



Air Quality Revision of EU Rules



March 2023

*European Commission
Clean Air & Urban Policy Unit*

“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

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

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

AMBITION LEVEL



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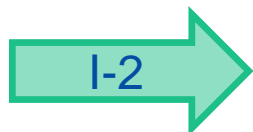
EU standards today / baseline



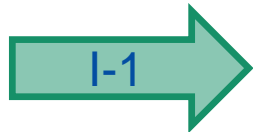
Policy option I-3



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



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	€5.1 bn	€7.0 bn
Gross benefits	Low ^(c)	0	€32.4 bn	€41.8 bn	€45.0 bn
	High ^(d)	0	€93.8 bn	€121.1 bn	€130.8 bn
Net benefits	Low ^(c)	0	€29.0 bn	€36.2 bn	€37.9 bn
	High ^(d)	0	€90.4 bn	€115.7 bn	€123.6 bn
Benefit-cost ratio	Low ^(c)	-	10:1	7.5:1	6:1
	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



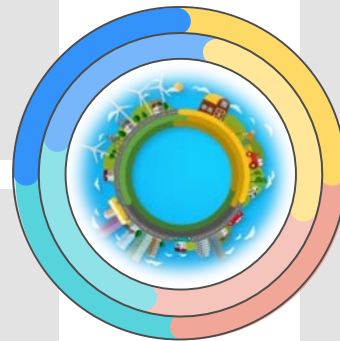
What does our proposal improve?

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



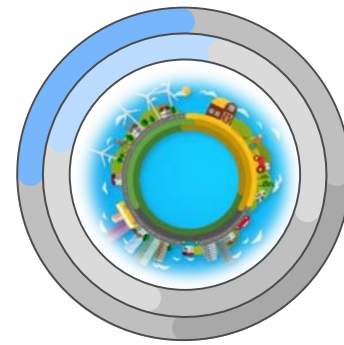
Monitoring & assessment

- 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

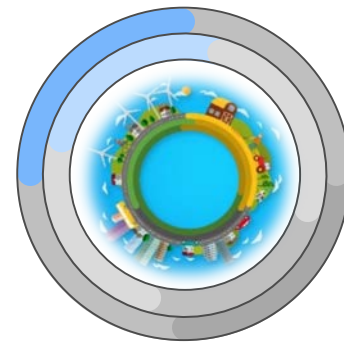
Environment & health: 'air quality standards'



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/m³		5 µg/m ³
PM ₁₀	(calendar year)	40 µg/m ³	20 µg/m³		15 µg/m ³
NO ₂	(calendar year)	40 µg/m ³	20 µg/m³		10 µg/m ³
SO ₂	(calendar year)	-	20 µg/m³		-
Benzene	(calendar year)	5 µg/m ³	3.4 µg/m³		1.7 µg/m ³
Pb (lead)	(calendar year)	0.5 µg/m ³	0.5 µg/m³		0.5 µg/m ³
As (arsenic)	(calendar year)	6 ng/m ³	6.0 ng/m³		6.6 ng/m ³
Cd (cadmium)	(calendar year)	5 ng/m ³	5.0 ng/m³		5 ng/m ³
Ni (Nickel)	(calendar year)	20 ng/m ³	20 ng/m³		25 ng/m ³
Benzo(a)Pyrene	(calendar year)	1 ng/m ³	1.0 ng/m³		0.12 ng/m ³
Ozone	(5yr avg AOT 40)	18.000 µg/m ³ x h	18.000 µg/m³ x h	(target value)	-
Ozone	(5yr avg AOT 40)	6.000 µg/m ³ x h	6.000 µg/m³ x h	(long-term obj.)	-

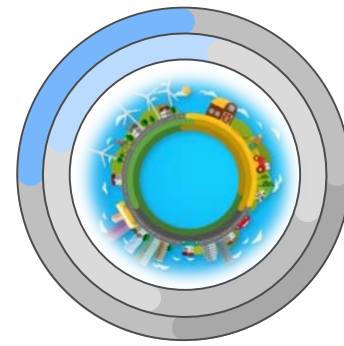
Environment & health: 'air quality standards'



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'



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

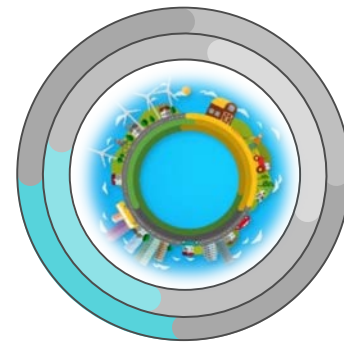
Pollutant	Current	Proposal
PM _{2.5}	-	50 µg/m ³
PM ₁₀	-	90 µg/m ³
SO ₂	500 µg/m ³	500 µg/m ³
NO ₂	400 µg/m ³	400 µg/m ³

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

Governance & enforcement: 'air quality plans'



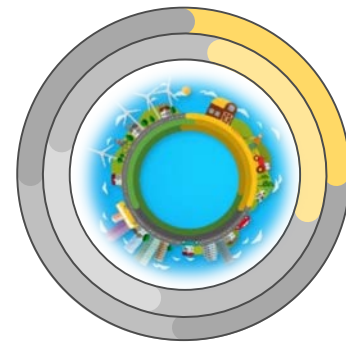
Article 19 increases the effectiveness of **air quality plans** to ensure compliance with air quality standards as soon as possible. This will be achieved by

- (a) requiring air quality plans to be drawn up **before air quality standards enter into force** in cases of non-compliance prior to 2030,*
- (b) specifying that air quality plans must aim to keep the **exceedance period** as short as possible, and in any case **no longer than 3 years** for limit values, and*
- (c) mandating **regular updates** of air quality plans if they do not achieve compliance.*

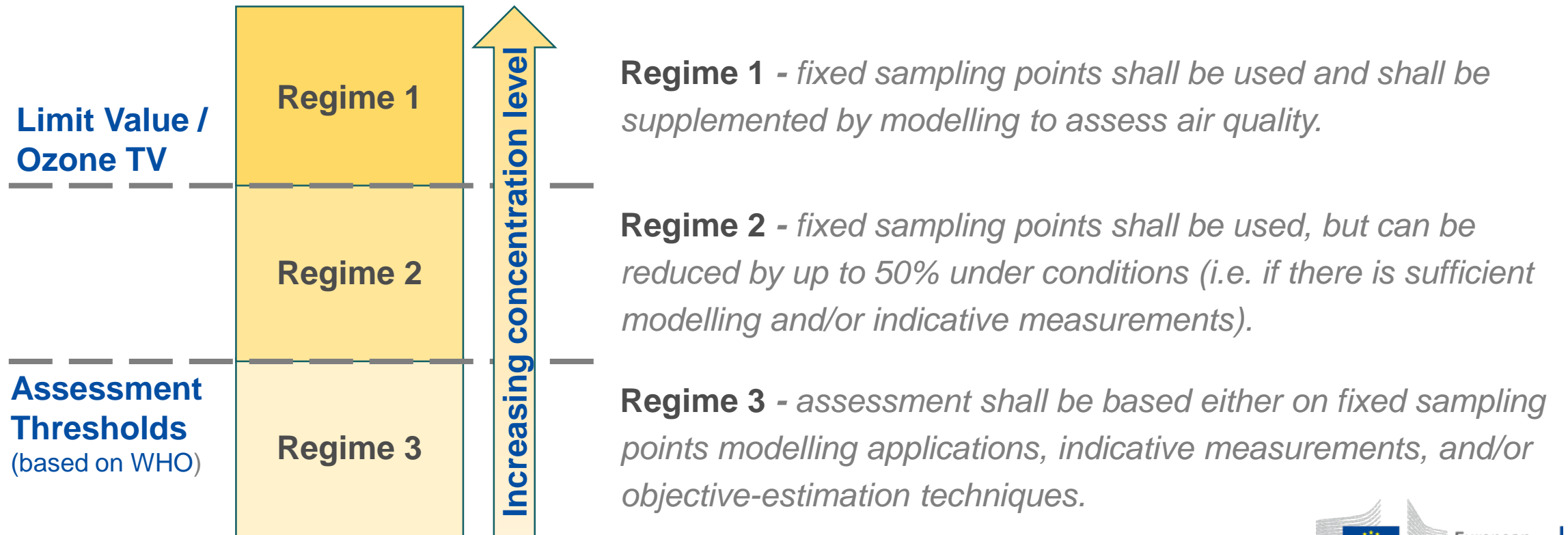
Air quality plans are made **mandatory** when **limit values**, the **ozone target value** or **average exposure reduction obligations** are exceeded. [...]

Annex VIII brings together **requirements for air quality plans** that address exceedances of limit values, the ozone target value and average exposure reduction obligations.

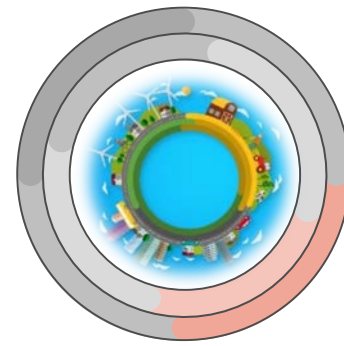
Monitoring & assessment: 'refined approach'



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



Information & communication: 'data & indices'



Article 22 requires Member States to ensure that the public as well as appropriate organisations are informed, adequately and in good time - made available to the public free of charge by means of **easily accessible media and communication channels**.

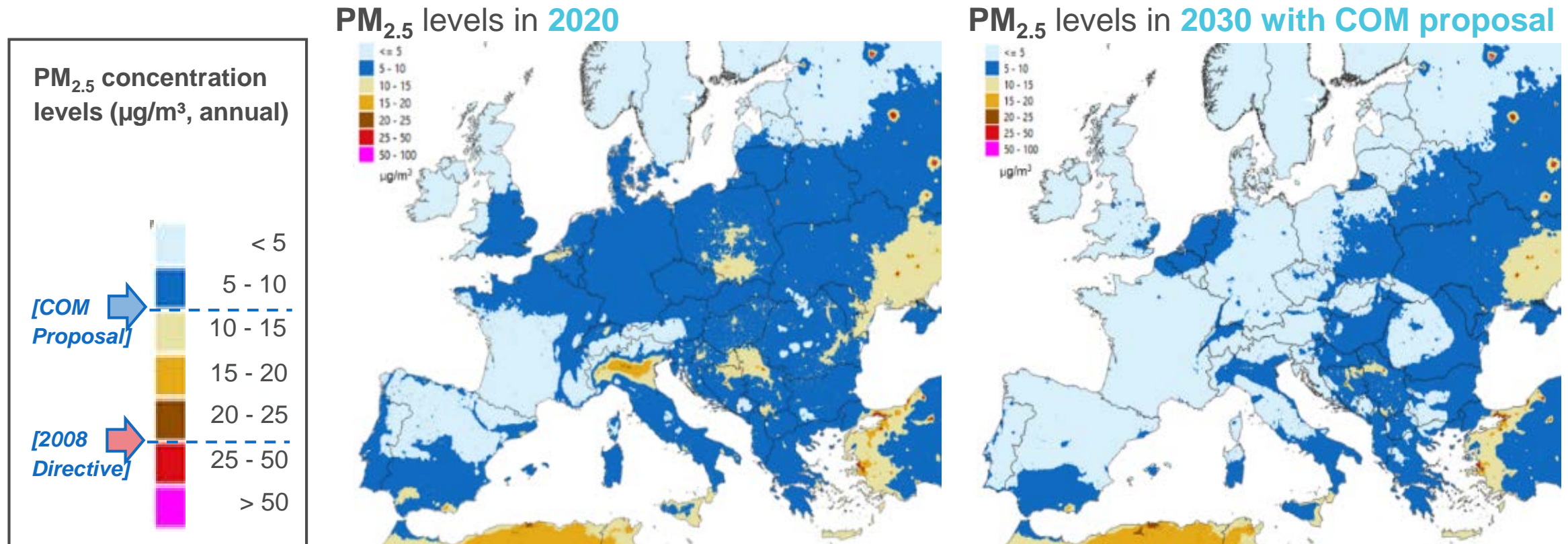
Article 22 also obliges Member States to establish an **air quality index** providing hourly air quality updates for the most harmful air pollutants (SO₂, NO₂, PM₁₀ and PM_{2.5} and O₃).

Article 23 adds new requirement: **all data to be reported** (and to be used for compliance assessment purposes), even if they do not meet the data quality objectives.

Annex IX enhances the **air quality information to be provided to the public**, including obligatory hourly updates for fixed measurements of key air pollutants, as well as up-to-date modelling results where those are available.

What will the proposal achieve? – Cleaner Air

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

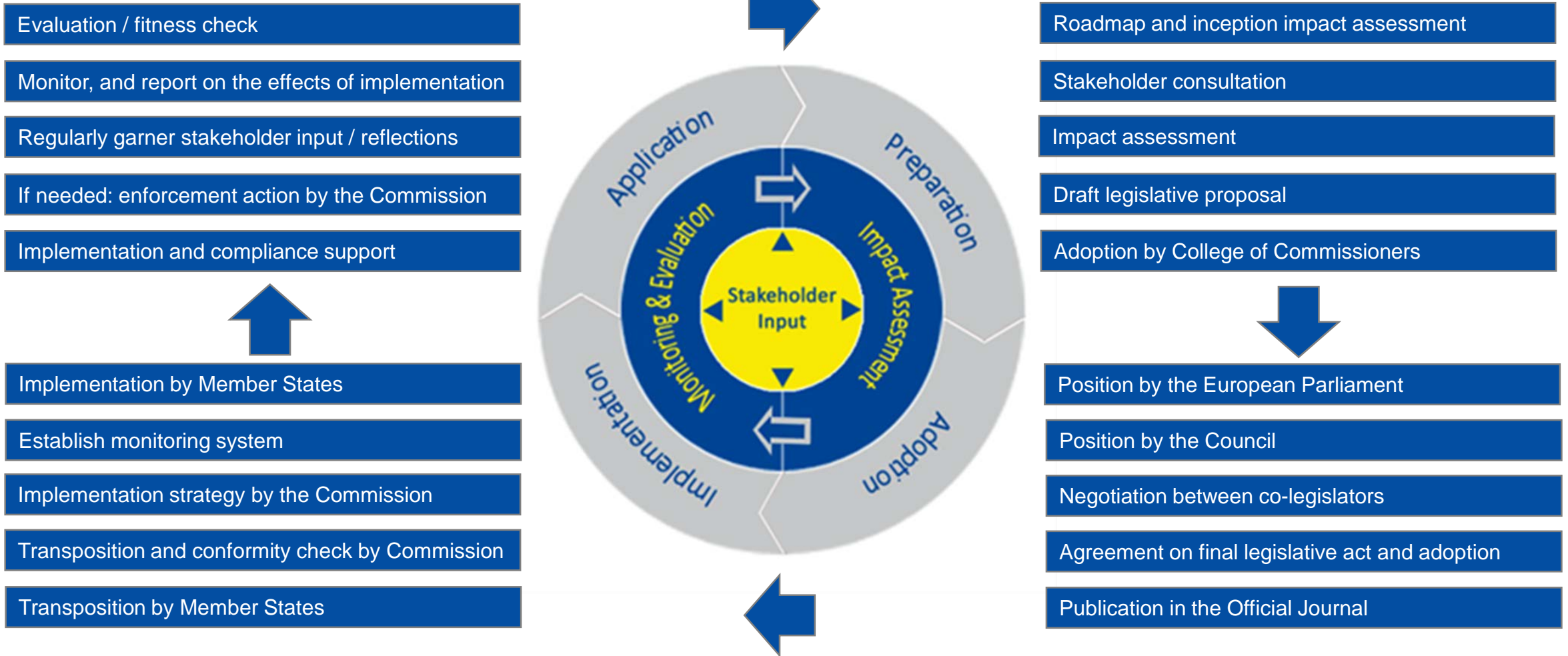


Based on GAINS/EMEP/µEMEP. Note that these maps show the total concentration levels, and include also contributions from natural sources of wind blown dust and sea salt.

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.
- **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.

EU policy making cycle (key elements, stylised)



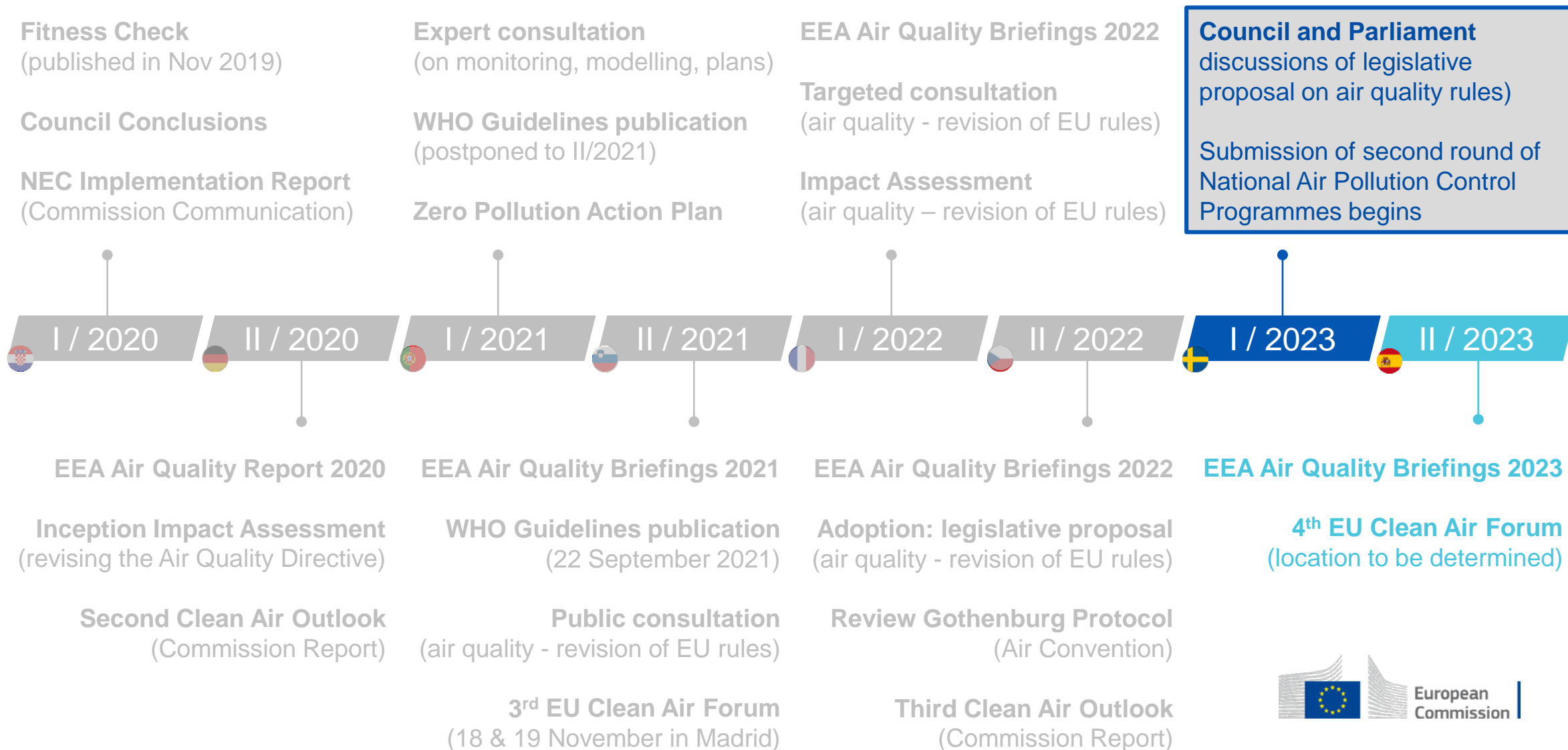
Air quality monitoring, modelling, plans

Work initiated on **two draft technical guidance documents** (building inter alia on the outcome of the support study on strengthening of air quality monitoring, modelling and plans related to tools, methods and approaches needed for a proper implementation of air quality legislation:

- (1) Technical guidance document on the **use of reference methods and demonstration of equivalence**, and the assurance of relevant data quality objectives (including for established and additional air pollutants) for air quality monitoring;
- (2) Technical guidance document on the **use of modelling for various application domains** under the Ambient Air Quality Directive, and the assurance of relevant data quality objectives for air quality assessments.

>> Will require FAIRMODE input (in 2023/2024).

EU Clean Air Policy Milestones 2020 to 2023



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

