)

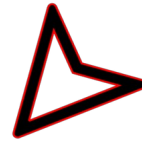


See: https://ec.europa.eu/info/sites/default/files/swd2021_305_en.pdf



- Better alignment with **WHO 2021** global air quality guidelines
- Improved **Health, Social, Environmental and Economic** benefits

Process and goals



Comparing policy options

All three options would render **significant health and environment benefits**, which outweigh the implementation costs by 2030 – albeit to varying degrees.

Table 17 – A Comparison of policy options on level of alignment with the WHO Air Quality Guidelines (2030)

		Baseline	Policy Option I-3	Policy Option I-2	Policy Option I-1
Air Quality standard	PM _{2.5}	25 µg/m ³	15 µg/m ³	10 µg/m ³	5 µg/m ³
	NO ₂	40 µg/m ³	30 µg/m ³	20 µg/m ³	10 µg/m ³
Exposed > WHO levels	PM _{2.5}	333 million	267 million	243 million	226 million
	NO ₂	52 million	46 million	44 million	42 million
Is the standard achievable with available measures? ^(a)		For >99% of PM _{2.5} sampling points	For 99% of PM _{2.5} sampling points	For 94% of PM _{2.5} sampling points	For 29% of PM _{2.5} sampling points
Key economic impacts					
Mitigation costs	Central	0	€3.3 bn	€5.6 bn	€7.0 bn
	If corrected for 'border cell effect' ^(b)	0	€1.0 bn	€5.4 bn	€7.0 bn
Gross benefits	Low ^(c)	0	€32.4 bn	€41.8 bn	€45.0 bn
	High ^(d)	0	€93.8 bn	€124.4 bn	€130.8 bn
Net benefits	Low ^(c)	0	€29.0 bn	€36.2 bn	€37.9 bn
	High ^(d)	0	€90.4 bn	€118.7 bn	€123.6 bn
Benefit-cost ratio	Low ^(c)	-	10:1	7.5:1	6:4
	High ^(d)	-	28:1	21:1	19:1
Net GDP impact		+/- 0%	+ 0.26 %	+ 0.38 %	+ 0.44 %
Key health impacts ^(e)					
Annual premature mortality	Due to PM _{2.5}	56 100	38% less	49% less	53% less
	Due to NO ₂	4 050	12% less	16% less	20% less

Key criteria:

- Achievability
- Mitigation costs
- Gross benefits
- Benefit vs Cost
- Health impact



- Better alignment with **WHO 2021** global air quality guidelines
- Improved **Health, Social, Environmental and Economic** benefits

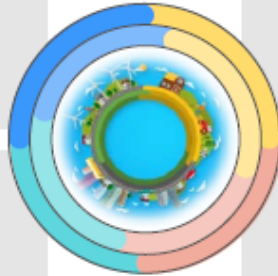
Improvements intended by the EU proposal

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

Environment & health - New limit values (I)



EU air quality standards – ‘long-term’ averages (Annex I)

Pollutant	Period	Until 2030	As of 2030		WHO ‘Guideline’
PM _{2.5}	(calendar year)	25 µg/m ³	10 µg/m ³		5 µg/m ³
PM ₁₀	(calendar year)	40 µg/m ³	20 µg/m ³		15 µg/m ³
NO ₂	(calendar year)	40 µg/m ³	20 µg/m ³		10 µg/m ³
SO ₂	(calendar year)	-	20 µg/m ³		-
Benzene	(calendar year)	5 µg/m ³	3.4 µg/m ³		1.7 µg/m ³
Pb (lead)	(calendar year)	0.5 µg/m ³	0.5 µg/m ³		0.5 µg/m ³
As (arsenic)	(calendar year)	6 ng/m ³	6.0 ng/m ³		6.6 ng/m ³
Cd (cadmium)	(calendar year)	5 ng/m ³	5.0 ng/m ³		5 ng/m ³
Ni (Nickel)	(calendar year)	20 ng/m ³	20 ng/m ³		25 ng/m ³
Benzo(a)Pyrene	(calendar year)	1 ng/m ³	1.0 ng/m ³		0.12 ng/m ³
Ozone	(5yr avg AOT 40)	18.000 µg/m ³ x h	18.000 µg/m ³ x h	(target value)	-
Ozone	(5yr avg AOT 40)	6.000 µg/m ³ x h	6.000 µg/m ³ x h	(long-term obj.)	-

Environment & health - New limit values (II)



EU air quality standards – ‘short-term’ averages (Annex I)

Pollutant	Period	Until 2030	As of 2030		WHO ‘Guideline’
PM _{2.5}	(1 day)	-	25 µg/m ³ (-18d)		15 µg/m ³ (-3d)
PM ₁₀	(1 day)	40 µg/m ³ (-35d)	45 µg/m ³ (-18d)		45 µg/m ³ (-3d)
NO ₂	(1 day)	-	50 µg/m ³ (-18d)		50 µg/m ³ (-3d)
NO ₂	(1 hour)	200 µg/m ³ (-18h)	200 µg/m ³ (-1h)		200 µg/m ³ (-1h)
SO ₂	(1 day)	125 µg/m ³ (-3d)	50 µg/m ³ (-18d)		40 µg/m ³ (-3d)
SO ₂	(1 hour)	350 µg/m ³ (-24h)	350 µg/m ³ (-1h)		-
CO	(1 day)	-	4 mg/m ³ (-18d)		4 mg/m ³ (-3d)
CO	(8 hour max)	10 mg/m ³	10 mg/m ³		10 mg/m ³
Ozone	(3yr avg 8h max)	120 µg/m ³ (-25d)	120 µg/m ³ (-18d)	(target value)	100 µg/m ³ (-3d)
Ozone	(3yr avg 8h max)	120 µg/m ³ (-3d)	100 µg/m ³ (-3d)	(long-term obj.)	100 µg/m ³ (-3d)

Environment & health - other metrics (III)



Average exposure reduction obligation

Pollutant	Period	As of 2030
PM _{2.5}	(10 year)	-25% per 10 year
Applies if average exposure concentration is > 5 µg/m ³		
NO ₂	(10 year)	-25% per 10 year
Applies if average exposure concentration is > 10 µg/m ³		

To be based on Average Exposure Indicator, expressed as µg/m³ (AEI) shall be based upon measurements in urban background locations in territorial NUTS 1 level;

The AEI shall be assessed as a 3-calendar-year running annual mean averaged over all urban background sampling points in the NUTS 1 region concerned.

Alert / information thresholds

Pollutant	Current	Proposal
PM _{2.5}	-	50 µg/m ³
PM ₁₀	-	90 µg/m ³
SO ₂	500 µg/m ³	500 µg/m ³
NO ₂	400 µg/m ³	400 µg/m ³

Measured over 3 consecutive hours for SO₂ and NO₂; over 3 consecutive days for PM_{2.5} and PM₁₀

Pollutant	Current	Proposal
Ozone (alert)	180 µg/m ³	180 µg/m ³
Ozone (info)	240 µg/m ³	240 µg/m ³

Measured over 3 consecutive hours

The Council's text adds now some flexibility with regard to the attainment of the air quality limit values. In specific situations, it would be possible to request a postponement of the deadline for a maximum of 10 years until no later than 1 January 2040

Revised AAQD Improvements intended by the EU proposal

Environment & health - Norway consequences

PM₁₀ 61 stasjoner, PM_{2,5} 57 stasjoner

	2008/50/EC	Norwegian limit value	Proposal new directive	2008/50/EC	Norwegian limit value	Proposal new directive
	Year			Day		
PM _{2,5}	25	10	10	-	-	25 (18 times)
Number of stations above	0	0	0	-	-	6
PM ₁₀	40	20	20	50 (35 times)	50 (25 times)	45 (18 times)
Number of stations above	0	8	8	2	7	17

Station	Yearly average PM10	Number of days PM10 > 50 (35 allowed)	Number of days PM10 > 45 (18 allowed)	Yearly average PM2,5**	Number of days PM2,5 > 25 (18 allowed)
Bekkestua	18	17	23	9	18
E18 Havik kirke	72% data capture	27	33	72% data capture	20
Backeparken	14	7	9	8	20
Bangeløkka	72% data capture	30	39	No PM2,5	No PM2,5
Vårveien	23	32	43	10	28
Solheim	23	39	44	10	16
Alnabru	23	23	31	8	5
Bygdøy Alle	23	36	41	9	12
Hjørnes	24	32	42	8	1
Manglerud	21	25	34	7	2
Smedstad	21	24	27	7	4
Vahl skole	17	16	21	9	12
Leiret	16	17	23	7	6
St. Croix	17	18	21	10	19
Minnesundvegen, Gjøvik	16	16	21	6	0
Knarrodalstranda	16	8	12	10	22
Lenemannadalen	19	15	19	8	2
Sverresgate	18	15	21	-	-
Ringsakervegen	21	26	32	10	25
Alvim	16	7	10	10	13



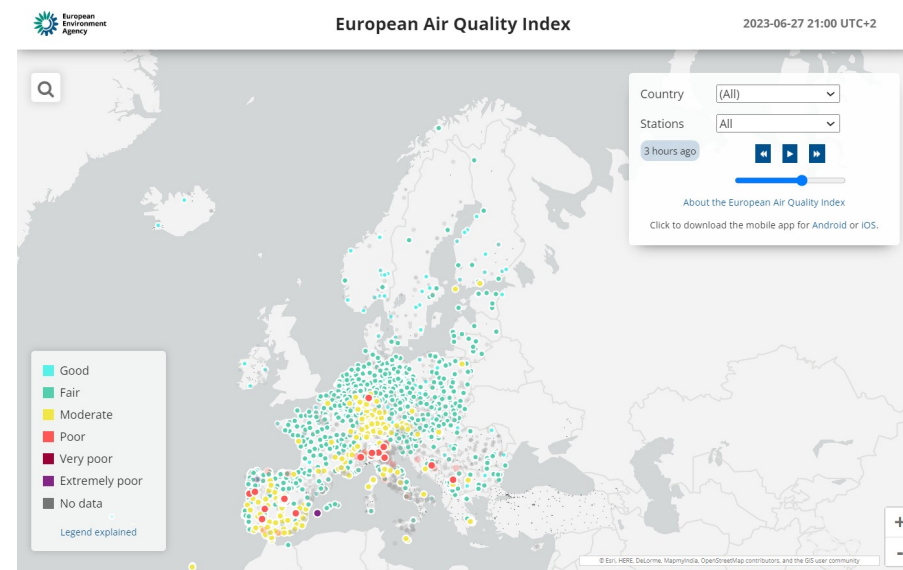


Revised AAQD Improvements intended by the EU proposal

Information & Communication

Stronger focus on information to the public

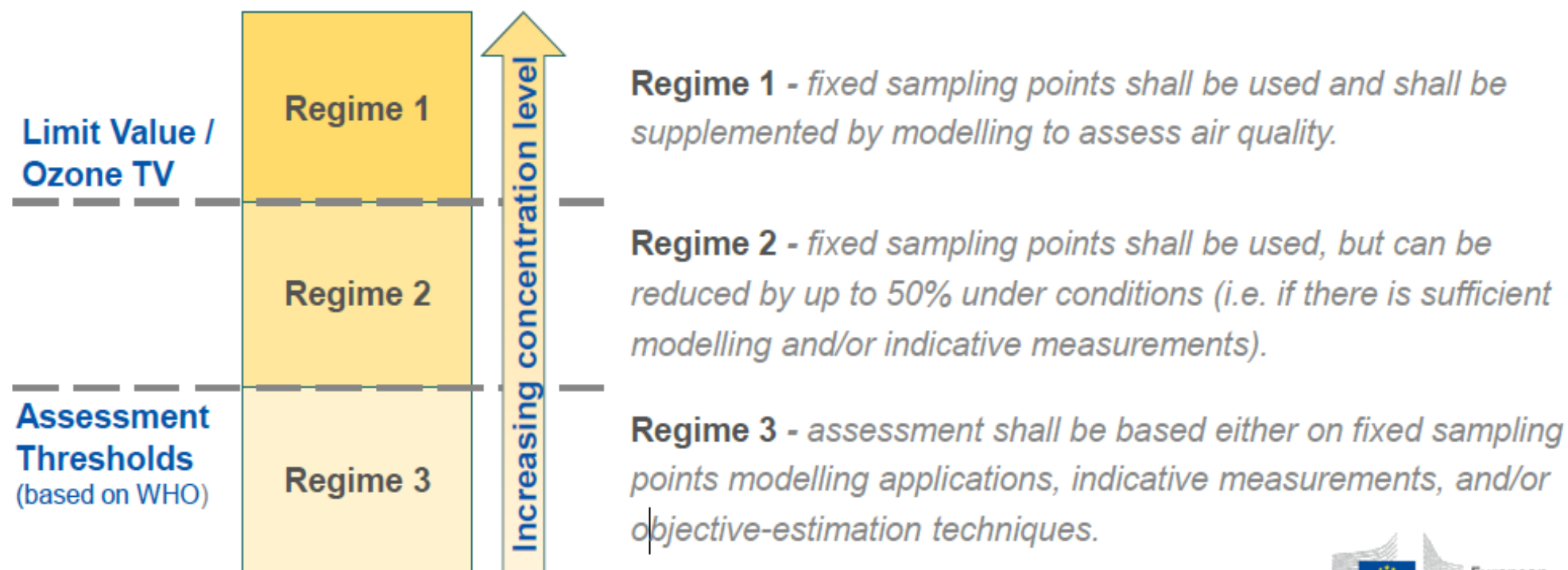
- **Air quality indexes up-to date information**
- **Links to Copernicus Forecasting capabilities**
- **Short-term mitigation actions**
- **Indicative measurements – sensors**





Monitoring & Assessment – Refined regimes

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





Monitoring & Assessment

Stronger role of Modelling

Stronger use of sensors - indicative measurements

FAIRMODE & GUIDANCE FOR USE OF MODELS

- Exceedance situation indicators & pop exposure
- Spatial representativeness & network design
- Source apportionment
- Forecast
- Planning



The Council's text softens the requirements on modelling and requires the establishment of urban supersites

Pollutans & New pollutants

➤ Gases and Vapours

- Oxides of Nitrogen (NO_x)
- Sulphur Dioxide (SO₂)
- Carbon monoxide (CO)
- Ozone (O₃)
- Benzene (C₆H₆)
- Ammonia (NH₃)

➤ Particulate Matter

- PM₁₀
- PM_{2.5}
- Chemical composition of PM
- Ultrafine particles (UFP)
- Oxidative potential of particulate matter (PM)

➤ Heavy metals and PAHs

- Lead (Pb)
- Arsenic (As)
- Cadmium (Cd)
- Mercury (Hg)
- Nickel (Ni)
- Benzo(a)pyrene

➤ Volatile Organic Compounds (VOC)

➤ Black carbon (BC)



Governance & Enforcement – Air quality plans

- Air quality plans are made **mandatory** when **limit values**, the **ozone target value** or **average exposure reduction obligations** are exceeded – **Require modelling expertise at urban scale**
- **Improved enforceability**: new provisions on access to justice, compensation and penalties
- More **transboundary cooperation** on air quality

The Council's text require member states to cooperate with each other to identify the sources of air pollution and the measures necessary to address them, and to plan joint activities, such as the preparation of coordinated national air quality plans.

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.
- **Environmental benefits:** Decreases in **eutrophication** (-22%) and **acidification** (-63%) of ecosystems; less crop losses and damage to forests.
- **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.

Thank you!

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