

# Revision of the EU Ambient Air Quality Directives

## SUMMARY

Air pollution is a serious issue with tangible negative effects on health, the environment, economies and societies. The EU has developed a policy on air quality to help Member States reduce air polluting emissions. Although emissions have been falling for the past two decades, exceedances for certain harmful pollutants are still widespread and persistent. A 2019 Commission fitness check of the EU Ambient Air Quality Directives (AAQDs), which are central to EU air quality policy, shows that the two directives 'have not ensured that sufficient action is taken throughout the EU to meet air quality standards and keep exceedances as short as possible, resulting in a mixed picture'.

The identified deficiencies require a revision of the AAQDs, which also need to be adapted to the priorities of the European Green Deal and in particular to its zero pollution pillar. The European Parliament, which scrutinised implementation of the AAQDs in 2021, will be a co-legislator in this revision. This briefing presents findings on the implementation of the directives and thus aims to inform parliamentary decision-making.

## Background

Outdoor (ambient) air pollution is caused by human activity (such as transport, industry, agriculture, waste management, households) and natural events (such as volcano eruptions and wild-land fires). Poor air quality has direct negative effects on health, especially for people living in urban areas. According to the [World Health Organization](#) (WHO), outdoor air pollution is one of the world's 'greatest environmental risks to human health'. In particular, exposure to high levels of air pollution can increase the risk of respiratory infections, heart disease and lung cancer. Vulnerable groups, such as children, older people and those with pre-existing health conditions tend to be more susceptible to the adverse effects of air pollution. The WHO [notes](#) that the most harmful pollutant for health – fine particulate matter (PM<sub>2.5</sub>) – is closely associated with excessive premature mortality, as it penetrates deep into the lung passageways. The European Environment Agency (EEA) [estimates](#) that in 2019 307 000 citizens (EU-27) have lost their lives prematurely due to long-term exposure to PM<sub>2.5</sub> alone. In this context, the EEA warns that, 'despite improvements, air pollution is still a major health concern for Europeans'. In addition, poor ambient air quality has direct adverse effects on the environment (by damaging vegetation and ecosystems) and the climate system (by enhancing climate change) as well as indirect but tangible adverse effects on societies and economies at large.

Against the above backdrop of negative impacts and considering the cross-border nature of air pollution, the EU has designed a policy on air quality, which employs legal regulation as the main policy instrument. The EU Ambient Air Quality Directives (AAQDs) are central to this policy. The European Commission [notes](#) that since 2005 (and before that), air polluting emissions in the EU 'have decreased significantly thanks to EU and national legislation' and that the registered GDP growth is decoupled from the reduction of air pollution.<sup>1</sup> Despite this success, the implementation of the EU legislation on air quality, and in particular of the two AAQDs, remains a challenge.



# Ambient Air Quality Directives: An essential pillar of EU air quality policy

## EU policy on air quality and its three pillars

The EU has a decades-long history in regulating the quality of ambient air. The current EU policy on air quality has three pillars, described briefly below.

- **The first pillar** comprises [Directive 2008/50/EC](#) on ambient air quality and cleaner air for Europe adopted in 2008 (the 2008 AAQ Directive) and [Directive 2004/107/EC](#) on arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air adopted in 2004 (the 2004 AAQ Directive). The two directives establish standards (values) for air quality and air pollution measurement. When Member States exceed the relevant values, they are required to draw up air quality plans (AQPs) setting out measures to tackle air pollution. Both directives are presented in detail below.
- **The second pillar** is underpinned by [Directive \(EU\) 2016/2284](#) on the reduction of national emissions of certain atmospheric pollutants adopted in 2016 (the NEC Directive). It establishes national emission reduction commitments for five main pollutants, namely, PM<sub>2.5</sub>, sulphur dioxide (SO<sub>2</sub>), oxides of nitrogen (NO<sub>x</sub>), non-methane volatile organic compounds (NMVOCs) and ammonia (NH<sub>3</sub>), to be achieved by 2020 and 2030 respectively<sup>2</sup>. The NEC Directive requires Member States to draw up national air pollution control programmes aimed at contributing to the successful implementation of AQPs established under the first pillar.
- **The third pillar** groups several EU legislative acts regulating air pollution at its source in sectors such as:
  - **industry**, with legislation covering [Directive 2010/75/EU](#) on industrial emissions (IED) adopted in 2010 (currently under [revision](#)<sup>3</sup>); [Directive \(EU\) 2015/2193](#) on the limitation of emissions of certain pollutants into the air from medium combustion plants (the MCP Directive) adopted in 2015; [Directive 2009/125/EC](#) establishing a framework for the setting of ecodesign requirements for energy-related products (recast) adopted in 2009 (the Ecodesign Directive, currently under [revision](#)<sup>4</sup>); and,
  - **transport**, with legislation covering, among others, the environmental performance aspects of the EU type-approval legislation, for example, [Regulation \(EC\) No 715/2007](#) on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6 standards), adopted in 2007, and [Regulation \(EC\) No 595/2009](#) on type-approval of motor vehicles and engines with respect to emissions from heavy duty vehicles (Euro VI standards) and on access to vehicle repair and maintenance information adopted in 2009. The Commission is expected to submit a proposal for post-Euro 6/M emission standards in the autumn of 2022.

## The Ambient Air Quality Directives

Together, the AAQDs set the following four objectives:

- **to define common methods for air quality monitoring and assessment** – the directives harmonise methods and criteria for air quality assessment in all Member States in a comparable and reliable manner. In particular, Member States must establish a network of measurement stations and sampling points based on common criteria as regards the determination of the minimum number of sampling points, data quality, unacceptable uncertainty in monitoring and modelling, and as regards microscale and microscale siting of sampling points. In addition, every Member State must establish air quality zones and/or agglomerations on its territory. It must also monitor and assess the concentration of air pollutants in all zones and/or agglomerations.<sup>5</sup> Furthermore, Member States must classify their zones and/or agglomerations according to certain assessment

thresholds. When assessing air quality, Member States must use reference measurement methods based on international standards or equivalent methods and must ensure the accuracy of measurements.

- **to set standards to be achieved across the EU** –to allow for assessment of the data collected via air quality monitoring, the directives have set standards for 13 air pollutants. These are: SO<sub>2</sub>, nitrogen dioxide (NO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), ozone (O<sub>3</sub>), benzene (C<sub>6</sub>H<sub>6</sub>), lead (Pb), carbon monoxide (CO), arsenic (As), cadmium (Cd), mercury (Hg), nickel (Ni), and benzo(a)pyrene (C<sub>20</sub>H<sub>12</sub> or simply BaP). The standards are expressed in reference values, such as: limit values (for PM, SO<sub>2</sub>, NO<sub>2</sub>, Pb, Co and C<sub>6</sub>H<sub>6</sub>), target values (for O<sub>3</sub>, As, Cd, Ni and BaP), information threshold (for O<sub>3</sub>), alert threshold (for SO<sub>2</sub>, NO<sub>2</sub> and O<sub>3</sub>), exposure concentration obligation (for PM<sub>2.5</sub>), national exposure reduction target (for PM<sub>2.5</sub>), critical level (SO<sub>2</sub> and NO<sub>x</sub>) and long-term objective (for O<sub>3</sub>). Exceedances may be allowed over a given period for some of these pollutants. For example, the daily limit value for PM<sub>10</sub> set at 50 µg/m<sup>3</sup> can be exceeded up to 35 times per year. When compliance is assessed, pollution from natural sources (e.g. volcanic eruptions, transport of natural particles from dry regions, wild-land fires) may be deducted from the registered concentrations.
- **to ensure that air quality information is made available to the public** – Member States must report to the Commission and inform the general public of the results of the air quality assessments they make annually. They must also provide up-to-date information on air pollution. Furthermore, Member States must communicate information on their AQPs (explained below) and programmes; and
- **to maintain good air quality and improve it where it is not good enough** – in case a given zone/agglomeration on their territory does not meet the standards for a certain pollutant, Member States must adopt an AQP and/or take appropriate measures (depending on the pollutant). The plan must contain measures aimed at keeping the exceedance period in that zone/agglomeration as short as possible. Given that Member States face different local conditions, they can choose what measures to implement to achieve the standards. Furthermore, air quality plans need to first identify the main sources emitting the pollutant(s) and outline the reasons for the exceedances, and second, based on this information, determine the pollution reduction measures. These considerations need to be factored in by the competent authorities (CAs) to ensure exceedance periods are kept as short as possible, and not delayed unduly. Member States must report their AQPs to the Commission no later than two years after the end of the year when the first exceedance occurred. AQPs are thus instrumental in ensuring that air pollution is avoided, reduced or prevented.

The Commission is expected to submit legislative proposals to revise the AAQDs on 26 October 2022 as part of a 'zero pollution' package. This revision is one of the actions underpinning the Commission's [EU action plan: towards a zero pollution for air, water and soil](#) (zero pollution action plan) from May 2021. Following the ambition of the plan, which is an essential pillar of the [European Green Deal](#), by 2050, pollution should be reduced to levels no longer considered harmful to health and natural ecosystems.

The next sections of this briefing present findings on the implementation of the AAQDs.

## European Commission

In November 2019, the Commission published a [fitness check](#) of the AAQDs supported by the findings of an external [study](#) (prepared at the Commission's request) and several stakeholder consultation activities (such as an online [public consultation](#) open for feedback between May and July 2018 and meetings with stakeholders). The implementation of the directives was assessed against the standard set of ex-post evaluation criteria established by the [EU Better Regulation agenda](#), namely relevance, effectiveness, efficiency, coherence and EU added value. The fitness check covers implementation between 2008 and 2018. Its main findings are presented below.

The Commission finds that the 13 pollutants covered by the standards laid down by the AAQDs are still **relevant** to current needs, given that state-of-the-art scientific knowledge reconfirms their harmful effects on health and the environment. In particular, although the EU standards for air quality are instrumental in decreasing concentrations and reducing exceedance levels, the Commission notes that EU citizens continue to be exposed to 'widespread and persistent excess concentrations' of PM, NO<sub>2</sub>, BaP and O<sub>3</sub>, which shows the relevance of the two directives to current needs. For pollutants not yet covered by EU standards, such as black carbon and ultrafine particulate matter (PM<sub>0.1</sub>), the Commission considers that existing knowledge on their negative effects on health is still inconclusive and hence, there is no explicit need to set such standards; however, stakeholders appear to support the setting of EU standards for these pollutants.

A relevance-related problem affecting the design of the AAQDs is that, as per 2019 when the fitness check was published, the directives set less demanding standards for some pollutants than what was recommended by the WHO in 2005.<sup>6</sup> This holds true for pollutants, such as SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>, C<sub>6</sub>H<sub>6</sub> and BaP, which science associates with serious adverse health effects at levels lower than those currently defined at EU level. In September 2021, the WHO published updated recommendations,<sup>7</sup> and if compared to the latest WHO standards, the current EU standards are not just 'less stringent' but far less stringent than the latest WHO ones, especially as regards particulate matter (both PM<sub>10</sub> and PM<sub>2.5</sub>) and NO<sub>2</sub>. The widening gap between WHO and EU values for PM<sub>2.5</sub> is of particular concern because, according to the WHO's scientific assessment,<sup>8</sup> there are no observed safe levels for this pollutant. Furthermore, the AAQDs have not yet set a short-term standard for PM<sub>2.5</sub> and allow for frequent exceedances of some standards (e.g. the daily limit value for PM<sub>10</sub>).

The Commission has assessed the difference between the EU standards and the WHO guidelines as an issue but also noted a dichotomy. In particular, while for a number of air pollutants the air quality standards established by the AAQDs are less stringent than scientific recommendations (i.e. the WHO guidelines) and public expectations, the persistent exceedances of the current air quality standards for at least one pollutant in a majority of Member States point to substantial socio-economic and/or political challenges in reaching the current standards. Hence, the introduction of more stringent EU standards aligned with state-of-the-art scientific evidence would be even more difficult to achieve by a number of Member States. Nevertheless, a 'closer alignment' of the EU standards with the latest WHO standards is expected to be one of the key elements of the revision of the AAQDs, as specified by the Commission in the [inception impact assessment roadmap](#) of the revision.

The difference between the EU air quality standards and the WHO air quality guidelines

Firstly, the air quality reference values for a number of pollutants, defined by the WHO, are intended as policy guidance only, while the EU standards, as defined by the AAQDs, are mandatory. Secondly, the WHO guidelines are based solely on health considerations, while the EU standards reflect broader considerations, such as technical feasibility and the political, economic and social aspects of achieving these standards. This explains why, for certain pollutants, the EU co-legislators opted for weaker standards than those recommended by the WHO.

Source: EEA, [report](#) on Air quality in Europe – 2020.

The **effectiveness** criterion seeks to establish whether implementing the EU legislation has helped meet its objectives or make progress in achieving them. As already explained, setting standards for air quality is one of the objectives of the directives. Such standards have indeed been established for a number of pollutants. The correspondence between the EU's air quality standards and the WHO recommendations has already been discussed above under the Commission's assessment against the 'relevance' criterion. Therefore, the next paragraphs present the Commission's findings on the three other objectives of the AAQDs.

As regards the objective of **defining common methods for air quality monitoring and assessment**, the Commission notes that (as per data from 2019) the EU monitoring network is based on more than 4 000 monitoring stations with more than 16 000 sampling points measuring specific pollutants. The Commission believes the network 'provides reliable, credible and comparable

information on air quality'. Most zones/agglomerations in the Member States have the required minimum number of sampling points, although (as per data from 2019) there are cases in specific zones/agglomerations where the monitoring requirements of the AAQDs have not yet been met. Some of these cases have led to the launch of infringement procedures.

The Commission assessed air quality monitoring and reporting as broadly compliant with the requirements of the directives, but stated that it had faced a challenge when having to assess the implementation of the legislative requirements on the positioning of monitoring stations. The legislation lays down minimum criteria on the positioning of monitoring stations and leaves a certain flexibility to Member States to choose where exactly to locate the stations depending on local specificities. This flexibility is limited by an obligation for Member States to provide information for both areas where the highest concentrations of air pollutants occur and other areas that are representative of the exposure of the general population. The challenge lies in the fact that the Commission could not objectively check whether these two conditions have been met. The Commission is concerned<sup>9</sup> that the way the legislation defines these criteria gives too much discretion to the national competent authorities. It therefore considers that the criteria should be defined in a more restrictive way in order to achieve 'a higher degree of confidence' in the comparability of data collected through air quality monitoring.

Resource constraints (for example, availability of qualified staff) affect the quality of monitoring across Member States in terms of both zone/agglomeration coverage and quality of the data collected. Nevertheless, the Commission considers that the collected and reported air quality data is robust and of satisfactory quality and thus allows further policy action to be designed and implemented.

As regards the directives' objective **to ensure that air quality information is made available to the public**, the Commission's fitness check notes that the practices of informing the public are generally going in the desired direction. In particular, 'the AAQDs have facilitated the availability and accessibility of reliable and comparable data on air quality across the EU'. The upgraded air quality e-Reporting database managed by the EEA since 2014, which is a data hub for all reporting requirements under the directives, including official reporting of validated data on air quality and up-to-date data reported by Member States, is assessed positively. The EEA makes public the reported data and hence it is accessible to the citizens, whose demand for public information is confirmed by the increasing number of visits to the EEA air quality webpages. The Commission adds that, next to national, regional and local authorities, private operators are also making information public; however, the data publicised by the latter is less comparable partly because data collection and processing use different approaches and metrics.

The Commission identifies a shortcoming as regards the alert thresholds and/or information thresholds applied to information submitted to the public. As mentioned, the AAQDs do not define alert and information thresholds for some pollutants (e.g. for PM). The Commission finds that this situation results in a non-harmonised approach to informing the public on some pollutants across Member States. This has led to considerable differences in governance and/or media coverage of alarming levels of pollution. The fitness check refers to the results of Eurobarometer surveys indicating that a majority of citizens surveyed do not feel informed about air quality issues in their countries. Although subjective, these views correlate with the results of the support study. In particular, the information made public is of mixed quality partly because the EU Member States have taken different approaches in terms of data collection, assessment, reporting and dissemination.

As regards the directives' objective **to maintain good air quality and improve it where it is not good enough**, the Commission finds that the two AAQDs 'have not ensured that sufficient action is taken throughout the EU to meet air quality standards and keep exceedances as short as possible, resulting in a mixed picture'. Furthermore, exceedances for certain pollutants (notably PM, NO<sub>2</sub>, O<sub>3</sub> and BaP) are still widespread and persistent. Although there is a general trend of improving air quality since 2000, the periods of exceedances have not been kept as short as possible in all



instances, as required by the directives. Therefore, the AAQDs have been partially effective in achieving the EU air quality standards and reducing the adverse effects of air pollution.

As mentioned, Member States are obliged to prepare plans for the zones and/or agglomerations affected by exceedances of the standards. However, both the design of AQPs and their implementation have been identified as impeding compliance in certain cases. In particular, the Commission notes that, in several instances, the plans and their implementation did not succeed in keeping the exceedance periods as short as possible. The Commission notes that the success of each plan depends on the coordination between the levels of government in charge of their design and implementation and political commitment. The Commission finds that, if implementation is measured against the metric of reduced concentration levels (and reduced exposure to concentration levels above EU air quality standards), there have been both successes and shortcomings. The Commission also notes as problematic the fact that the 2008 AAQ Directive allows for a delayed start of the implementation of the measures under the plans, which means that more than two years can elapse from the moment the pollutant exceedance was first observed until the measures are implemented. Furthermore, if these measures include large-scale infrastructure projects, their practical implementation can take even longer, which does not bring air quality improvements as soon as possible, as required by the EU rules. This has led to the launch of several infringement procedures by the Commission against a number of Member States.<sup>10</sup> There are also cases where some Member States have failed to comply with Court of Justice of the European Union (CJEU) rulings, which has triggered new action by the Commission.<sup>11</sup>

The Commission specifies that the analysis based on the **efficiency** criterion should take account of the policies benefiting air quality indirectly rather than only quantifying the measures directly targeting air quality improvements. In particular, the Commission notes that many of the more costly measures envisaged in the Member States' air quality plans are in fact designed to deliver on the objectives of other EU policies, such as reducing greenhouse gas (GHG) emissions and improving mobility. The Commission further warns that estimates of the overall costs and benefits of air quality policies, and the AAQDs specifically, might be useful for giving a flavour of the order of magnitude of costs and benefits, but that using them for comparison purposes or as precise data is not sufficiently plausible. The order of magnitude is illustrated by the findings of a [study](#) published by the International Institute for Applied Systems Analysis in 2017. It shows that the costs aspect of all measures – generally resulting in air quality improvements – amounts to €70-80 billion annually. The benefits aspect is also conveyed through costs estimates. The results of an [ex-ante impact assessment](#) (published by the Commission in 2013) show that the cost of air pollution to society, health and economic activities – i.e. the harm done – amounts to €330-940 billion per year for the EU as a whole. These figures show a relatively low cost for action (which leads to benefits) as compared to the cost of inaction (which leads to harmful impacts of air pollution) on citizens' health, the economy and society.

The Commission notes that, depending on national specificities and the types of measures taken, the costs and benefits of implementing air quality measures can vary significantly from one Member State to another. Finally, in terms of costs spent on meeting the Member States' obligation to monitor and report pollution levels, the Commission notes that the burden per capita is relatively low (less than one euro per person per year based on a sample of Member States). However, Member States implement different governance approaches, which requires improvements.

The Commission assesses positively the AAQDs in terms of their **internal coherence**, i.e. coherence among the provisions of the AAQDs and coherence between the AAQDs and other EU policies and/or legislation on air quality. More specifically, the two directives together form a 'coherent regulatory system' for air quality improvement. In addition, the AAQDs are coherent with the general EU clean air policy framework and, in particular, the NEC Directive. However, there are certain inconsistencies that 'may have a limited impact' on the monitoring elements of the regulatory system (also discussed above under the Commission's assessment against the 'effectiveness' criterion).

The Commission is also positive as regards **external coherence**, i.e. coherence of the AAQDs with EU commitments taken at international level, and coherence between the AAQDs and other EU sectoral policies and/or legislation with effects on air quality. In particular, the Commission states that the two AAQDs have helped Member States in their efforts to comply with international law requirements, especially as regards the [Convention](#) on long-range transboundary air pollution and the [Convention](#) for the prevention of pollution from ships. Furthermore, the Commission notes a 'mutually supportive relationship' between environmental, sectoral and other relevant EU policies and legislation in areas such as climate, transport, agriculture and energy. However, there are certain incoherencies. These concern the design and the implementation of the policies, for example, in the areas of climate action (and the related measures in the field of energy) and agriculture, and thus undermine the objectives of the AAQDs. Usually, EU climate action and air quality policies support each other. However, the design and implementation of some EU climate action (and related energy) policy measures lead to trade-offs for air quality. More specifically, the EU's efforts in promoting biomass combustion for renewable energy production come at the expense of air quality, because biomass combustion releases harmful air pollutants. Furthermore, the promotion of diesel-fuelled over petrol-fuelled cars in some Member States may reduce GHG emissions (as diesel-fuelled vehicles produce lower levels of carbon dioxide (CO<sub>2</sub>) emissions that constitute GHGs, than petrol cars) but increases the release of NO<sub>x</sub>, which are air pollutants. The promotion of diesel-fuelled vehicles is also possible thanks to the EU legislation on fuel taxation, which allows Member States to tax diesel fuels at lower rates than petrol ones. As regards agriculture, the Commission notes that the second pillar (rural development) of the common agricultural policy (CAP) (in its 2014-2020 policy design) provides funding opportunities for the implementation of air quality measures and thus supports the achievement of the AAQDs objectives. However, the coherence between the first CAP pillar (direct payments and single common market organisation) and the AAQDs is assessed as 'less strong'; more specifically, the CAP objectives do not specifically focus on air quality, and there are no specific measures aimed at tackling NH<sub>3</sub> emissions in the cross-compliance conditionality for direct payments to farmers.

As regards the **funding related aspects of coherence**, the Commission finds that substantial funding has been made available to support air quality improvements directly between 2014 and 2020. In particular, in the period concerned, Member States spent approximately €2 billion on projects with a direct focus on air quality. In addition, cohesion policy funded projects with indirect positive effects on air quality, namely, on environmental protection and resource efficiency (€64 billion<sup>12</sup>), network infrastructure (€58 billion) and low-carbon economy (€45 billion).

The Commission's fitness check confirmed the **EU added value** of the AAQDs. In particular, the establishment of air quality standards and a common monitoring and assessment framework is better placed at EU rather than at Member State level. Stakeholders support this assessment by 'overwhelmingly' agreeing that the directives have been instrumental in incentivising and framing action in the Member States and improving the quality of ambient air.

## European Parliament

### Resolutions

The European Parliament actively scrutinises the implementation of EU air quality legislation. As regards the AAQDs in particular, in March 2021, the Parliament adopted a [resolution](#) based on a draft own-initiative implementation report of its Committee on the Environment, Public Health and Food Safety (ENVI). Parliament's position aimed to influence the Commission's zero pollution action plan (published by the Commission two months after the adoption of the resolution). The ENVI report and the resolution are based, among other things, on a [European implementation assessment](#) prepared by EPRS.

The Parliament welcomes the Commission's fitness check (discussed above), the announcement of the Commission's zero pollution action plan and the European Green Deal's commitment to revising the air quality standards. It calls on the Commission to align the values for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and O<sub>3</sub>

with the WHO guidelines, and BaP and C<sub>6</sub>H<sub>6</sub> values with the WHO reference levels. This alignment should be achieved by means of a revision of the AAQDs and following the results of a 'comprehensive impact assessment on health, environmental, societal and economic aspects'. Furthermore, the Parliament points out that the EU air quality standards need to be updated as soon as the new (2021) WHO guidelines are available, and that they need to be accompanied by an obligation for a periodic review of the standards on the basis of the latest scientific and technical evidence in order to align them with the regularly updated WHO guidelines. The Parliament also recommends that revised standards and monitoring requirements should, where appropriate, based on an assessment of the latest scientific evidence, also cover pollutants – such as PM<sub>0.1</sub>, black carbon, Hg and NH<sub>3</sub> – that are currently not regulated by the EU yet have proven negative health and environmental impacts. It also called on the Commission to replace existing target values on O<sub>3</sub>, As, Cd, Ni and BaP with limit values, explaining that 'limit values have been the most enforceable elements of the AAQD', given that the great majority of infringement procedures concern exceedances of limit values. The Parliament also pointed out that existing standards, defined on a yearly basis, allow for spikes in pollution concentrations to go unnoticed, especially as concerns PM<sub>2.5</sub>.

Again in the context of the revision of the AAQDs, the Parliament calls on the Commission to review and establish new mandatory rules for locating monitoring stations and sampling points, such as the possibility for the Commission to require the establishment of additional monitoring points – where necessary – to ensure better measurement of air pollution, or the establishment of a minimum number of measurement stations per type of emissions source (transport, industry, agriculture or residential). The Parliament further stresses that, although the AAQDs include some provisions on reducing emissions in places where people suffer the most from air pollution or where concentrations are highest, the Commission needs to provide further guidance on the macro scaling of the sampling points to strengthen their implementation.

The Parliament dedicates special attention to the promotion of successful local policies on air quality. In particular, it believes that clear decreasing trends in air pollution can be observed mainly when a number of policies are implemented in combination with each other, and therefore a coherent approach across the EU in the design and implementation of local policies is fundamental to their success. The Parliament underlines that achieving policy coherence also requires cooperation among different authorities. In this context, it calls on the Commission and the Member States to collaborate closely with national, regional and local authorities, and on the Member States specifically to develop coherent and long-term strategies for cleaner air. In addition, the Parliament considers that the revision of the AAQDs should include new legal provisions preventing local policies and measures that have proven to be effective in improving air quality from being reversed without this being preceded by an in-depth analysis or assessment. As regards AQPs specifically, the Parliament regrets that the AAQDs do not require Member States to report on the implementation of AQPs to the Commission or to update them when new measures are adopted or progress is insufficient. It further notes that proper and critical Commission feedback on the submitted AQPs could help Member States to design better plans with more effective measures, and could prevent non-compliance with air quality standards.

In terms of AAQDs enforcement, the Parliament alerts of the high number (31 as per February 2021) of pending infringement procedures against 20 Member States relating to the implementation of the directives. It recognises that although some of these infringement procedures have been ongoing since 2009, and that despite ongoing infringement procedures, pollution concentration exceedances in Member States still occur. It therefore considers that persistent and systemic exceedances of air quality standards by Member States indicate their lack of commitment to adopting more effective measures to protect their citizens' health and the environment, and highlight the ineffectiveness of the current enforcement procedure. Against this backdrop, the Parliament urges the Commission to review the current enforcement procedure for the AAQ Directives.



## Written questions by Members of the European Parliament

Individual Members of the European Parliament (MEPs) are also active in highlighting issues related to the three pillars of EU air quality policy, in particular by submitting [written questions](#) to the Commission. On the implementation of the AAQDs specifically, examples of MEPs' questions include non-compliance with the standards by Member States and/or their specific zones/agglomerations, sources of air pollution (such as agro-industrial installations, households, transport, waste management and trade), sampling points, the efficiency of certain national measures aimed at complying with specific air quality standards, infringement procedures launched by the Commission against individual Member States, petitions submitted to the Parliament, etc. Below is an example of a recent written question.

[Written question](#) submitted by Hilde Vautmans MEP (Renew/Belgium) on 7 June 2022

The question was raised in the context of a reasoned opinion sent by the Commission to Belgium on 18 February 2021 for incorrect implementation of the 2008 AAQ Directive. MEP Vautmans stated that on 20 April 2021 the Flemish Minister for the Environment, Zuhal Demir, objected to the content of the opinion. In particular, the minister asked Commissioner Sinkevičius to suspend infringement proceedings for alleged non-compliance with Articles 13 and 23(1) of the 2008 AAQ Directive in air quality zone BEF02A 'Agglomeration "Antwerp"'. Against this backdrop, the Member asked: i) how has the Commissioner reacted; and ii) will the Commission be taking further steps and, if so, what are they, or will it be discontinuing the proceedings.

[Answer](#) given by Commissioner Sinkevičius on behalf of the Commission on 22 July 2022

The Commissioner informed that Belgium replied to the reasoned opinion and the Commission discussed the situation with the Belgian authorities at a meeting held on 30 June 2021. Furthermore, the Commission continues to monitor the air quality situation in Belgium closely, including in the air quality zones (which extend beyond the region of Flanders) covered by the infringement case. The Commission confirmed that it would 'consider the next steps to be taken' based on the evolution of the situation, in particular in the form of an assessment of the air quality data for 2021 on which Belgium had to report by September 2022.

## Petitions and citizens' enquiries

Environmental damage and air pollution in particular are of utmost concern for citizens and their organisations. This is evident by the high number of citizens' enquiries and petitions<sup>13</sup> addressed to the Parliament every year on claimed violations of the EU environmental legislation, including the AAQDs, in a big number of Member States and/or their specific zones/agglomerations.

## European Court of Auditors

The special [report](#) 'Air pollution – our health still insufficiently protected', published by the European Court of Auditors (ECA) in 2018, identifies a number of issues relating to the implementation of the 2008 AAQ Directive. It covers the air quality policies, including the AQPs, of six EU cities.<sup>14</sup>

As regards the siting of sampling points, the auditors consider that the directive suffers from several 'ambiguities' whose practical implementation could lead to situations where Member States interpret the requirements differently and do not necessarily measure air pollution concentrations at locations where the highest concentrations of pollutants occur (e.g. near urban roads or industrial sites). This could compromise the protection of human health. It is therefore recommended that the deficiencies identified need to be addressed in a future revision of the 2008 AAQ Directive.

The ECA finds that the current provisions of the directive do not stimulate Member States to report data on air pollution early enough. In particular, Member States are currently required to report annual validated data to the Commission by 30 September of the year following the year of data collection. The EU auditors stress that timely air quality data is important to the Member States, as they are in charge of taking appropriate action against air pollution, but also to the Commission,

which must act early enough to enforce compliance. The report finds that technological developments over recent years (such as e-reporting) would benefit earlier reporting.

The ECA report notes that, contrary to what is required by the EU legislation, 'Member States are not taking enough effective actions to improve air quality as quickly as possible'. The quality of the sample of AQPs of the six cities audited is assessed as 'insufficient', and their main deficiencies are highlighted. The ECA criticises the fact that the legislation does not require Member States to report to the Commission on the implementation of their AQPs or to update their plans when progress is visibly insufficient or new measures are adopted. It is worth noting that Member States need to update their plans only at the end of the respective implementation period, provided the quality of the air in the respective zone/agglomeration still does not comply with the EU standards. The report acknowledges that drafting AQPs takes time, which, as already explained, is to a certain extent due to the requirements placed by the 2008 AAQ Directive itself. All this complicates the Commission's task of monitoring national measures. In particular, the EU auditors believe that the Commission's monitoring of Member States' compliance has been delayed and that the Commission faces limitations as regards the enforcement of compliance. They furthermore point out that the Commission has taken Member States to the CJEU only when it has found sufficient evidence for serious breaches of the 2008 AAQ Directive. Such enforcement actions are lengthy and despite the several CJEU rulings in favour of the Commission (as per 2018), air quality standards continue to be frequently breached, the auditors observe.

The ECA also criticises the fact that the 2008 AAQ Directive does not explicitly guarantee access to justice for the public (the same goes for the 2004 AAQ Directive). Such a provision is needed because a) Member States have different legal procedures and b) the citizens of some Member States face barriers when trying to access justice, despite the fact that this right is guaranteed by a number of EU legislative acts transposing the [Aarhus Convention](#)<sup>15</sup> into the EU legal order.

Moreover, the ECA is critical of internal and external coherence and of the funding-related aspects of coherence. In terms of internal coherence, the auditors note inconsistencies between the 2008 AAQ Directive and pieces of EU legislation regulating air polluting emissions at their source and in particular the practical implementation of the latter. A first example are the IED and the implementation of certain exemptions (i.e. the setting of less stringent standards), which contradicts the objectives of EU air quality policy. As a result, in the exempted agro-industrial installations the application of best available techniques (BATs) – the main policy instrument of the IED – to their full potential has been slowed down. As a result, the reduction of emissions from these installations has also been slowed down, which goes against the objectives of the AAQDs. A second example concerns the practical implementation of the Euro standards for vehicles with internal combustion engines, and in particular for light-duty vehicles. The 2018 ECA report notes that the Euro standards and the technological developments they triggered have reduced PM (air pollutant) and CO<sub>2</sub> (GHG) emissions significantly, but have not been so successful in abating NO<sub>x</sub> (air pollutant) emissions, especially from diesel-fuelled vehicles. In particular, as revealed not least by the Dieselgate scandal, in several cases, the NO<sub>x</sub> emissions of diesel vehicles registered in non-laboratory conditions proved to be higher than those produced in laboratory conditions. The EU type-approval framework had recently been upgraded but, as the EU auditors warned in a review [briefing paper](#) published in 2019, it would take some time before the effects of the reform become visible.

In terms of external coherence, the ECA highlights the design of the CAP (2014-2020) as a policy contradicting air quality objectives, especially as regards NH<sub>3</sub> emission, a precursor of PM<sub>2.5</sub>, responsible for the majority of premature deaths in the EU. The EU auditors specify that technically and economically viable measures, such as agronomic, livestock or energy measures, still need to be deployed at a scale and intensity able to cut emissions significantly.

As regards funding, the ECA finds that it is not always targeted. In the six cities visited, the auditors found examples for both sufficiently and insufficiently targeted EU-funded projects.

## Council of the European Union

In March 2020, the Council of the EU adopted [conclusions](#) on Improvement of air quality, which welcome the Commission's fitness check and take note of its findings. Member States' governments underline that the air quality standards expressed in limit values have led to significant improvement of air quality over the past decade, and consider that it is essential to keep using limit values in order to protect the citizens' health. While noting the finding of the fitness check that the AAQDs' requirement for taking remedial action in case of observed exceedances has been decisive in triggering air quality improvements, the ministers acknowledge that action taken at local, national and EU level has not always been sufficient to meet air quality standards and keep exceedances as short as possible. The ministers furthermore acknowledge that implementation challenges remain in a number of areas, including the need to ensure coherence of action both between different levels of governance and between different sectors. The Commission's intention to propose a revision of air quality standards is welcomed and the ministers look forward to the discussions on such proposals, including on a possible closer alignment of the EU air quality standards with the (updated) WHO air quality guidelines. In this context, the Council stresses that the main aim of strengthening the air quality standards is to reduce the negative impact of air pollution on health and the environment and underlines the importance of striving to achieve the WHO air quality guideline levels as a way to contribute to the relevant UN [Sustainable Development Goals](#) (SDG). However, the ministers note with concern that despite efforts to reduce air pollution at both EU and Member State level, air quality standards for some pollutants are still not being met by many Member States, and that appropriate action needs to be taken at all levels as soon as possible. The Council also expresses views on various pieces of EU legislation regulating the sources of air pollution.

## EU advisory bodies

In October 2021, the European Economic and Social Committee (EESC) adopted an [opinion](#) on the Commission's zero pollution action plan. The EESC expressed its support for the Commission's intention to address the various types of pollution in a holistic way and to comply with the commitments taken under the [Paris Agreement](#) and the SDGs. It stresses further that for the plan to be a truly ambitious one, the targets must be fully aligned with the WHO recommendations and made more ambitious from the outset, i.e. already now. As regards air pollution in particular, the EESC believes that a standardised metric for assessing the toxicological effects of PM on human health should be established based not just on mass concentration but also on size and chemical composition. When assessing the sources of PM, 'their oxidative potential and ultrafine particles are important, as how dangerous they are depends on that, and they should be included in legislation and PM pollution monitoring'.

In January 2022, the European Committee of the Regions (CoR) too adopted an [opinion](#) on the zero pollution action plan. The CoR welcomes the plan and its focus on health and cross-cutting approach as well as the Commission's ambition to align the EU's air quality standards more closely with the latest WHO recommendations and to strengthen provisions on monitoring, modelling and air quality plans to help local and regional authorities. It notes that the AAQDs' provisions on monitoring, modelling and air quality plans need to be better aligned. The CoR suggests using the 2021 WHO target values as a goal to achieve by 2050, but not using the recommended values as limit values since many Member States do not yet meet the current ones. It also recommends that the following documents need to be taken into account<sup>16</sup>: i) the conclusions of the [CoR Regional Hubs consultation](#), which investigated the implementation of the AAQDs and the NEC Directive, and ii) the European Parliament's implementation report (discussed above), which describes the AAQDs as 'a partially effective tool that needs to be improved'.

## ENDNOTES

- <sup>1</sup> The Commission refers to the 'Air quality in Europe – 2020' EEA [report](#) noting that since 2000 the EU's GDP has grown by about 30 %, while emissions of the main air pollutants have decreased by between 10 % and 70 % (depending on the pollutant).
- <sup>2</sup> The NEC Directive translates into EU law the commitments taken by the EU and its Member States under the [Gothenburg Protocol](#) to the 1979 [Convention on long-range transboundary air pollution](#), signed in the framework of the United Nations Economic Commission for Europe (UNECE). The protocol was originally signed in 1999 and updated in 2012.
- <sup>3</sup> See Halleux V., Revision of the Industrial Emissions Directive, EU legislation in progress [briefing](#), EPRS, European Parliament, 2022.
- <sup>4</sup> See Šajin N., Ecodesign for sustainable products, EU legislation in progress [briefing](#), EPRS, European Parliament 2022.
- <sup>5</sup> The EEA has created an interactive map ([Air Quality Index](#)) of all zones and/or agglomerations.
- <sup>6</sup> [Air quality guidelines – Global update 2005](#), World Health Organization, 2005.
- <sup>7</sup> [New global air quality guidelines](#), World Health Organization, 2021.
- <sup>8</sup> Review of evidence on health aspects of air pollution – REVIHAAP project, [Final Technical Report](#), World Health Organization, Regional Office for Europe, 2013.
- <sup>9</sup> The fitness check notes the concerns of some stakeholders whether the data provided by sampling points in different locations could be considered comparable. The reason for this is that for some pollutants, for example for NO<sub>2</sub>, spatial representativeness of measurements may vary substantially even on small scales (even when it comes to distances of only tens of meters).
- <sup>10</sup> The third edition of the [Environmental Implementation Review](#) published by the Commission in September 2022 gives an update on infringement proceedings that have been opened where limits have been exceeded persistently for key pollutants such as PM and NO<sub>2</sub>. In particular, for PM<sub>10</sub>, there are pending proceedings involving BG, CZ, EL, ES, FR, HR, HU, IT, PL, RO, SI, SK, SE; for PM<sub>2,5</sub> – HR and IT; and for NO<sub>2</sub> – AT, BE, CZ, DE, EL, ES, FR, HU, IT, LU, PL, PT, RO.
- <sup>11</sup> See, for example, the Commission's December 2020 [infringements package](#).
- <sup>12</sup> As specified on p. 69 of the fitness check.
- <sup>13</sup> As recent examples, see [Petition No 465/2021](#) by Alberto Steidl (Italian) on keeping air quality below the recognised health threshold and [Petition No 0409/2020](#) by Petre Remus (Romanian) on solving critical air pollution in Bucharest and neighbouring areas as well as the relevant Commission's observations and conclusions.
- <sup>14</sup> These cities are Milan, Brussels, Stuttgart, Sofia, Cracow, and Ostrava.
- <sup>15</sup> [Convention](#) on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters signed in Aarhus under the auspices of the UNECE in 1998.
- <sup>16</sup> It is presumed that the recommendation is addressed to the Commission and concerns the revision of the AAQDs.

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[eprs@ep.europa.eu](mailto:eprs@ep.europa.eu) (contact)

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