

Proposal COM(2022) 542 of 26 October 2022 for a **Directive on ambient air quality and cleaner air for Europe (recast)**

AIR QUALITY

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LONG VERSION

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A. Key elements of the EU proposal

1 Context and objectives

1.1 EU measures to improve air quality

- ▶ The EU wants to improve air quality by way of
 - two Air Quality Directives [2004/107/EC and 2008/50/EC], which establish EU-wide minimum air quality standards but leave the choice of specific measures to the Member States;
 - the NEC Directive on the reduction of national emissions of air pollutants [(EU) 2016/2284; see [cepPolicyBrief 24/2014](#)];
 - other legislation, e.g. on industrial emissions [Directive 2010/75/EU; see [cepPolicyBrief 18/2022](#)], on EURO 6 emission limits for cars and vans and EURO VI emission limits for new lorries and buses [Regulations (EC) No.715/2007 and (EC) No. 595/2009; EURO 7 proposed Regulation COM(2022) 586, see [cepPolicyBrief 05/2023](#)], on non-road mobile machinery [Regulation (EU) 2016/1628; see [cepPolicyBrief 03/2015](#)] and on ecodesign requirements [Directive 2009/125/EC; proposed Regulation COM(2022) 142, see [cepPolicyBrief 10/2022](#)].
- ▶ Over the last three decades, "significant improvements" in air quality have been achieved in the EU. Nevertheless, air pollution is still to be considered a cause of [p. 1]
 - around 300,000 "premature deaths" per year – compared with up to 1 million per year in the early 1990s;
 - diseases such as asthma, cardiovascular problems and lung cancer.
- ▶ The Commission's Zero Pollution Action Plan for Air, Water and Soil by 2050 [COM(2021) 400; see [cepPolicyBrief 20/2022](#)], wants to achieve the following by 2030, as compared to 2005,
 - a 55% reduction in the number of premature deaths caused by air pollution;
 - a 25% reduction in the proportion of ecosystems whose biodiversity is threatened by air pollution.
- ▶ With its proposal for a Directive, the European Commission wants to improve air quality even further by
 - merging and updating the Air Quality Directives [2004/107/EC and 2008/50/EC];
 - aligning EU air quality standards "more closely" with the latest 2021 World Health Organisation air quality guidelines (WHO air quality guidelines¹);
 - bringing in more stringent requirements for air-quality monitoring, modelling and planning;
 - bringing in new requirements on public information, access to justice, claims for compensation against Member States and penalties for private individuals and companies.

1.2 WHO air quality guidelines

- ▶ The WHO air quality guidelines [p. 1]
 - are non-binding recommendations that focus only on health protection and do not take into account other aspects such as the technical feasibility or cost involved in complying with them;
 - consist of the following types of recommendation for the maximum concentration of a pollutant in the air (ambient air pollution) [WHO air quality guidelines, p. ix and xi]:
 - WHO "air quality guideline Levels" (AQG Levels), below which it is assumed "adverse health effects do not occur or are minimal" and
 - WHO Interim Targets ("ITs"), which are intended as steps towards achieving the WHO guideline levels in areas with high air pollution;
 - are generally scientifically reviewed every ten years, most recently in September 2021.
- ▶ According to the WHO, when concrete air quality standards are adopted locally – e.g. by states or the EU – using the health-based WHO air quality guidelines, "legal aspects, cost-benefit or cost-effectiveness, technological feasibility, infrastructural measures and socio-political considerations" may also need to be examined [SWD(2022) 545, p. 292; WHO air quality guidelines, p. 174].

¹ WHO (2021), [WHO global air quality guidelines](#): particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide.

2 "Zero pollution objective", pollutants and EU air quality standards

- ▶ The Directive sets out a "zero pollution objective" for air quality in the EU, so that this [Art. 1 (1)]
 - is "progressively" improved to a level that is "no longer considered harmful to human health and natural ecosystems" according to scientific evidence;
 - contributes to a "toxic-free environment" by 2050 at the latest.
- ▶ The Directive specifies "air quality standards" that will apply from 2030 [Art. 1 (2)]
 - to pollutants such as sulphur dioxide (SO₂), nitrogen dioxide (NO₂), nitrogen oxides (NO_x), particulate matter (PM₁₀, PM_{2.5}), lead, benzene, carbon monoxide (CO), arsenic, cadmium, nickel, benzo[a]pyrene and ozone (O₃);
 - in the form of
 - "limit values" which are not to be exceeded [Art. 4 (26)];
 - "target values" for ozone, which must be met "where possible" [Art. 4 (27)];
 - "long-term objectives", which must be met "save where not achievable through proportionate measures" [Art. 4 (34)];
 - Reduction obligations and concentration objectives to be complied with regarding the population's average level of "exposure" to pollutants [Art. 4 (29) and (30)];
 - "critical levels", which, if exceeded, may be directly harmful to vegetation and ecosystems but not to humans, and which must be complied with [Art. 4 (31)];
 - "information thresholds", above which there is a health risk for particularly sensitive and vulnerable groups of the population and about which the public must be informed "without delay" [Art. 4 No. (32)];
 - "alert thresholds", above which there is a health risk to the entire population and Member States must take "immediate" action [Art. 4 (33)].

3 Regular review of EU air quality standards

- ▶ Member States must (Art. 3 (1) and (2))
 - review the scientific evidence on air pollutants and their effects on health and the environment relevant to achieving the zero pollutant objective:
 - by 31 December 2028;
 - every five years thereafter;
 - and "more often" if "substantial" new scientific findings "point to the need for it";
 - report and present the main findings to the European Parliament and the Council on,
 - whether the current air quality standards are still appropriate;
 - whether additional air pollutants should be covered;
 - whether this Directive needs to be revised to ensure "alignment" with the WHO air quality guidelines and the latest scientific findings.
- ▶ The Commission must, if it considers it appropriate on the basis of the review, submit a proposal to revise the air quality standards or to cover other air pollutants [Art. 3 (4)].

4 EU limit values and target values

- ▶ From 2030, new EU-wide limit values will apply to pollutant concentrations in the air [Annex I, Tab. 1], the level of which corresponds to the lowest – i.e. strictest – WHO interim targets [see Tab. 1, columns 3 and 4].
- ▶ From 2030, a new EU-wide target value will apply to ozone concentrations in the air [Annex I, Tab. 1], the level of which corresponds to the lowest – i.e. strictest – WHO interim target [see Tab. 2, columns 3 and 4].
- ▶ In contrast, the Rapporteur of the European Parliament's Environment Committee (ENVI) is calling for "full and continuous alignment" with the "most up-to-date WHO air quality guidelines" [ENVI Report²].
- ▶ The annual average exposure to PM_{2.5} and NO₂ will be measured by the "Average Exposure Indicator" (AEI) and [Annex I, Section V, para. A and C]
 - will be based on measurements in urban background locations in NUTS 1 territorial units ("NUTS 1 territorial unit") throughout the territory of a Member State;
 - will be assessed as a three-calendar-year annual mean concentration of the pollutant concerned [in µg/m³] averaged over all sampling points in the NUTS 1 territorial unit;
 - is calculated by deducting the contributions from "natural sources", if applicable.

² European Parliament (2023), ENVI Committee, Report by Rapporteur Javi López of 5 July 2023, Amendment 3 to Recital 4, Amendment 44 to Article 3(2) and Explanatory Memorandum, p. 167.

- From 2030 onwards, the AEI must not exceed a value that [Annex I, Section V, para. B and C; see Tab. 1, columns 5 and 6]
 - for PM_{2.5} is 25% lower than the AEI ten years earlier, unless it is already below the target value of 5 µg/m³;
 - for NO₂ is 25% lower than the AEI ten years earlier, unless it is already below the target value of 10 µg/m³.

4.1 Comparison of EU limit values and target values with WHO air quality guidelines

Tab. 1: Comparison of EU limit values and AEI target values with WHO air quality guidelines

	Current EU limit value	Planned EU limit value	WHO Interim Target (IT)	Planned EU AEI target value	WHO guideline levels (AQG levels)
PM _{2.5} (annually) [µg/m ³]	25.0 / 20.0	10.0	10.0	5.0	05:00
PM _{2.5} (daily) [µg/m ³]	–	(95%) ^a 25.0	(99%) 25.0	–	(99%) 15.00
PM ₁₀ (annually) [µg/m ³]	40.0	20.0	20.0	–	15:00
PM ₁₀ (daily) [µg/m ³]	(35 days) 50.0	(95%) 45.0	(99%) 50.0	–	(99%) 45.00
NO ₂ (annually) [µg/m ³]	40.0	20.0	20.0	10.0	10.00
NO ₂ (daily) [µg/m ³]	–	(95%) 50.0	(99%) 50.0	–	(99%) 25.00
NO ₂ (hourly) [µg/m ³]	(18 hours) 200	(99.98%) 200.0	–	–	(99.98%) 200.00
CO (daily) [mg/m ³]	–	(95%) 4.0	(99%) 7.0	–	(99%) 4.00
CO (8 hours) [mg/m ³]	10.0	10.0	–	–	10:00
SO ₂ (annually) [µg/m ³]	20.0	20.0	–	–	–
SO ₂ (daily) [µg/m ³]	(3 days) 125.0	(95%) 50.0	(99%) 50.0	–	(99%) 40.0
SO ₂ (hourly) [µg/m ³]	(24 hours) 350.0	(99.98%) 350.0	–	–	–
Benzo(a)Pyrene (annually) [ng/m ³]	1.0	1.0	–	–	0.12
Benzol (annually) [µg/m ³]	5.0 ^b	3.4	–	–	1.70
Nickel (annually) [ng/m ³]	20.0 ^b	20.0	–	–	25.00
Lead (annually) [µg/m ³]	0.5 ^b	0.5	–	–	0.50
Arsenic (annually) [ng/m ³]	6.0 ^b	6.0	–	–	6.60
Cadmium (annually) [ng/m ³]	5.0 ^b	5.0	–	–	5.00

Sources: Commission proposal COM(2022) 542, Annex I, Section 1; WHO (2021), WHO air quality guidelines

^a Brackets: permitted exceedances; for daily values: 95% = 18 days, 99% = 3 days; hourly values: 99.98% = 1 hour (hr.).

^b Current EU target value.

Tab. 2: Comparison of EU ozone targets with WHO air quality guidelines

	Current EU target	Planned EU target	WHO Interim Target (IT)	Planned EU long-term target	WHO guideline level (AQG levels)
O ₃ (high season) [µg/m ³]	–	70	70	–	60
O ₃ (8-hour mean) [µg/m ³]	(25 days) 120	(95%) ^a 120	(99%) 120	100	(99%) 100

Sources: Commission proposal COM(2022) 542, Annex I, Section 2; WHO (2021), WHO air quality guidelines

Tab. 3: Alert and information thresholds

Pollutant	Alert threshold	Information threshold
SO ₂ (over 3 consecutive hrs) [µg/m ³]	500	–
NO ₂ (over 3 consecutive hrs) [µg/m ³]	400	–
PM _{2.5} (over 3 consecutive days) [µg/m ³]	40	–
PM ₁₀ (over 3 consecutive days) [µg/m ³]	90	–
O ₃ (over 3 consecutive hrs) [µg/m ³]	240	–
O ₃ (in 1 hr.) [µg/m ³]	–	180

Sources: Commission proposal COM(2022) 542, Annex 1, Section 4

4.2 Measures: Model calculations of costs and degree of compliance with EU limit values

- ▶ The Commission [Impact Assessment SWD(2022) 545, IA Report, p. 42 et seq.] analyses several scenarios for the development of air quality according to varying levels of stringency of air quality standards and their compliance with the required end-of-pipe (EOP) technical environmental protection measures (EOP measures):
 - without further EOP measures other than those already established by the EU or its Member States (baseline scenario);
 - cost-optimal technical EOP measures ("optimal EOP measures") with
 - full alignment with WHO guideline levels (Scenario I-1, corresponds to ENVI report of 5 July 2023),
 - closer alignment with WHO guideline levels (Scenario I-2, corresponds to the Commission proposal),
 - partial alignment with WHO guideline levels (Scenario I-3);
 - maximum technically feasible EOP measures – without taking costs into account (MTF scenario)*.
- ▶ The Commission expects its proposal, based on Scenario I-2, involving "closer alignment" with WHO guideline levels, to produce benefits that "far outweigh the costs" [p. 20],
 - in terms of health (including lower mortality and morbidity, lower health expenditure, less absenteeism due to illness, higher labour productivity) and
 - in terms of the environment (including lower ozone-related crop yield losses)
- ▶ The Commission only considers the costs of the "optimal EOP measures" and not the costs of additional measures, which become necessary to comply with the limit values in exceedance areas, such as behavioural changes, additional switching to alternative fuels – such as electrification – or production restrictions [IA Report, footnote 89 and p. 163].
- ▶ In relative terms, the costs considered by the Commission for the respective scenarios [IA Report Summary; p. 3] are
 - higher in Member States where air pollution is already a problem or where special measures are needed;
 - particularly relevant for the heating sector, industry and agriculture.
- ▶ The stricter the limit values in the different scenarios [see Tab. 4],
 - the higher the projected number of EU citizens living in areas with pollutant concentrations above the respective limit value, with almost half of the EU population affected in the full-WHO-alignment scenario (I-1) despite "optimal EOP measures" for PM_{2.5};
 - the lower the projected number of EU citizens living in areas with pollutant concentrations above the WHO guideline level; however, the levels in the Commission proposal and in the full-WHO-alignment scenario (I-1) are of the same order of magnitude and are both quite high.
- ▶ The proportion of PM_{2.5} sampling points in compliance with the scenario limit value [see Tab. 4]
 - is 94% in the Commission proposal; this implies extensive compliance with the limit value;
 - is only 29% in the full-WHO-alignment scenario (I-1), which would mean a host of additional costly measures would be needed to comply with the limit value.
- ▶ The annual cost of the "optimal EOP measures" increases with the stringency of the limit values from € 3.3 billion (Scenario I-3) to € 7 billion (Scenario I-1), with costs of € 5.6 billion projected for the Commission scenario [see Tab 4].
- ▶ Without taking into account the additional costs required, all scenarios have a benefit-cost ratio of at least 6:1 or 19:1 – depending on the type of damage calculation used for air pollution [see. Tab. 4].
- ▶ However, it is not possible to deduce from the Commission's impact assessment how high the actual costs of complying with the limit values are likely to be.
- ▶ In comparison with the Commission proposal, the scenario of a full alignment of the EU limit values with the WHO guideline levels (I-1) shows only a slight improvement in terms of premature mortality per year as compared with 2020 [see Tab. 4, column 6].
- ▶ Overall, the results from the partial-WHO-alignment scenario (I-3) are not significantly worse than those of the Commission proposal [see Tab. 4, columns 4 and 5].
- ▶ Even in the scenario of maximum technically feasible EOP measures (MTF) [see Tab. 4, column 7]
 - a considerable proportion of the sampling points are above the ozone target value of 100 µg/m³;
 - a high proportion of EU citizens live in areas with pollutant concentrations above the WHO guideline level for PM_{2.5} and NO₂.

* This scenario is called maximum technically feasible reduction (MTFR) scenario in the IA report and the underlying studies.

Tab. 4: Projections for 2030 according to the individual scenarios

		Baseline scenario	Scenario I-3 Partial WHO alignment	Scenario I-2: Commission proposal	Scenario I-1 Full WHO alignment	MTF Scenario
Air quality limit values [$\mu\text{g}/\text{m}^3$]	PM _{2.5}	25	15	10	5	–
	PM ₁₀	40	30	20	15	–
	NO ₂	40	30	20	10	–
Air quality target values [$\mu\text{g}/\text{m}^3$]	O ₃	120 / 100	–	–	–	–
Population above respective scenario limit value	PM _{2.5}	20000	0.4 m	11 m	226 m	–
	PM ₁₀	–	13000	2.7 m	13 m	–
	NO ₂	110000	0.46 m	3.44 m	42 m	–
Sampling points above ozone target value (120/100)		0% / 32.9%	–	–	–	0% / 19.6%
Population above respective WHO guideline level	PM _{2.5}	333 m	267 m	243 m	226 m	~200 m
	PM ₁₀	17.6 m	–	13.7 m	13 m	–
	NO ₂	52 m	46 m	44 m	42 m	38 m
Proportion of PM _{2.5} sampling points in compliance with the scenario limit value		> 99%	99%	94%	29%	–
Economic impact						
Annual cost of the optimal-EOP measures		€ 0	€ 3.3 bn	€ 5.6 bn	€ 7.0 bn	–
Benefit-cost ratio	VOLY ^a	–	10:1	7.5:1	6:1	–
	VLS ^b	–	28:1	21:1	19:1	–
Net effect on GDP ^c		–	0.26%	0.38%	0.44%	–
Health impact						
Premature mortality per year compared to 2020	PM _{2.5}	-56.3%	-73.1%	-77.9%	-79.5%	–
	NO ₂	-80.9%	-83.3%	-84.0%	-84.7%	–

Sources: IA Report; IA Study; Trinomics (2022), Study to support the impact assessment for a revision of the EU Ambient Air Quality Directives, [IA Support Study] and its Appendix [IA Support Study, Appendix].

^a Based on VOLY (value of a life year), i.e. damage cost calculations based on the potential years of life lost. Benefit = damage costs saved.

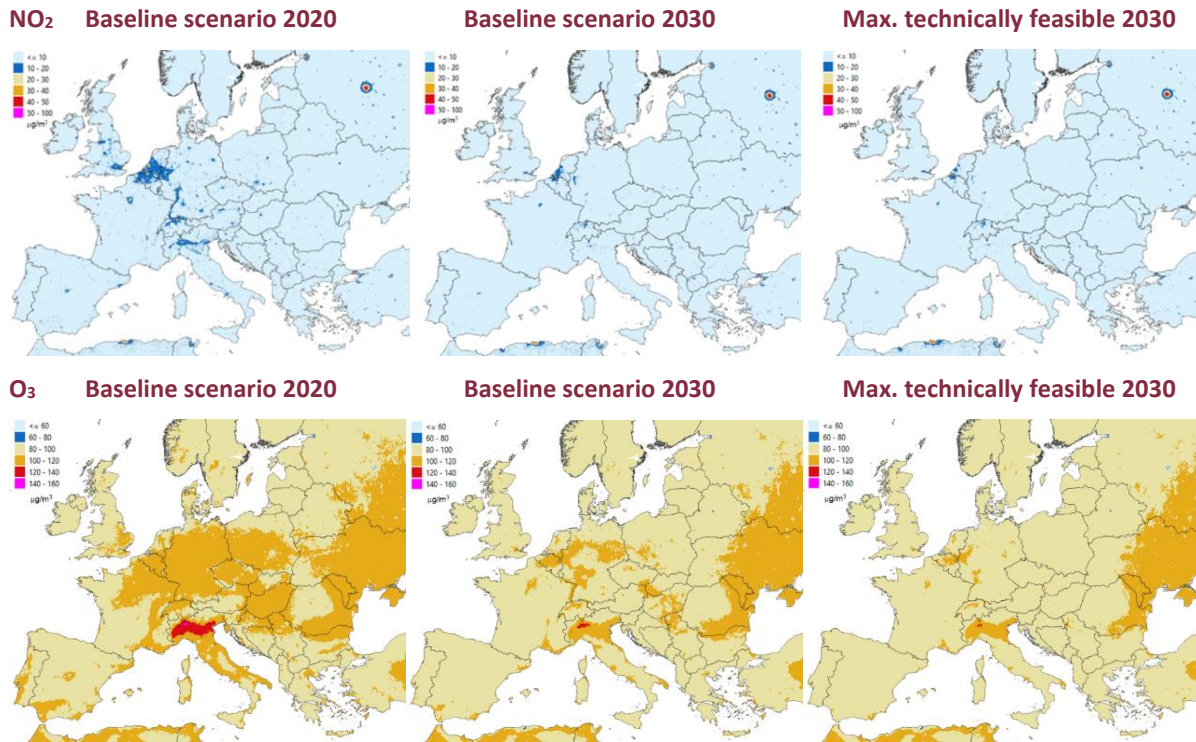
^b Based on VSL (value of statistical life), i.e. damage cost calculations based on how much people are willing to pay to reduce their risk of dying from health impairments. Benefit = damage costs saved.

^c Due to higher labour productivity through reduced absenteeism and better health.

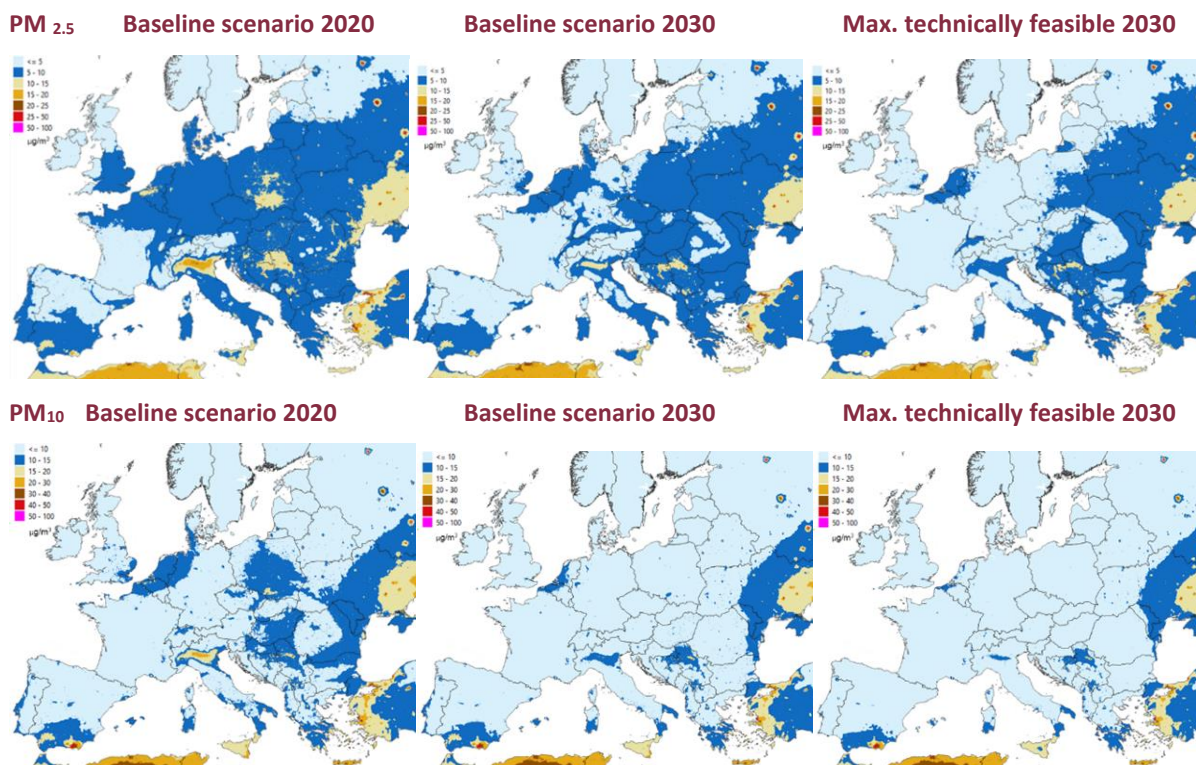
4.2.1 Regional distribution of pollution levels in the EU 2030

- ▶ With the baseline scenario, pollution levels in the regions of the EU are significantly reduced by 2030 [see Fig. 1].
- ▶ Furthermore, the maximum technically feasible EOP measures (MTF) only result in minor improvements [see Fig. 1].

Fig. 1: Regional distribution of pollution levels in the EU 2020/2030



Source: IA Report, p. 143 et seq.

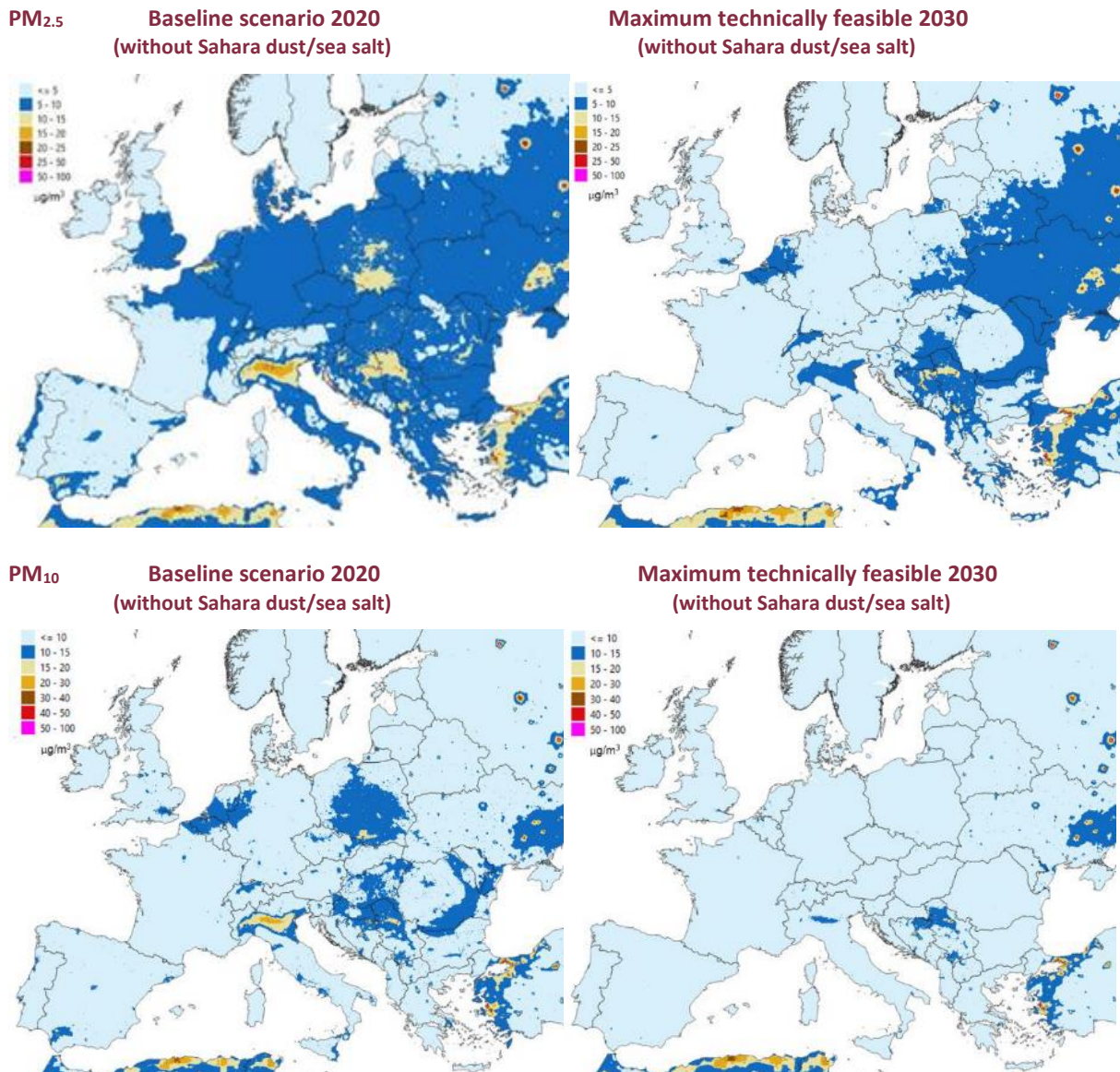


Source: IA Report, p. 137 et seq.

4.2.2 "Natural sources" of air pollutants (e.g. Sahara dust)

- ▶ "Emission contributions from natural sources" are pollutant emissions that are not caused directly or indirectly by human activity, e.g. volcanic eruptions, earthquakes, geothermal activities, wild-land fires, storms, sea spray (sea salt) or natural particles from dry regions (Sahara dust) [Art. 4 (35)].
- ▶ Member States may identify the following for a given year [Art. 16(2)]:
 - zones where limit value exceedances for a given pollutant are attributable to natural sources,
 - NUTS 1 territorial units where AEI exceedances are due to natural sources.
- ▶ After deducting the emission contributions from natural sources, the pollution concentration for particulate matter falls dramatically, especially in the south of Portugal, Spain, Italy and Greece [see Fig. 2 in comparison to Fig. 1].

Fig. 2: Regional distribution of pollution levels from non-natural sources in the EU 2020/2030

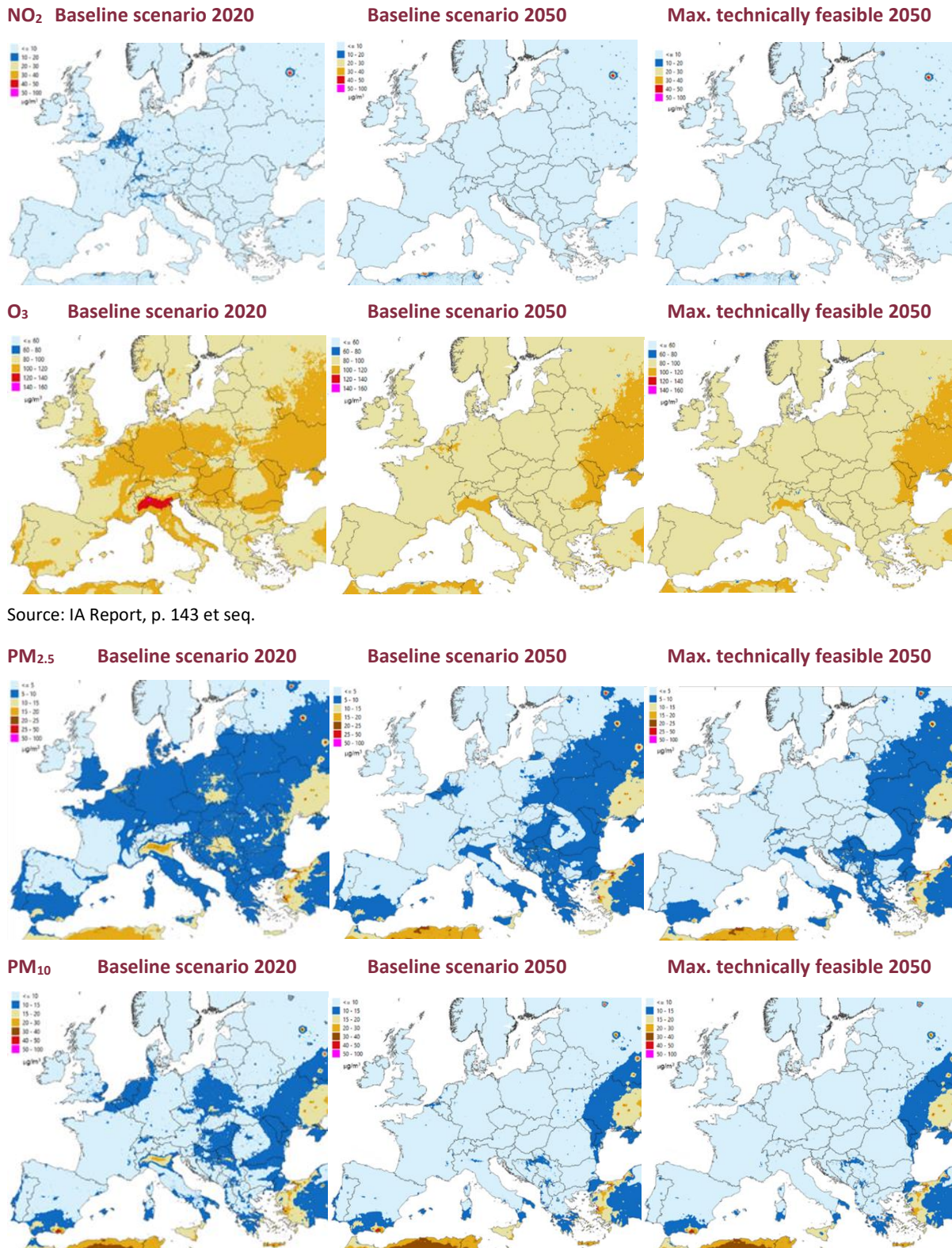


Source: IA Support Study Appendix, p. 78 et seq.

4.2.3 Regional distribution of pollution levels in the EU 2050

- ▶ With the baseline scenario, pollution levels in the regions of the EU are dramatically reduced by 2050 [see Fig. 3].
- ▶ Furthermore, the maximum technically feasible EOP measures (MTF) only result in minor improvements [see Fig. 3].

Fig. 3: Regional distribution of pollution levels in the EU 2020/2050



Source: IA Report, p. 143 et seq.

Source: IA Report, p. 137 et seq.

5 Air quality management

5.1 Zones below EU limit values and target values

- ▶ In zones where the levels of pollutants in ambient air – except for ozone – are already below the limit values, Member States must keep them below the limit values [Art. 12 (1)].
- ▶ In zones where ozone concentrations are already below the target value, Member States must keep them below the target value and "endeavour" to attain the long-term objectives [Annex I, Section 2, para. C] [Art. 12 (2)],
 - insofar as transboundary ozone pollution and meteorological conditions allow;
 - provided that the necessary measures do not cause "disproportionate cost".
- ▶ In NUTS-1 territorial units where the AEIs for PM_{2.5} and NO₂ are below the respective AEI targets, Member States must keep them below the AEI targets [Art. 12(3)].
- ▶ Member States must "endeavour to achieve and preserve" the "best ambient air quality" and a "high level of protection" for the environment and human health "in accordance with the air quality guidelines published by the WHO" and below the assessment thresholds [Art. 12 (4)].

5.2 Zones which exceed EU limit values and target values

- ▶ Member States must ensure that the levels of pollutants – except for ozone – in ambient air in their zones do not exceed the respective limit values [Art. 13 (1)].
- ▶ Member States must ensure compliance with the ozone target values throughout the zone with all "necessary measures not entailing disproportionate costs" [Art. 13 (2)].
- ▶ Member States must ensure that the average exposure reduction obligations for PM_{2.5} and NO₂ [Annex I, Section 5, para. B] are met in their NUTS 1 territorial units if they exceed the AEI targets [Art. 13(3)].
- ▶ Member States must ensure compliance with the "critical levels for the protection of vegetation and natural ecosystems" [Annex I, Section 3] [Art. 14 (1)].

5.3 Zones with adverse conditions for compliance with EU limit values and target values

- ▶ Member States may postpone the deadline for compliance with limit values applicable to PM₁₀, PM_{2.5} or NO₂ until 2035 at the latest in a zone where compliance cannot be achieved by the 2030 deadline due to [Art. 18 (1)]
 - "site-specific dispersion characteristics",
 - terrain-related ("orographic") boundary conditions,
 - adverse climatic conditions or
 - transboundary contributions to air pollution.
- ▶ A condition for postponing the deadline is that an air quality plan [Art. 19 (4) to (7)] be established for the relevant zone, which [Art. 18 (1)]
 - is supplemented by information on the pollutants concerned [Annex VIII, Section B],
 - demonstrates how
 - exceedance periods above the limit values are kept as short as possible,
 - the public – especially sensitive and vulnerable groups – will be informed about the consequences of the postponement for human health and the environment;
 - additional funds will be mobilised to accelerate the improvement of air quality.
- ▶ The Member State must communicate the air quality plan to the Commission, including information to assess whether the reason asserted for the postponement is satisfied [Art. 18 (2)].
- ▶ In the event of objections, the Commission may request the Member State to adapt the air quality plan or to submit a new plan [Art. 18 (2)].

6 Air quality plans and measures

- ▶ For zones where pollutant levels in ambient air exceed a limit value, Member States must establish air quality plans as soon as possible, but no later than two years after the calendar year in which the exceedance was recorded [Art. 19 (1)].
- ▶ The air quality plans must set out "appropriate measures" to achieve the relevant limit value as soon as possible and in any case no later than three years after the calendar year in which the exceedance was reported [Art. 19 (1)]. Such "air pollution abatement measures" are e.g. [Annex VIII Section B No. 2]
 - fitting incineration plants with emission filters;

- "congestion charges" (congestion-based tolls), differentiated parking fees and access restrictions for vehicles in urban areas (driving bans);
- the pricing of industrial emissions by way of taxes, fees and emissions trading.
- ▶ If the exceedance of limit values persists after the deadline, Member States must update the air quality plan and take additional and more effective measures in the following calendar year to keep the exceedance period as short as possible [Art. 19 (1)].
- ▶ In the event of exceedances of the ozone target value or the AEI reduction objectives in a NUTS 1 territorial unit, analogous requirements for air quality plans apply to the Member States – but with a maximum exceedance period of five years [Art. 19 (2) and (3)].
- ▶ If, from the third year after the entry into force of this Directive until the end of 2029, the levels of pollutants in a zone or NUTS 1 territorial unit exceed a limit value to be attained by 2030, the Member States must establish an air quality plan for the pollutant concerned, as soon as possible, and no later than two years after the calendar year in which the exceedance was recorded, in order to attain the limit values or the ozone target value by the deadline [Article 19 (4)].

7 Short-term action plans

- ▶ Where, in a given zone, there is a risk that the pollutant levels will exceed one or more alert thresholds [Annex I, Section 4; see above. Tab. 3], Member States must draw up short-term action plans with emergency measures to be taken in the short term in order to reduce the risk or duration of such an exceedance [Art. 20 (1)].
- ▶ Member States may provide for "effective measures" to control and, if necessary, "temporarily suspend activities" (bans) that contribute to the risk of exceeding the respective limit values, target values or alert thresholds [Art. 20 (2)].
- ▶ Depending on the share of the main pollution sources in the exceedances to be addressed, the short-term action plans will also consider measures on transport, construction works, industrial installations and the use of products and domestic heating [Art. 20 (2)].

8 Public information

- ▶ Member States must ensure that the public as well as relevant organisations such as environmental organisations, consumer organisations, organisations representing the interests of sensitive and vulnerable groups, health care bodies and industrial federations are informed in an adequate and timely manner about [Art. 22(1)]:
 - air quality [Annex IX, para. 1 and 3],
 - any postponement decisions [Art. 18 (1)],
 - air quality plans [Art. 19],
 - short-term action plans [Art. 20],
 - a summary of the effects of the exceedances.
- ▶ Member States must establish an air quality index for SO₂, NO₂, PM₁₀, PM_{2.5} and ozone, and make it available through a public source with an hourly update [Art. 22 (2)], and this index
 - will consider the WHO air quality guidelines and
 - will build on the air quality indices provided by the European Environment Agency.
- ▶ If an alert threshold or information threshold is exceeded [Annex I, Section 4; see Tab. 3], Member States must inform the public within a few hours at the latest via widespread media and communication channels [Art. 15 (3)].

9 Access to justice

- ▶ Member States must ensure that members of the "public concerned" have access to a review procedure before a court or other independent and impartial body established by law to challenge the substantive or procedural legality of any decision, act or omission in the air quality plans and short-term action plans, provided that one of the following conditions is met [Art. 27(1)]:
 - the members of the public -natural or legal persons and their associations, organisations or groups- have a "sufficient interest" [Art. 27 (1) (a)];
 - the members of the public maintain the "impairment of a right", insofar as the law of the Member State requires this as a precondition [Art. 27 (1) (b)].

- ▶ Member States must define "sufficient interest" and "impairment" in such a way that the members of the public concerned have wide access to justice.
- ▶ The interest of an NGO that is a member of the public concerned must be deemed "sufficient" for the purposes of Art. 27 (1) (a). Such organisations must also be deemed to have rights capable of being impaired for the purposes of Art. 27 (1) (b).

10 Compensation claims

- ▶ The Member States must ensure that [Art. 28 (1), (2), (5) and (6)]
 - natural persons who suffer damage to health due to a violation by the competent authorities of the requirements, in particular on air quality plans [Art. 19 (1)-(4)] and short-term action plans [Art. 20 (1) and (2)], are entitled to compensation [Art. 28 (1)];
 - NGOs working to protect human health or the environment and meeting all the requirements of national law may represent aggrieved natural persons and bring collective actions for compensation [Art. 28 (2); Directive (EU) 2020/1828, Art. 12 (1)];
 - the national rules and procedures on claims for compensation, including the burden of proof, do not make it impossible or excessively difficult to exercise the right to compensation [Art. 28 (5)];
 - the limitation periods for bringing actions for compensation [Art. 28 (6)]
 - are not less than five years,
 - do not commence until the violation has ceased and the person claiming compensation knows or can reasonably be expected to know that they have suffered damage as a result of the violation.
- ▶ Where a claim for compensation is supported by evidence showing that the violation is the "most plausible explanation" for the damage incurred, [Art. 28 (4)]
 - the causal link between the violation and the damage is presumed;
 - the respondent authority must be able to
 - rebut this presumption;
 - challenge the relevance of this evidence and the plausibility of the explanation put forward.

11 Penalties

- ▶ Member States must impose penalties on natural and legal persons who violate the national provisions to implement this Directive [Art. 29 (1)].
- ▶ The penalties must include fines,
 - proportionate to the turnover of the legal person or the income of the natural person who committed the violation [Art. 29 (2)];
 - the amount of which is calculated such as to effectively deprive the person responsible for the violation of the economic benefit derived from the violation [Art. 29 (3)];
 - that are proportionate, in the case of a violation committed by a legal person, to its annual turnover in the Member State concerned, taking into account, inter alia, the specificities of small and medium-sized enterprises (SMEs) [Art. 29 (4)].

B. Legal and political context

1 Legislative Procedure

26 October 2022: Adoption by the Commission

Open Adoption by the European Parliament and the Council, publication in the Official Journal of the European Union, entry into force

2 Options for Influencing the Political Process

Directorates General: DG Environment

Committees of the European Parliament: Environment, Public Health and Food Safety (ENVI, leading), Rapporteur: Javi Lopez (S&D, ES)

Decision-making mode in the Council: Qualified majority (acceptance by 55% of Member States which make up 65% of the EU population)

3 Formalities

Legislative competence:	Art. 191 et seq. TFEU
Form of legislative competence:	Shared competence (Art. 4 (2) TFEU)
Procedure:	Art. 294 TFEU (ordinary legislative procedure)

C. Assessment

1 Economic Impact Assessment

"As important as the air we breathe" – clean air really is an essential prerequisite for human existence and the environment. Air pollution, especially from industry, transport and the heating of buildings, caused serious and in some cases life-threatening damage to human health and the environment in Europe until well into the second half of the 20th century. Deaths due to the smog in large cities such as London in 1952, respiratory diseases especially among children caused by air pollution from smoking factory chimneys in the Ruhr and Bitterfeld, as well as the damaging effects of acid rain on forests and on the façades of medieval cathedrals, are only some of the most notable examples. Against this background, the measures taken by the EU and its Member States since the 1980s³ are a success story of European environmental policy. However, in view of the continuing problems, this is no reason to rest on our laurels, especially since scientific and technical progress highlights both the remaining need for action and new possibilities for improving air quality. At the same time, the existence of an often incalculable number of polluters, emission sources and air pollutants on the emission side, the complexity of the chemical, physical and biological processes involved, the heterogeneity of the conditions affecting ambient air quality, such as terrain, population density, economic structure and biodiversity, as well as the multitude of potentially affected interests, combine to form a major challenge when it comes to the specific design of legislative instruments. The EU's establishment of concrete air quality standards, and the measures to achieve them by the Member States, therefore requires that all relevant aspects are taken into account and interests are weighed against each other.

1.1 The role of the WHO air quality guidelines in setting EU air quality standards

In its legally non-binding, purely health-based WHO air quality guidelines 2021, the WHO reduced its long-term recommended WHO guideline levels (AQG Levels) for many air pollutants on the grounds that recent scientific studies provide "clear evidence of the damage to health from air pollution, at even lower concentrations than previously assumed"⁴. Even with low pollutant levels, a health risk could not be excluded⁵. This may be true from a health science perspective but both the WHO itself and the Commission rightly emphasise that health protection – whilst central – is only one of several aspects to be taken into account and carefully weighed against each other when setting concrete EU air quality standards. The question of the extent to which the WHO air quality guidelines should be incorporated into EU law does indeed require a comprehensive weighing up of interests. In addition to the health aspects analysed by the WHO – in all due compliance with its mandate – this must also take adequate account of the issues explicitly mentioned by the WHO itself and the Commission, such as "legal aspects, cost-benefit or cost-effectiveness, technological feasibility, infrastructural measures and socio-political considerations" [SWD(2022) 545, p. 292; WHO air quality guidelines, p. 174] and, for example, the influence of natural sources.

Against this background, the EU would do well not to simply adopt the WHO guideline levels one-to-one as EU limit values in the medium term, but to treat them merely as long-term target values. The fact that these WHO guideline levels, which are ideal in terms of health policy, can in practice only be achieved progressively over a longer period of time, as even the WHO itself indicates, is also shown by the WHO Interim Targets (ITs) published simultaneously by the WHO. These values, which are graded according to their level, are intended to provide the various regions and states with realistic medium-term targets for pollutant reduction, depending on the ambient air conditions. So far, the EU has largely based its specific limit values for ambient air pollution on the lowest –

³ Cf. e.g. Epiney, A. (2019), *Umweltrecht der Europäischen Union*, 4th Edn. 2019, p. 481 ff.; Proelß, A., *Grenzüberschreitende Luftverschmutzung, Schutz der Ozonschicht und Schutz des Weltraums*, in: Proelß, A. (Ed.), *Internationale Umweltpolitik*, 2nd Edn. 2022, p. 567 et seq.

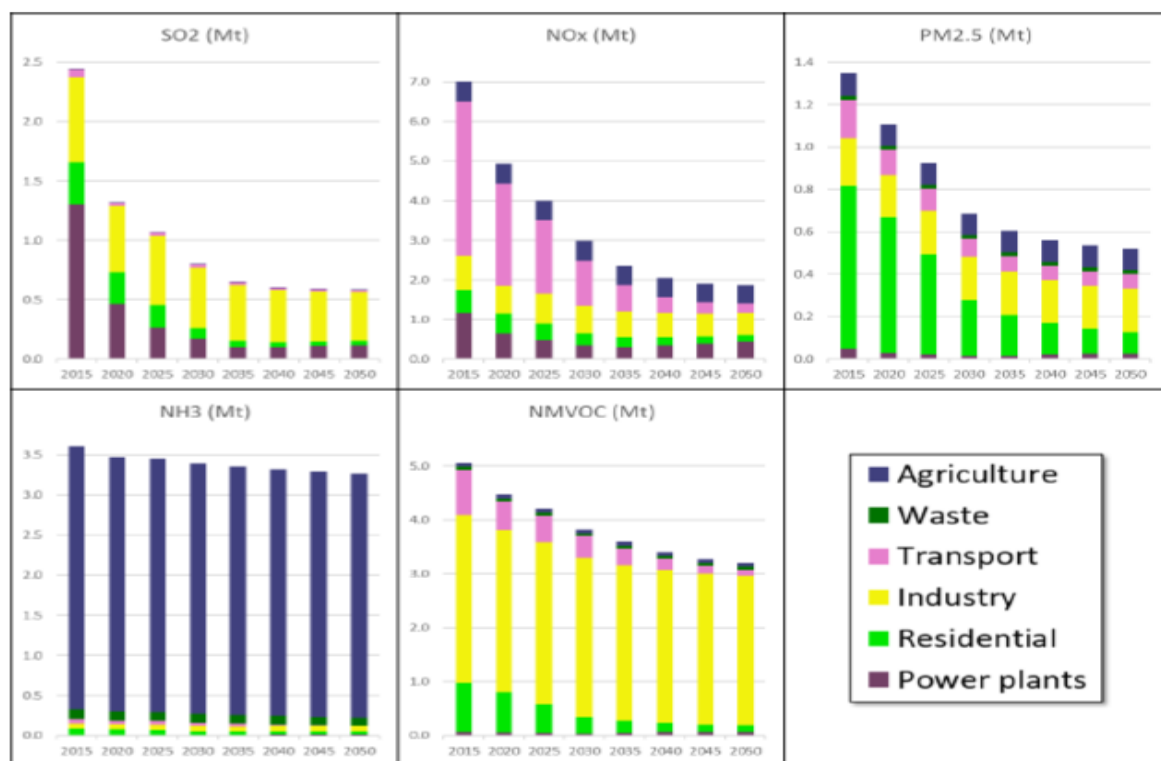
⁴ WHO News Release from 22. September 2021: [New WHO Global Air Quality Guidelines aim to save millions of lives from air pollution.](#)

⁵ WHO (2021), p. 60.

i.e. strictest – WHO interim target values. This tried and tested approach, which the Commission continues to apply in its proposal for a Directive, should not be abandoned without reason in the current EU legislative process. The demand from the European Parliament's ENVI-Rapporteur for "full and continuous alignment" with the "most up-to-date WHO air quality guidelines"⁶ must therefore be unequivocally rejected.

When establishing concrete EU air quality standards in the context of a comprehensive consideration of all relevant aspects, timing is also particularly crucial because the question of whether the EU limit values can largely be met, both technically and cost-effectively, by 2030 also depends on the extent to which the additional measures required for this in the Member States can be technically implemented without incurring prohibitively high costs. The stricter the chosen limit values the less will be the contribution which baseline-scenario measures already implemented [see Fig. 1] can be expected to make towards compliance with those limit values. The emission reductions that can be expected from these measures are already being generated, for example, due to the projected renewal of the vehicle fleet with low-emission new vehicles under the EURO 6d/VI standards⁷ [see [cepPolicyBrief 5/2023](#)] and the decrease in pollutant-emitting combustion processes as a result of the decarbonisation of industry [see [cepPolicyBrief 5/2022](#)] and the buildings sector [see [cepPolicyBrief 14/2022](#)].

Fig. 1: Sectoral emissions of the main air pollutants in the baseline scenario for the EU-27 (2015-2050)⁸



Source: IA Support Study, p. 57.

1.2 Setting targets and regular review of air quality standards

The aim of the proposed Air Quality Directive, to set a "zero-pollutant objective" in order to "progressively" improve air quality to levels that are no longer harmful to health and to contribute to a "toxic-free environment" by 2050 at the latest, is questionable for several reasons. In principle, a gradual improvement of air quality to a level that is no longer harmful to health is highly desirable. However, the terms "zero pollutant objective" and "toxic-free" suggest, on the one hand, that it is possible in the true sense of the word to reduce exposure to pollutants and air pollution to zero, and, on the other hand, that the level which is no longer harmful to health necessarily involves being toxic-free. However, this choice of terms does not take account of the existence of

⁶ European Parliament (2023), ENVI Committee, Report by Rapporteur Javi López of 5 July 2023, Amendment 3 to Recital 4, Amendment 44 to Article 3(2) and Explanatory Memorandum, p. 167.

⁷ AERIS Europe (2021), [EURO 7 Impact Assessment: The outlook for air quality compliance in the EU and the role of the road transport sector](#) [AERIS Study (2021)]. The AERIS Study was commissioned by the Association of European Automobile Manufacturers (ACEA).

⁸ The trends presented here do not yet fully take into account the possible positive effects of the revised Industrial Emissions Directive (IED) [see [cepPolicyBrief 18/2022](#)].

natural emission sources, especially in the case of particulate matter, NO_x, SO₂ and ozone.⁹ In addition, the term "zero pollutant target" suggests that even if man-made pollution levels were drastically reduced, this would still not be enough if low-threshold emissions from human activity were still present.

In this context, the requirements for the regular review of air quality standards are also relevant because they tie in with the scientific knowledge on air pollutants and their impact on health which is relevant for achieving the zero-pollutant target. In their proposed form, they put the Commission under increased pressure to justify itself to the European Parliament, the Council and the public if, on the basis of a comprehensive balancing of interests, it decides against proposing an "alignment" of the Air Quality Directive with future WHO air quality guidelines and the latest scientific findings. It would then expose itself to the accusation of not doing enough to achieve the zero-pollution target despite recent scientific findings. In this regard, it should also be noted that the WHO already assumes, based on the scientific evidence, that there are no lower thresholds below which a negative impact on human health can be ruled out. New evidence that strengthens this purely health-based assessment should not, however, necessarily trigger an automatic tightening of EU air quality standards because this requires a comprehensive weighing up of interests. But this is not, at least not explicitly, stated in the requirements for the regular review of EU air quality standards, which in this respect focus exclusively on the "effects on human health and the environment" [Art. 3 (2)]. Although the Commission is only required to present a legislative proposal to revise EU air quality standards if it deems it "appropriate" as a result of its review, it may nevertheless feel compelled by public pressure to do so in the five-year review cycle.

This is also relevant insofar as the Commission has to submit the first review report as early as the end of 2028 and every five years thereafter – or even more frequently if there is significant new scientific evidence. Both the deadline for the first report and the five-year cycle or more frequent reviews are inappropriate. Firstly, the new EU air quality standards will hardly have had any noticeable effects in five years' time, so that no statement can be made about their suitability at such an early stage. Secondly, there is a need for reliable underlying conditions over longer periods of time in order for longer-term investments by companies and households, in decarbonisation and other measures, to reduce emissions. The Commission should therefore have to submit its first review report in 2033 at the earliest, and then preferably every ten years.

1.3 EU limit values and target values

1.3.1 Air quality in the EU

Just as relevant as the outlook for 2050 when it comes to contextualising the proposed EU air quality standards, and in particular the pollutant limit values, is to take a look at the historical development of air quality and the air quality likely to be achieved under the current legal position at EU level and in the Member States – i.e. the baseline scenario – by the time the new EU limit values come into force in 2030 [see Fig. 2]. A further comparison of the ambient air quality values expected under the baseline scenario with the maximum ambient air quality values technically achievable (MTF scenario) indicates the range of air quality values that can be achieved by way of technical specifications at EU level. This range also includes the scenarios with cost-optimised technical air pollution control measures for complying with the envisaged limit value for PM_{2.5} – with tolerance for a certain number of exceedance areas if there is no cost-optimised solution for all areas.¹⁰ Improvements to ambient air quality going beyond the maximum technically achievable values, which may be necessary in exceedance areas or in particularly polluted locations (hotspots), would have to be undertaken at the local level resorting to behavioural changes (e.g. driving bans) and production restrictions, which usually entail higher costs.

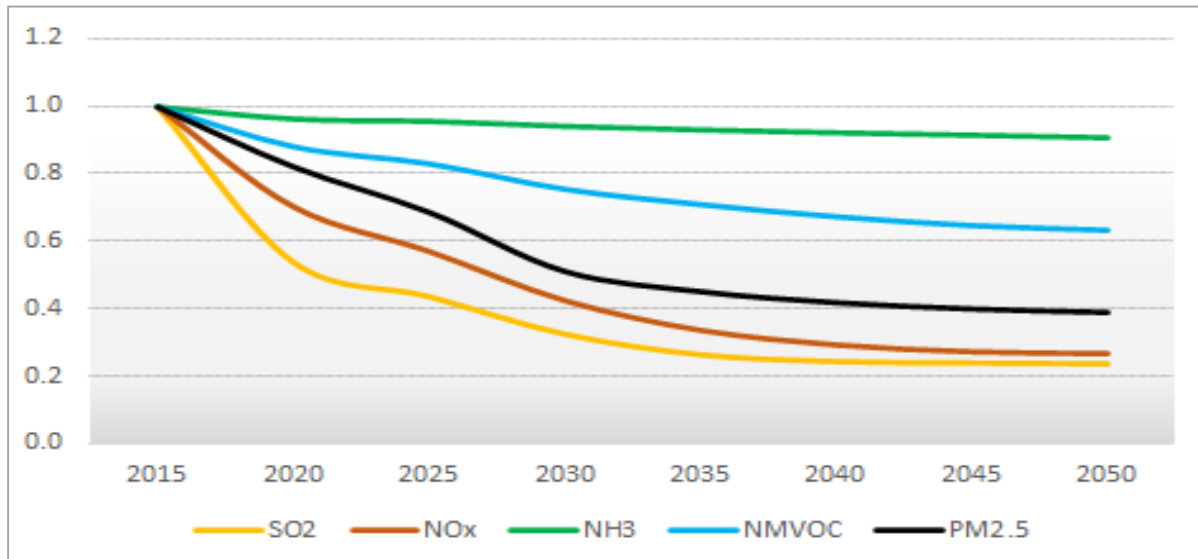
⁹ Umweltbundesamt – UBA (2022), [Natürliche Quellen von Luftschadstoffen](#).

¹⁰ The ambient levels of other pollutants are then derived from the optimised measures in each case (see SWD(2022) 545, p. 121)

(a) Historical development and baseline scenario

Significant improvements in air quality have been achieved in the EU in recent decades and the annual number of statistically projected "premature deaths" has been reduced by more than two thirds since the early 1990s.¹¹ This trend towards lower ambient concentrations will largely continue for the most significant air pollutants even without additional measures to reduce emissions (baseline scenario).

Fig. 2: Trends in air pollutant emissions in the EU-27 (baseline scenario)



Source: IA Report, Figure A5.1, p. 128.

Scientific studies¹² conclude that in the baseline scenario, extensive compliance with the applicable limit values for NO₂, PM_{2.5} and PM₁₀ will already be achieved by 2025. Around 99% of urban sampling points will then comply with the limit values for NO₂ and PM_{2.5}. None of the additional road transport measures studied – including a hypothetical zero exhaust emission standard – has any significant further impact on compliance with the NO₂ limit values.¹³ The current PM₁₀ limit values will not be met by more than 5% of the sampling points by 2035. There is a clear clustering of non-compliance in certain regions – in Poland and the Italian Po Valley, which hardly respond at all to the modelled additional Europe-wide reductions.

Overall, according to the Commission's impact assessment, the number of EU inhabitants living in areas where the current EU standard for PM_{2.5} is exceeded will fall to around 20,000 in 2030 [see. Tab. 4¹⁴] and to almost zero in 2050.¹⁵ In the case of NO₂, the figure is around 110,000 in 2030 and around 30,000 in 2050.¹⁶ In contrast, the WHO guideline levels for PM_{2.5} would still be exceeded for 330 million inhabitants in 2030 and 210 million in 2050. WHO guideline levels for PM₁₀ would be exceeded for 17.6 million inhabitants in 2030 and for 15.9 million in 2050. In the case of NO₂, this figure would be 52 million in 2030, but by 2050 all scenarios – including the baseline scenario – come close to the achieving the WHO guideline level, with 4 to 6 million inhabitants in exceedance areas.¹⁷ The figure for annual premature mortality decreases considerably compared to 2020 even with the baseline scenario: for PM_{2.5} by more than 56% and for NO₂ by more than 80% [see Tab 4].

However, interactions between pollutants also have to be taken into account when assessing the development of ambient air pollution. For example, reducing NO_x emissions from road traffic in city centres beyond the baseline scenario leads to increased ozone concentrations for instance in Brussels, London, Madrid and Paris, as the ozone-lowering effect of nitrogen oxide (NO) is also reduced. This conflict between the reduction of NO_x and O₃ in ambient air is also evident from the fact that it will be virtually impossible to comply with stricter ozone

¹¹ COM(2022) 542, p. 1.

¹² AERIS Study (2021).

¹³ Ibid., p. 6

¹⁴ Tab. 4 also lists the subsequent figures for 2030.

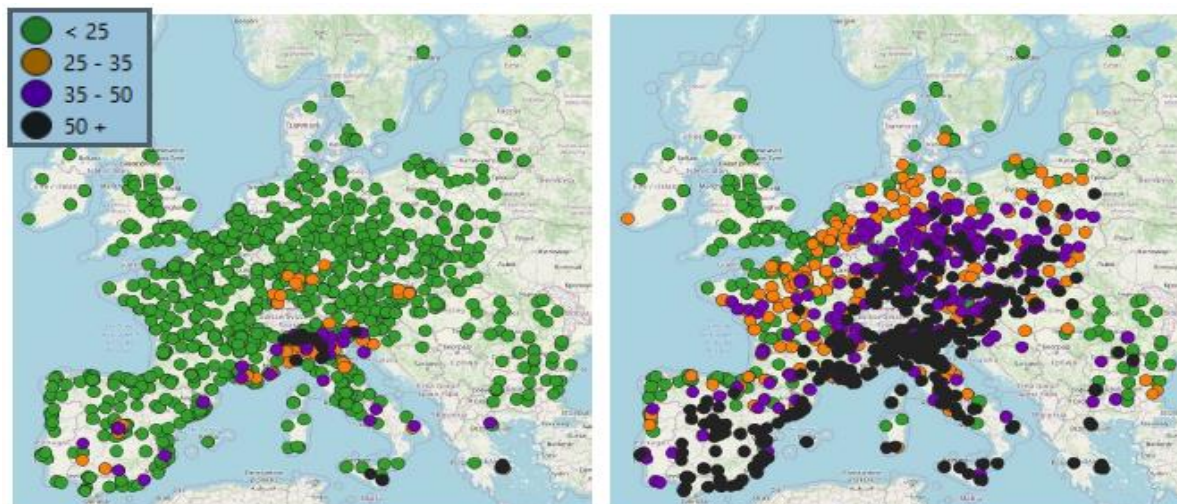
¹⁵ IA Support Study Appendix, p. 460.

¹⁶ IA Support Study, p. 152.

¹⁷ Ibid., p. 151.

values in the baseline scenario. Under the existing limit value, the number of exceedance days would only exceed the current limit of 25 days in a few regions in 2030 [see Fig. 3], whereas under the WHO guideline level it would be above 25 almost across the board, although only 3 days will be permitted.

Fig. 3: Ozone exceedance days in 2030 at 120 $\mu\text{g}/\text{m}^3$ versus 100 $\mu\text{g}/\text{m}^3$



Source: AERIS Study (2021), p. 52, Figure 34

(b) Maximum technically achievable air quality

The modelling shows that full compliance with a standard for $\text{PM}_{2.5}$ of $10 \mu\text{g}/\text{m}^3$ and – to an even greater extent – the WHO guideline level of $5 \mu\text{g}/\text{m}^3$ in 2030, is not possible without further non-technical or local measures, "the costs of which are uncertain but most likely very high"¹⁸ and are also not included in the Commission's benefit-cost calculation¹⁹. The situation is similar for PM_{10} ²⁰ and NO_2 ²¹. In the MTF scenario, around 200 million inhabitants live in areas where the WHO guideline levels for $\text{PM}_{2.5}$ are exceeded and 38 million inhabitants live in areas where NO_2 is exceeded. 19% of the O_3 sampling points are above the target value of $100 \mu\text{g}/\text{m}^3$.

In addition, natural sources pose a challenge to achieving the WHO guideline levels for particulate matter in several locations.²² It is evident however [Fig. 2] that even with the baseline scenario there will be a further significant reduction in most pollutants between 2030 and 2035. This means that limit values would be more achievable if postponed by five to ten years without recourse to further non-technical or local measures than if they were introduced as planned in 2030.

(c) "Cost-effective" air quality measures

The cost-effective response to limit values which correspond to a full alignment with WHO guideline levels (Scenario I-1, ENVI Report²³) or, as in the Commission proposal, a "closer alignment" (Scenario I-2), produces the following main results according to the model simulations:

In Scenario I-1, 71% of the sampling points are not expected to meet the corresponding air quality standards without additional effort at local level – and in many of these cases cannot meet them at all with technically feasible reductions only²⁴; in Scenario I-2, 6% of the sampling points are not expected to meet the less stringent air quality standards without local measures²⁵ [see Tab. 4, line 12].

¹⁸ IA Support Study Appendix, p. 463.

¹⁹ IA Report, p. 163.

²⁰ IA Support Study Appendix, p. 474.

²¹ Ibid., p. 486.

²² Ibid., p. 463 and 473.

²³ European Parliament (2023), ENVI Committee, Report by Rapporteur Javi López of 5 July 2023, Amendment 3 to Recital 4, Amendment 44 to Article 3(2) and Explanatory Memorandum, p. 167.

²⁴ IA Report Summary, p. 2.

²⁵ Ibid.

PM_{2.5}

In 2030, 11 million inhabitants live in areas which exceed the limit value in the Commission proposal of 10 µg/m³; 226 million inhabitants live in areas which exceed the limit value of 5 µg/m³ (WHO guideline level) [see Tab. 4, line 5]. There is almost no difference in the decline in premature mortality between Scenario I-1 and I-2 [see Tab. 4, line 17]. In 2050, 8 million inhabitants live in areas that exceed the Commission's limit value, and 108 million in areas that exceed the WHO guideline level.²⁶

PM₁₀

In 2030, 2.7 million inhabitants live in areas that exceed the Commission's proposed limit value of 20 µg/m³ [see Tab. 4, line 6]. Therefore, according to the Commission, "moderate" efforts would be required at the local level to achieve this goal. 13.7 million inhabitants live in areas that exceed the WHO guideline level of 15 µg/m³ [see Tab. 4, line 6]. The figures for 2050 are similar: 2.85 million inhabitants live in areas that exceed the Commission's limit value, and 13.5 million in areas that exceed the WHO guideline level.²⁷

NO₂

In the case of premature mortality, optimisation hardly changes the baseline scenario [see Tab. 4, line 18]. In fact, for NO₂ there is hardly any difference between the baseline scenario and the MTF scenario. Almost all possible reductions in premature mortality from NO_x emissions are already achieved in the baseline scenario.

1.3.2 Cost-benefit analysis

The costs and benefits estimated in the Commission's impact assessment, which are used to calculate the benefit-cost ratio, are questionable in terms of methodology because the costs side only includes the optimal EOP measures, which do not always lead to compliance with the limit values. Local measures however – such as enforced behavioural changes (e.g. driving bans), production restrictions and special requirements – can increase costs considerably. This applies most notably in Scenario I-1, where in 2030 71% of the sampling points would not comply with the EU limit values aligned with the WHO guideline levels, and additional local measures would therefore be required over a wide area. This effect is not as significant in the other two scenarios.

1.3.3 Setting EU limit values

Against this background, it is appropriate that the Commission sees the WHO guideline levels only as long-term targets for 2050 and sticks, as before, to setting the most stringent WHO interim targets in each case as medium-term EU limit values. Demands for one-to-one adoption of the WHO guideline levels as EU limit values in the medium term must be strictly rejected because, for the most part, these would not be achieved with cost-effective measures, if at all, and not even with purely technical measures in many cases. Since a large number of sampling points would then exceed these EU limit values, these would only be achievable – if at all – at disproportionate cost or by means of drastic restrictions on public life or personal freedom. There would be a high level of public pressure to do everything possible to avert the remaining health risks of air pollution if the strict EU limit values are exceeded, without considering the cost and proportionality, or potential negative impacts on health due to lost income, if economic activities have to be curtailed or industries move out of certain exceedance areas. Consequently, the Commission does well to weigh socio-economic considerations against improved health protection and – in contrast to the European Parliament's ENVI Committee²⁸ – not to aim for full alignment of the EU limit values with the WHO guideline levels.

However, the time aspect is also important in assessing the Commission's proposal to set limit values because the question is whether it is appropriate or proportionate for the new EU limit values to be met as early as 2030. As we have seen, even in the baseline scenario, without stricter EU limit values, ambient air pollution falls continuously up to 2050. Most notably, the measures for decarbonising the industrial and building sectors as well as the EURO 6/VI standards for cars and commercial vehicles do not take full effect until the mid-2030s, so the proposed EU limit values – especially for NO_x – may already be almost entirely achieved by way of the baseline scenario alone, or could at least be achieved more easily with less draconian measures. Postponing the compliance obligation by five to ten years would, from 2030 onwards therefore, invalidate the need for any costly additional reduction measures and any alarmism about widespread limit value exceedances.

²⁶ IA Support Study Appendix, p. 461.

²⁷ Ibid., p. 474.

²⁸ European Parliament (2023), ENVI Committee, Report by Rapporteur Javi López of 5 July 2023, Amendment 3 to Recital 4, Amendment 44 to Article 3(2) and Explanatory Memorandum, p. 167.

In addition, uncertainty about a possible threat of production restrictions or the temporary suspension of building permits in an exceedance area, for example, could jeopardise decarbonisation projects associated with a long-term reduction in pollutant emissions. In order to implement additional ambient air pollution reduction measures in the public and private sectors, sufficient lead time is required. Therefore, application of the new EU limit values should be postponed to 2035 for reasons of cost efficiency and to minimise social and economic turbulence.

1.3.4 Setting EU targets

Why the Commission's proposal for the 8-hour ozone target value should be based not on the strictest WHO interim target but on the even stricter WHO guideline levels, in contrast to the EU limit values for the other pollutants, is incomprehensible because the Commission's impact assessment support study points out that controlling ozone concentrations is complex and challenging – and it is questionable whether very ambitious standards for ozone would be feasible in all locations.²⁹ The specific chemistry of ozone formation in connection with meteorological conditions results in pronounced local and annual fluctuations.³⁰ Rising temperatures due to climate change, inversions and precursors moving over long distances are problematic.³¹ In addition, tightening the ozone target value hardly results in any health improvements compared to the baseline scenario. For example, annual premature deaths due to ozone decrease by only 5% in 2030 with an ozone target value of 100 µg/m³ and by only 8% in 2050, compared to an unchanged target value of 120 µg/m³.³² The reduction in the number of days allowed to exceed the limit value from 25 to 18 days is also inappropriate in view of the often prolonged and recurring inversion weather conditions.

The Air Quality Directives currently in force also specify target values for benzene and the metals arsenic, lead, cadmium and nickel. Contrary to the Commission proposal, these should be maintained for arsenic, cadmium and nickel, as their ambient concentrations can be affected by natural sources, unstable meteorological conditions and the local geographical situation³³ and they cannot therefore comply at individual sampling points. A target value is therefore more appropriate.

1.4 Public information

Providing comprehensive and detailed information to the public about air quality in the respective area is crucial for raising awareness among the population and decision-makers. It can also create an appreciation for measures that are proportionate and create sufficient net benefits. However, care must be taken to ensure that the publication of information does not give rise to alarmism. This firstly requires EU limit values, target values and alert thresholds to be established in such a way that they can be largely complied with by taking proportionate measures. Secondly, the figures must be put in the right perspective. Most notably, in order to avoid misunderstandings about the significance of the WHO air quality guidelines in relation to the EU air quality standards, it is not helpful to categorise the national air quality indices in such a way that they take account of the current WHO air quality guidelines. Instead, they should be guided solely by the applicable EU limit values and target values because – if the EU legislators have made their decision after careful consideration of the health benefits and the associated socio-economic costs – only these constitute democratically legitimised and proportionate levels of socially tolerable ambient air pollution.

1.5 Air quality management

1.5.1 Areas below EU limit values and target values

In contrast to the requirements for meeting the ozone target values, the requirements for meeting the limit values applicable to other air pollutants are not subject to the restriction that they are only to be met if the necessary measures do not cause "disproportionately high costs". In order to satisfy the universal principle of proportionality, this addition should also be explicitly applied to EU limit values. The requirements under Art. 12 (4) for Member States to strive for "best ambient air quality" and a "high level of protection", "in line with the air quality guidelines published by the WHO" are too vague and ultimately only create legal uncertainty. They will also be in conflict with the democratically established EU limit values if WHO guideline levels, over which the

²⁹ IA Support Study, p. 199.

³⁰ IA Report, p. 241.

³¹ Ibid., p. 36.

³² Ibid. p. 151.

³³ BDI (2022), [Stellungnahme EU-Richtlinie über Luftqualität](#), p. 11.

EU legislator has no influence, are tightened in the future. These requirements will then give interest groups the opportunity to exert disproportionate public pressure on Member States and their local administrations which could lead to over-delivery on the pollution reduction obligations established by the limit values and target values, without consideration for the social and economic costs. This paragraph should therefore be deleted.

1.5.2 Areas above EU limit values and target values

It is inappropriate as well as incomprehensible that the existing rule, of only having to take all "necessary measures that do not give rise to disproportionate costs" to reduce the average exposure to PM_{2.5} and NO₂ [previous Art. 15 (1)], has been deleted [new Art. 13 (3)], although it still exists for the ozone target values [Art. 13 (2)]. Without the explicit exclusion of disproportionate costs, this reduction obligation may be a financial "bottomless pit" with little benefit to health. The principle of proportionality should be expressly enshrined in all articles involving compliance or reduction obligations in relation to EU air quality standards.

1.5.3 Areas with adverse conditions for compliance with EU limit values and target values

The possibility of postponing the compliance deadline for the limit values applicable to PM₁₀ and PM_{2.5} or NO₂ until 2035 is appropriate in order to be able to take "adverse conditions" into account [Art. 18 (1)]. And this should remain possible for five years, even if the start of the application of the EU limit values is postponed. Fine dust emissions indirectly attributable to human activities as a result of dust drift due to interventions in the landscape – such as agriculture, quarrying, gravel extraction, open-cast mining, recultivation, construction activities with exposure of areas and embankments, renaturation and the creation of embankments as well as sand beaches at artificial bodies of water – should be equated to those from natural sources, especially in the case of renaturation or recultivation in the interest of environmental protection and climate change mitigation.³⁴

1.6 Air quality plans and action plans

In principle, it is appropriate to draw up an air quality plan in areas that exceed the respective EU limit values or target values as this should help to ensure that the exceedance period is as short as possible. However, – assuming the Directive enters into force in 2024 – an air quality plan for the pollutant in question will have to be established within two calendar years in all exceedance areas from as early as 2026, which will result in a very large administrative burden almost everywhere. De facto, it would also mean bringing forward the obligation to take additional measures which would give rise to costs – and irrespective of whether, with the baseline scenario, it can be assumed that pollutants will continue to decrease until the compliance deadline without the additional measures. Therefore, the obligation to establish air quality plans should only apply from the date on which the obligation to comply with EU limit values and target values begins.

The requirements to include measures on transport, construction works, industrial installations and the use of products and domestic heating in the short-term action plans risks leading to disproportionate intervention in economic and social life due to public pressure. This applies in particular against the background that Member States can provide for the temporary suspension of activities – e.g. in the form of driving bans or production restrictions – that contribute to the risk of exceeding the respective EU limit values or target values. The necessary level of proportionality and cost-effectiveness must therefore be ensured here too.

2 Legal Assessment

2.1 Legislative Competence

Unproblematic. The EU can adopt legislation to protect the environment including measures to combat air pollution [Art. 191 et seq. TFEU].

2.2 Subsidiarity

Unproblematic. Air pollution is a cross-border problem which requires EU-wide measures in order to combat it.

³⁴ BDI (2022), [Stellungnahme EU-Richtlinie über Luftqualität](#), p. 12.

D. Conclusion

Clean air is an essential prerequisite for human existence and for the environment. Air pollution, especially from industry, transport and the heating of buildings, caused serious and in some cases life-threatening damage to human health and the environment in Europe until well into the second half of the 20th century. Against this background, the clean air measures taken by the EU and its Member States since the 1980s have been a success story of European environmental policy. As a result, air quality in the EU will continue to improve significantly simply because of the measures already in place. However, when considering the extent to which the 2021 update of the WHO air quality guidelines – involving reductions in the long-term recommended WHO guideline levels for many air pollutants – should be incorporated into EU law, due consideration must be given, not just to health aspects, on which the WHO rightly focuses in accordance with its mandate, but also to other societal factors. These include "legal aspects, cost-benefit or cost-effectiveness, technological feasibility, infrastructural measures and socio-political considerations" [SWD(2022) 545, p. 292; WHO air quality guidelines, p. 174] or, for example, the influence of natural sources.

The level of the limit values proposed by the Commission is a balanced compromise between health protection and other important aspects of social life. However, the full alignment of EU limit values with current WHO guidelines, called for by the ENVI report, cannot for the most part be achieved through cost-effective measures, if at all, and not even with purely technical measures. It would therefore lead to disproportionate costs or restrictions on public life and should therefore be rejected. This also applies to the Commission's proposed ozone target values for the same reasons.

The application of the new limit values should be postponed to 2035 because the decarbonisation of industry and buildings as well as the EURO 6/VI standards for motor vehicles will not take full effect until the mid-2030s. In this case, limit values would already be almost entirely achieved with the baseline scenario, or at least be achieved more easily with less draconian additional measures which would avoid costly additional reduction measures and potential alarmism in the case of widespread exceedance of limit values. Extending the deadline by five years, in areas with adverse conditions, is appropriate. The obligation to establish an air quality plan within two calendar years after the limit values applicable from 2030 have been exceeded, possibly from 2026, would de facto bring forward the obligation to take additional measures and lead to an unnecessary administrative burden almost everywhere in the EU. If activities can be temporarily suspended, proportionality must be respected.

The setting of a "zero-pollutant objective" for air quality in the EU, and the term "toxic-free" suggest that it is possible to reduce ambient air pollution to zero, and that the level harmless to health necessarily involves being pollutant free. This ignores natural sources of emissions. The review requirements put the Commission under unnecessary pressure to justify its decision to refrain, after a comprehensive balancing of interests, from proposing an "alignment" of air quality standards with future WHO guidelines and new scientific evidence. The national air quality indices should not have to be categorised by reference to the respective current WHO recommendations, but should only be based on the valid EU limit values and target values because only these – if determined after careful consideration of the benefits and socio-economic costs – represent proportionate levels of air pollution.