

Air quality - revision of EU rules: Targeted survey questionnaire (Part 2 of 2)

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Air quality - revision of EU rules Targeted survey questionnaire – Part 2 of 2

Background

Clean air is essential for our health and that of the environment. The [Ambient Air Quality Directives](#) set air quality standards to avoid the build-up of excessive air pollutant concentrations. The Directives also define common methods to monitor, assess and inform regarding ambient air quality in the European Union. Furthermore, the Directives require action, when standards are exceeded, in order to avoid, prevent or reduce harmful effects on human health and the environment as a whole.

As part of the [European Green Deal](#), the EU is revising these air quality standards, to align them more closely with the recommendations of the World Health Organization (see overview of EU standards [here](#)). It also aims to improve the overall EU legislation for clean air, including revising provisions on penalties in case of exceedances, requirements for public information, as well as propose means to strengthen air quality monitoring, modelling and plans to help local authorities achieve cleaner air.

The targeted survey in the context of the Impact Assessment

The Commission has launched an [impact assessment](#) to support the Ambient Air Quality Directives revision. In line with the Commission's [Better Regulation](#) agenda, this targeted stakeholder questionnaire will inform the revision process, and the views collected will be considered in the impact assessment, especially when designing potential (regulatory and non-regulatory) measures to reduce air pollution, strengthen air quality monitoring, modelling and plans, and reduce the related impacts on environment and society.

Why are we consulting you?

In contrast to the open public consultation which included rather general questions, in this survey we are seeking expert input on technical aspects of the revision. In this survey we target policymakers, civil servants, experts, practitioners and civil society organisations to seek their views on how specific provisions in the current air quality rules could be revised.

Structure of the survey

The survey is divided in several parts:

Part 1: Respondent identification – questions regarding stakeholder identification

Part 2: Questions on Policy Area 2 - Improving the current air quality legislative framework, including provisions on penalties and public information

Part 3: Questions on Policy Area 3 - Strengthening of air quality monitoring, modelling and plans

Please note that this survey is a follow up to Part 1 (which contained questions on Policy Area 1 (Closer alignment of the EU air quality standards with the latest recommendations of the World Health Organization) and was launched in December 2021. This second part of the survey addresses questions on Policy Areas 2 and 3 (Improving the current air quality legislative framework, including provisions on penalties and public information and Strengthening of air quality monitoring, modelling and plans).

We estimate that replying to all questions would take about 25-35 minutes. Please note that not all questions have to be answered. You are invited to respond to the best of your abilities or knowledge of the topic. At the end of the questionnaire, there is also an option to upload additional documents, may you deem it relevant.

Thank you for your cooperation. Your input is extremely valuable in supporting the revision of the Ambient Air Quality Directives.

Section 1: About you - respondent identification

* a) In what capacity are you completing this questionnaire?

- Academic/research institution
- Business association
- Company/business organisation
- Environmental organisation
- Non-governmental organisation (NGO)
- Trade Union
- National public authority
- Regional public authority
- Local public authority
- EU institution or body
- International institution or body
- Other

* b) First name

100 character(s) maximum

Panagiotis

* c) Surname

100 character(s) maximum

Chaslaridis

* d) Email address (will not be published)

panagiotis.chaslaridis@efanet.org

e) Organisation name

100 character(s) maximum

European Federation of Allergy and Airways Diseases Patients' Associations (EFA)

f) Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
- Medium (50 to 249 employees)
- Large (250 or more)

g) Organisation scope

- International
- National
- Regional
- Local

h) Transparency Register number

Check if your organisation is on the [transparency register](#). It's a voluntary database for organisations seeking to influence EU decision-making.

255 character(s) maximum

28473847513-94

* i) Country of origin

Please add your country of origin, or that of your organisation if you are responding on behalf of your organisation

BE - Belgium

* j) Please indicate the sector(s) you are active in

at most 3 choice(s)

- air quality management
- air quality monitoring
- agriculture / food
- biodiversity and/or environment
- energy
- government
- health care
- investment and finance
- manufacturing
- public health
- raw materials extraction / primary processing
- scientific research
- transport
- none of the above sectors

- other
- I do not know, or I do not want to answer

* k) Publication privacy settings

The Commission may publish the responses to this consultation. You can choose whether you would like your details to be made public or to remain anonymous by clicking the relevant box.

- Anonymous:** Only your type of respondent, country of origin and contribution will be published. All other personal details (name, organisation name and size, transparency register number) will not be published.
- Public:** Your personal details (name, organisation name and size, transparency register number, country of origin) will be published with your contribution.

I agree with the [personal data protection provisions](#)

* i) Would you be interested in participating in follow-up consultation activities in relation to 'Air quality - revision of EU rules' (i.e. interviews and/or focus groups)?

- Yes
- No

Policy area 2: Improving the current air quality legislative framework, including provisions on penalties and public information

Besides air quality standards, the Ambient Air Quality Directives include provisions designed to ensure proper implementation and enforcement of the measures needed to achieve the set objectives. Under the current Directives, air quality objectives have not been reached everywhere in the EU – which point to a need to reinforce the legislative framework. Policy area 2 thus relates to “improving the air quality legislative framework, including provisions on penalties and public information, to enhance effectiveness, efficiency and coherence”. Policy options under this policy area aim to improve the air quality legislative framework, including interventions addressing shortcomings already identified elsewhere, namely shortcomings regarding health outcome, air quality information, enforcement and governance.

The questions under Policy area 2 cover:

- **Intervention area A: How to ensure the timely adjustment of EU air quality standards to evolving scientific or technological knowledge?** (i.e. what should be the mechanism to trigger a future revision of the air quality standards)
- **Intervention area B: Which types of air quality standards or combination thereof are appropriate?** (i.e. appropriateness of using limit or target values, exposure-based standards, long-term and short-term objectives etc. for different air pollutants);
- **Intervention area C: What action should be mandated in case air quality standards are not respected** (i.e. rules on when air quality plans and other measures must be taken and what those other measures could comprise);
- **Intervention area D: Who should be involved in the preparation of air quality plans, and how should their preparation and implementation be coordinated?** (i.e. how air quality plans are developed and with the involvement of which governance structures);

- **Intervention area M: How to assess and address transboundary air pollution in local/regional air quality management? (**)**
e. how to improve transboundary cooperation on local and/or regional air quality management
- **Intervention area E: What legal tools should be available to address breaches of the obligations?** (i.e. penalties, compensation for damages and access to justice); and
- **Intervention area F: How to best inform the public on air quality?** (i.e. what information must be shared with the public and how)

*(**) [Note that 'Intervention area M: How to assess and address transboundary air pollution in local/regional air quality management?' relates to both policy areas 2 and 3, but is included under policy area 2 only.]*

2.1 Intervention area A: How to ensure the timely adjustment of EU air quality standards to evolving scientific and technical knowledge?

Shortcomings identified in relation to intervention area A:

Health challenges caused by air quality persist in the EU. An apparent shortcoming of the current legislation is that there is no explicit mechanism in the legislation to ensure that the air quality standards are adapted in a timely manner in accordance with evolving technologies and science, in particular scientific evidence on how air pollution affects health and the environment.

[Note that this primarily relates to health outcome shortcomings identified in the evaluation of the AAQ Directives.]

* 1. I wish to reply to questions on intervention area A:

- Yes
 No

2. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

The identified shortcomings require changes in the current EU legislative framework. Without them, air pollution will continue incurring a huge burden on human health and the environment. However, timely application and enforcement of air quality law will be possible through a combination of actions, rather than a single policy intervention.

In order to address the above identified shortcomings, we ask your views on the following potential interventions:

- (A1) Introduce a mechanism for adjusting EU air quality standards upon publication of new scientific advice (including, but not limited to, the publication of new WHO guidelines).
- (A2) Introduce a mechanism for adjusting EU air quality standards based on technical progress in air pollution reduction.
- (A3) Introduce a provision for EU Member States to adopt more stringent standards in light of the new technical and scientific progress coupled with an obligation to notify the European Commission.

- (A4) Keep and periodically update a list of priority air pollutants to ensure air pollutants of emerging concern are monitored.

3. **Intervention A1: Introduce a mechanism for adjusting EU air quality standards upon publication of new scientific advice (including, but not limited to, the publication of new WHO guidelines).**

a. i. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

ii. To which extent would the below specific interventions address the **above identified shortcomings?**

1. Introduce a binding **schedule of reviews of technical and scientific progress** to be undertaken by the European Commission

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

2. Introduce a mechanism for adjusting air quality standards **upon publication of new WHO guidelines**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

3. Introduce a mechanism for adjusting air quality standards **based on (other) latest scientific advice**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

It is of absolute importance to introduce a mechanism to evaluate and adjust the EU air quality standards with new scientific developments in mind, if the EU is to fulfil its mandate to protect public health. Delay or inaction on air pollution legislation even with strong scientific evidence at hand on the harmful effects of air pollution to health is aberrant and will entail legal procedures from affected populations. The adjustment

procedure should entail a binding schedule of regular reviews of the technical and scientific progress, with the participation of all relevant stakeholders, such as national authorities, researchers, medical societies and civil society representatives, especially from vulnerable groups such as respiratory patients. The process should be driven by the European Commission jointly with an entity representing scientific excellence and authority, such as the WHO.

The timetable of evaluations (for example, every 4 to 5 years) must be in accordance with the aim of full alignment with the WHO Air Quality Guidelines by 2030 at the latest.

While the WHO Guidelines are obviously a key resource, they would not be sufficient. These evaluations must take into account the whole body of knowledge on technical progress and scientific evidence, including reports from EEA, OECD and the Council of Europe.

Apart from adjustment, such a mechanism must also reinforce implementation of the revised standards at the national level, which is a key shortcoming currently. The outcome should not be to accumulate infringement cases, but rather to improve air quality for all people living in Europe.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

4. Intervention A2: Introduce a mechanism for adjusting EU air quality standards based on technical progress in air pollution reduction.

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

In the case of air pollution, technical means are catalysts for change. However, clean air technology is already a low-hanging fruit in many sectors, including transport, buildings, energy and agriculture. Lack of technical progress cannot be a pretext for not setting ambitious air quality objectives. What is lacking is the political will to implement the necessary transitions, due in part to the many vested interests and dependency in old, 'dirty' technologies.

The EU should ensure the uptake of the necessary technology in relation to other policies within the EU Green Deal framework that link to air quality, including on energy (namely the revisions of the EPBD and EED), transport (transition to greener modes) and climate change (in the context of new climate adaptation and biodiversity strategies). A combination of forces is needed if Europe is to meet the commitment of climate-neutrality by 2050, and technological is set to play a key role.

Delays in investing in clean air technology perpetuates air pollution and therefore increases the health burden for the population.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

5. Intervention A3: Introduce a provision for EU Member States to adopt more stringent standards in light of new technical and scientific progress coupled with an obligation to notify the European Commission.

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

As in other legislative areas setting minimum levels of compliance, countries should be free to set more ambitious air quality targets. However, nationally-determined standards cannot be the rule of thumb for transnational environmental risks such as air pollution, let alone for a mechanism for adjustment. Legally binding science-based standards defined at the EU level must remain the key tool for uniform implementation.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

6. Intervention A4: Keep and periodically update a list of priority air pollutants to ensure air pollutants of emerging concern are monitored.

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

To enable proper monitoring and pave the way for action, it is crucial for the European Commission to develop and maintain a public inventory with information on both existing and emerging pollutants, including natural pollutants such as pollen, sand/dust storms and volcanic emissions. While such an initiative would not be sufficient to ensure timely adjustment as a stand-alone measure, it can definitely support the adjustment mechanism and drive research.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

7. Do you have any other suggestions **for intervention area A**, i.e. for interventions to ensure the timely adjustment of EU air quality standards to evolving scientific or technological knowledge? In case of possible combinations of interventions, what considerations should be taken into account?

Intervention A1 is absolutely necessary for timely adjustment of EU air quality standards. The other proposed interventions can support this work.

2.2 Intervention area B: Which types of air quality standards or combination thereof are appropriate?

Shortcomings identified in relation to intervention area B:

Health challenges caused by air quality persist in the EU. Different types of EU air quality standards have different effects on reducing exposure to harmful levels of air pollutants. This intervention area looks at what different types of air quality standards should trigger what kind of action.

Different types of EU air quality standards are available in the existing legislative framework – namely:

- LV Limit value – i.e. ‘to be attained within a given period and not to be exceeded once attained’;
- TV Target value – i.e. ‘to be attained where possible over a given period’;
- LTO Long-term objective – i.e. ‘to be attained in the long term, save where not achievable through proportionate measures’;
- ECO Exposure concentration obligation – i.e. ‘on the basis of measurements at urban background locations which reflect population exposure – and to be attained over a given period’;
- (N)ERT (National) exposure reduction target – i.e. ‘a percentage reduction of the average exposure to be attained where possible over a given period’.

In addition, the Ambient Air Quality Directives define critical levels and alert/information thresholds:

- Alert threshold – i.e. ‘a level at which immediate steps are to be taken by the Member States’;
- Information threshold – i.e. ‘a level beyond which immediate and appropriate information is necessary’;

Please see Directives 2008/50/EC and 2004/107/EC for the full definitions of the above types of standards.

[Note that this primarily relates to implementation shortcomings identified in the evaluation of the AAQ Directives.]

* 8. I wish to reply to questions on intervention area B:

- Yes
 No

9. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

The identified shortcomings require changes in the current EU legislative framework. Without them, air pollution will continue incurring a huge burden on human health and the environment.

In order to address the above identified shortcomings, we ask your views on the following potential interventions:

- (B1) Establish short-term EU air quality standards (daily or hourly) for additional air pollutants that currently only have annual or seasonal standards e.g. PM2.5.
- (B2) Define alert thresholds and information thresholds for all air pollutants as triggers for alerting the public and taking short-term action.
- (B3) Expand the application of the exposure reduction targets (i.e. specific air quality standards to achieve a relative reduction in exposure).
- (B4) Provide guidance on the provisions concerning types of EU air quality standards and on the action to be taken in case of exceedance of different types of standards.
- (B5) Establish limit values for additional air pollutants (i.e. for air pollutants currently subject to target values).

10. **Intervention B1: Establish short-term EU air quality standards (daily or hourly) for additional air pollutants that currently only have annual or seasonal standards e.g. PM2.5**

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
 To some extent
 To a large extent
 Fully
 No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

PM2,5 is among the main air pollutants linked with adverse health effects. Fine particulates can penetrate into the respiratory tract and trigger respiratory diseases such as asthma. We believe that PM2,5 must be regulated according to an even stricter standard than the current one.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

11. Intervention B2: Define alert thresholds and information thresholds for all air pollutants as triggers for alerting the public and taking short-term action

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

Access to public information on air quality is a key element of empowered citizens, particularly of those mostly at risk. Accurate information on the levels of air pollution in real time is a valuable prevention factor, as it can help people adapt their daily activities to reduce their exposure.

In this regard, information thresholds are crucial to inform the public and facilitate preventative action. Information thresholds must be defined also for pollutants currently not within the scope, such as pollen and sand/dust. Measures must contain real-time information as well as appropriate messaging targeting vulnerable groups of the population. Alert thresholds are important to enable appropriate measures addressing pollution peaks.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

12. Intervention B3: Expand the application of the exposure reduction targets (i.e. specific air quality standards to achieve a relative reduction in exposure).

a. i. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

ii. To which extent would the below specific interventions address the **above identified shortcomings**?

1. Introduce an exposure reduction target applicable at **regional or local level**.

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

2. Broaden the “average exposure indicator” metric to include locations **other than urban background** (for instance rural background locations as well).

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

3. Establish requirements for Member States to adopt **air quality plans** to achieve compliance with exposure concentration obligations.

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

13. Intervention B4: Provide guidance on the provisions concerning types of EU air quality standards and on the action to be taken in case of exceedance of different types of standards.

a. To which extent would this intervention **address the above identified shortcomings**?

- Not at all
- To some extent
- To a large extent
- Fully

No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

In addition to the legally binding measures prescribed in the AQ Directives, clarifications should be provided to support country-level actions in case of exceedances and a set of recommended actions to meet the exposure levels. The accomplishment of these actions must be monitored and evaluated as appropriate.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

14. **Intervention B5: Establish limit values for additional air pollutants (i.e. for air pollutants currently subject to target values)**

a. i. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

ii. To which extent would the below specific interventions address the **above identified shortcomings?**

1. Establish limit values also for air pollutants that tend to depend on **transboundary precursors** and /or annual variations in meteorology (e.g. as is the case for ozone).

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

2. Establish limit values also for air pollutants that tend to correspond to **specific point source** emissions (e.g. as is the case for most heavy metals).

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

3. Establish limit values also for air pollutants that tend to correspond to emissions from **specific widespread practices** (e.g. as is the case for most poly-aromatic hydrocarbons).

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

As acknowledged in the fitness check of the current legislative framework, limit values have proved to be the most effective tool in addressing exceedance levels, with the most potential for the protection of health. Moreover, measuring emissions at the source would link industrial development to environmental impact and make the process circular, and be a very important accountability tool for the populations living nearby these establishments.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

15. Do you have any other suggestions **for intervention area B**, i.e. for interventions regarding types of EU air quality standards? In case of possible combinations of interventions, what considerations should be taken into account?

2.3 Intervention area C: What action should be mandated in case air quality standards are not respected?

Shortcomings identified in relation to intervention area C:

There are still exceedances above the current EU air quality standards. This points to shortcomings in the actions mandated to address those exceedances.

[Note that this primarily relates to implementation shortcomings identified in the evaluation of the AAQ Directives.]

* 16. I wish to reply to questions on intervention area C:

- Yes
- No

17. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

The identified shortcomings require changes in the current EU legislative framework, regarding the necessary actions in case of exceedances. Without specification of measures, exceedances of air pollution will persist, with adverse effects on human health and the environment.

In order to address the above identified shortcomings, we ask your views on the following potential interventions:

- (C1) Further specify the obligation to take measures to keep exceedance periods as short as possible.
- (C2) Reformulate the term “as short as possible” (related to exceedance periods) with a defined time period.
- (C3) Require a clearer coordination between short-term action plans and air quality plans.
- (C4) Introduce an obligation for effective short-term action plans for each pollutant to prevent / tackle air pollution events.
- (C5) Mandate regular updates of air quality plans.

18. **Intervention C1: Further specify the obligation to take measures to keep exceedance periods as short as possible**

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

The obligation to take measures in case of exceedances has been in place since earlier versions of EU air quality legislation. Nevertheless, breaches of pollutant limit/target values have been persistent in more than half of EU Member States (with about 15 ongoing infringement procedures). Specifying the obligation to adopt measures tackling exceedances would be useful, but it should be coupled with a framework of robust corrective emergency actions.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

19. **Intervention C2: Reformulate the term “as short as possible” (related to exceedance periods) with a defined time period.**

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

The legal framework on the measures to tackle pollution exceedances needs to be as precise as possible, action-oriented and time-specific, and linked to legal obligations at local, national or EU levels, leaving no room for differing interpretations.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

20. Intervention C3: Require a clearer coordination between short-term action plans and air quality plans

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

Air quality plans need to be supported by strong result-oriented short-term plans that put health protection first. Specific attention should be paid to the level of governance responsible for each plan, in order to ensure actions are coordinated towards effectiveness.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

21. Intervention C4: Introduce an obligation for effective short-term action plans for each pollutant to prevent / tackle air pollution events

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

Short-term action plans for all pollutants should become mandatory, in order to address pollution exceedances or prevent them altogether, so that pollutant levels are brought back below the legally binding limits. This obligation must be expanded to natural pollutants which have adverse effects on health, such as pollen and sand/dust storms, together with appropriate information and alert thresholds.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

22. Intervention C5: Mandate regular updates of air quality plans

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

Updates of air quality plans are key to understand the extent to which taken measures have been effective to address a given pollution exceedance. In cases where exceedances persist, air quality plans need to be updated on a regular basis.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

23. Do you have any other suggestions **for intervention area C**, i.e. for interventions regarding action that should be mandated in case air quality standards are not respected? In case of possible combinations of interventions, what considerations should be taken into account?

The revised Air Quality Directives need to establish a continuous dialogue among all relevant stakeholders, including national/regional/local competent authorities, sectoral representatives, civil society and local citizens. Such an open and participatory approach is key in gaining a comprehensive understanding of specific air pollution events and identifying the most effective measures to address them.

2.4 Intervention area D: Who should be involved in the preparation of air quality plans, and how should their preparation and implementation be coordinated?

Shortcomings identified in relation to intervention area D:

There are ongoing exceedances of EU standards. It appears that air quality plans and the measures adopted as part of these plans do not always effectively address the exceedance. For example, establishing air quality plans does not always include the participation of competent authorities responsible for emission sources (this is a problem where local air quality is impacted by emissions outside the air quality zone). In addition, the measures are not always accepted by their addressees and are seen as disproportionate to the exceedance.

[Note that this primarily relates to implementation shortcomings and governance shortcomings identified in the evaluation of the AAQ Directives.]

* 24. I wish to reply to questions on intervention area D:

- Yes
- No

25. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

The identified shortcomings require changes in the current EU legislative framework. Without changes in the provisions for the preparation of air quality plans, that planning will most likely continue being ineffective in addressing exceedances.

26. **Intervention D1: Establish a requirement for Member States to involve specific actors in air quality plan development and to specify coordination arrangements for the development and implementation of air quality plans**

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

The revised AQDs needs to establish a continuous dialogue among all relevant stakeholders, including national/regional/local competent authorities, sectoral representatives from polluting industries, civil society and local citizens. Such an open and participatory is key in gaining a comprehensive understanding of specific air pollution events and identifying the most effective measures to address them.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

27. Intervention D2: Introduce a requirement for Member States to harmonise air quality plans and air quality zones (and require a ‘one zone, one plan’ approach)

a. To which extent would this intervention **address the above identified shortcomings**?

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

28. Do you have any other suggestions **for intervention area D**, i.e. for interventions regarding the preparation of air quality plans, and how should their preparation and implementation be coordinated? In case of possible combinations of interventions, what considerations should be taken into account?

2.5 Intervention area M: How to assess and address transboundary air pollution in local /regional air quality management?

Shortcomings identified in relation to intervention area M:

The AAQ Directives include only a limited mandate for action concerning local/regional air quality problems caused by cross-border air pollution and/or transboundary air pollutant precursors. Air quality plans do not always address all sources effectively: local air quality can be impacted by emissions outside local control – this requires reliable assessments of transboundary contributions. Progress in monitoring over the past decade has also improved air quality data on transboundary contributions to exceedance situations, resulting in potential for more coordinated action.

[Note that this primarily relates to governance shortcomings and assessment shortcomings identified in the evaluation of the AAQ Directives.]

[Also note that 'Intervention area M: How to assess and address transboundary air pollution in local /regional air quality management?' relates to both policy areas 2 and 3, but is included under policy area 2 only.]

* 29. I wish to reply to questions on intervention area M:

- Yes
 No

30. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

In order to address the above identified shortcomings, we ask your views on the following potential interventions:

- (M1) Require the use of an agreed methodology when assessing transboundary air pollution /contributions to local/regional air pollution.
- (M2) Require transboundary cooperation and joint action on air quality if assessments of transboundary air pollution/contributions above certain thresholds (to be defined)

31. **Intervention M1: Require the use of an agreed methodology when assessing transboundary air pollution/contributions to local/regional air pollution.**

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
 To some extent
 To a large extent
 Fully
 No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

A harmonised method to measure transboundary pollution would be necessary to ensure the validity of air quality data, to share that information among Member States and neighbouring countries and to disseminate it to local citizens.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

32. Intervention M2: Require transboundary cooperation and joint action on air quality if assessments of transboundary air pollution/contributions above certain thresholds (to be defined)

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

33. Do you have any other suggestions for **intervention area M**, i.e. for interventions regarding transboundary air pollution in local/regional air quality management? In case of possible combinations of interventions, what considerations should be taken into account?

2.6 Intervention area E: What legal tools should be available to address breaches of the obligations?

Shortcomings identified in relation to intervention area E:

The current Ambient Air Quality Directives require Member States to apply effective, proportionate and dissuasive penalties in case of infringements of the obligations from the Directives. As there are still ongoing exceedances of EU air quality standards, this indicates that the current legal tools to address breaches of obligations are insufficient.

[Note that this primarily relates to governance shortcomings and implementation shortcomings identified in the evaluation of the AAQ Directives.]

* 34. I wish to reply to questions on intervention area E:

- Yes
- No

In order to address the above identified shortcomings, we ask your views on the following potential interventions:

- (E1) Introduce minimum levels for financial penalties.
- (E2) Introduce specific provisions that guarantee a right to compensation for damage to health.
- (E3) Set up a fund to be fed by the payment of penalties and which can be used to compensate material damage or finance air quality measures.
- (E4) Introduce an explicit 'access to justice' clause in the Ambient Air Quality Directives.

35. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

36. **Intervention E1: Introduce minimum levels for financial penalties (i.e. amounts that would need to be adjusted per Member State)**

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

It is important to ensure penalties that are equivalent, that compensate, the huge damage done to human health and the environment. Therefore, financial fines are fundamental corrective measures in cases of infringements of legal obligations i.e. insufficient action to address air pollution. Exemplary financial penalties can serve as an effective dissuasive measure and reinforce the implementation of the legal framework across the EU and demonstrate to the population that their health is of paramount importance for the EU and the different levels of governance.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

37. Intervention E2: Introduce specific provisions that guarantee a right to compensation for damage to health

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

Individuals must obtain the right to compensation by their national authorities for damage to health related to air pollution, as well as open access to justice for relevant matters. The recording of air pollution as a direct cause of death (as in the case of a British child with asthma in 2013), should gradually become the norm across all EU Member States.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

38. Intervention E3: Set up a fund to be fed by the payment of penalties and which can be used to compensate material damage or finance air quality measures

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

While this is an interesting idea, such a measure pre-requires a solid framework of penalties and the procedures (administrative, legal and other) ensuring that these penalties are duly paid where appropriate.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

39. **Intervention E4: Introduce an explicit ‘access to justice’ clause in the Ambient Air Quality Directives**

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

Open access to justice must be ensured for both groups and individual citizens, in cases of persistent air pollution exceedances or key air pollution events where authorities failed to act effectively.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

40. Do you have any other suggestions **for intervention area E**, i.e. for interventions regarding legal tools that should be available to address breaches of the obligations? In case of possible combinations of interventions, what considerations should be taken into account?

2.7 Intervention area F: How to best inform the public on air quality?

Shortcomings identified in relation to intervention area F:

Despite public interest, a growing body of evidence and rapidly evolving communication technology, information on air quality, associated health impacts and measures to address exceedances is not always readily available to the public or in an accessible format.

[Note that this primarily relates to information shortcomings identified in the evaluation of the AAQ Directives.]

* 41. I wish to reply to questions on intervention area F:

- Yes
- No

42. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

In order to address the above identified shortcomings, we ask your views on the following potential interventions:

- (F1) Introduce more specific requirements to ensure regular reporting of up-to-date data / information (instead of allowing Member States to report data as available).
- (F2) Require Member States to provide specific health / and health protection information to public as soon as exceedances occur.
- (F3) Mandate specific communication channels with citizens including user-friendly tools for public access to air quality and health risks information and monitoring to use (for example, smartphone apps and/or social media dedicated pages).
- (F4) Require Member States to use harmonised air quality index bands.

43. **Intervention F1: Introduce more specific requirements to ensure regular reporting of up-to-date data / information (instead of allowing Member States to report data as available)**

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

Requirements must be introduced to ensure that citizens have access to real-time information on air pollution, publicly available via open and established channels. This includes natural pollutants such as pollen, sand/dust storms, and volcanic emissions, accompanied by health-related information thresholds. Specific focus should be given to monitoring and information should be reinforced in pollution hot spots and densely populated areas.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

44. Intervention F2: Require Member States to provide specific health / and health protection information to public as soon as exceedances occur.

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

Information on air quality must prioritise prevention and the protection of health. Therefore, communicating about pollution levels is not enough in itself: rather, it must contain health-related messaging and recommendations targeted to vulnerable groups such as chronic respiratory patients, children, and the elderly. Based on rigorous monitoring, national authorities must be transparent and committed in minimizing the exposure of the population to dangerous pollutants during exceedance periods. Given its importance for public health, the provision of air quality information should be legally binding.

Moreover, it is important that information is disseminated also proactively, in light of an increased imminent risk of exceedance. As mentioned above, information on natural pollutants such as pollen and sand/dust storms must also be provided to the public, with a view to preventing adverse health effects in vulnerable individuals.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

45. Intervention F3: Mandate specific communication channels with citizens including which user-friendly tools for public access to air quality and health risks information and monitoring to use (for example, smartphone apps and/or social media dedicated pages)

a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

The obligation to inform the public must lead to the creation of an ecosystem of communication channels to share air quality information, all of which must be open, free, transparent and user-friendly, ensuring broad access for all. Latest technological tools, such as applications and social media, should be combined with more conventional means, such as text messages and weather forecasts offered in the TV. Information can also be synchronised and channelled via eHealth and mHealth tools that facilitate self-management of diseases, such as the connected inhaler of MyAirCoach.

In the event of pollution peaks, massive SMS to subscribed recipients would be particularly important for health protection. Moreover, settings gathering vulnerable groups such as hospitals, day-care centres and schools, as well as vulnerable communities such as patient groups, should be part of the dissemination process and included in the short-term action plans.

Existing EU-wide tools, such as the EU Air Quality Index and its application, must become better known through intensive promotion across the society; and also further elaborated to include pollution warnings and information tailored to vulnerable groups.

Finally, the new framework on air quality information must be tightly linked to the emerging EU common digital spaces such as the -currently under construction- European Health Data Space (EHDS). External data such as air quality and weather forecasts should be integrated to enable better access to information for the public (you can find relevant recommendations in the EHDS Policy Briefing of the European Lung Health Group: https://breathevision.eu/images/ELHG_Policy_Brief_-_European_Health_Data_Space_2022.pdf).

- c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

46. **Intervention F4: Require Member States to use harmonised air quality index bands**

- a. To which extent would this intervention **address the above identified shortcomings?**

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

- b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

The EU is fundamental in ensuring the harmonisation of air quality index bands across all EU Member States. As in every other policy area, harmonised information across the board can significantly increase predictability and common understanding of the public, leading to better safety and health outcomes for all. A common approach on how to use these bands is crucial to providing harmonised information. Equally important is that pollutant concentrations must be translated into specific health threats and messages, at the example of the Canadian Air Quality Index.

- c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU,

national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

47. Do you have any other suggestions **for intervention area F**, i.e. for interventions to best inform the public on air quality? In case of possible combinations of interventions, what considerations should be taken into account?

More than half (54%) of people living in Europe are not well-informed on air quality (Special Eurobarometer 497). There needs to be a combination of measures, in order to address the current gaps and improve access to the public. Information must include natural pollutants such as pollen, sand/dust storms and volcanic emissions, for which there is no scope currently.

2.8 Policy area 2 – cross-cutting questions

48. Do you have any additional inputs and/or information regarding costs of the interventions presented under Policy Area 2?

49. Please indicate which interventions should be implemented together due to their co-dependency, if any? (e. which interventions critically depend on each other for their successful implementation)

50. Do you have any other comments regarding Policy Area 2? Please also upload any supporting evidence or material you feel is pertinent to the discussion of issues and impacts in this area:

There can be no full protection of health from air pollution without addressing the major concerns around Indoor Air Quality (IAQ). Indoor pollutants include mould, dust, volatile organic compounds mostly present in construction material and detergent products; emissions from the use of solid fuels for heating and cooking; tobacco smoke; and, of course, outdoor pollutants. All of them are linked with triggering and/or the exacerbation of chronic respiratory diseases such as allergy, asthma and chronic obstructive pulmonary disease (COPD). Even more importantly, they can be present anywhere, at home, in public transport, in the workplace, or at public closed spaces.

Addressing IAQ means to prioritise health and coordinate actions across sectors and policies, including -but not limited to- the legislation on buildings and renovations, chemicals, product labelling, and smoke-free environments. Taking IAQ considerations into account will help the EU move towards a truly air quality framework strategy that is exhaustive and integrated.

Please upload your file(s)

Policy area 3: Strengthening of air quality monitoring, modelling and plans

The Ambient Air Quality Directives have guided the establishment of a robust system for air quality assessment and have framed competent authorities' action to achieve cleaner air via air quality plans (i.e. the measures taken when and where exceedances occur).

However, the criteria on air quality monitoring and modelling could be refined to increase the comparability of air quality data. This revision of EU rules will explore solutions to improve, simplify and increase precision and coherence of requirements with regard to air quality monitoring and modelling, and options to facilitate further the effectiveness of air quality plans.

Policy options and potential interventions under this policy area aim to strengthen air quality monitoring, modelling and plans, including interventions addressing shortcomings already identified elsewhere, namely shortcomings regarding health outcome, implementation, governance, air quality assessment and information.

The questions under policy area 3 cover:

- **Intervention area G:** How to improve air quality assessment regimes, including the scope to combine monitoring, modelling and other assessment methods
- **Intervention area H:** How to improve the minimum number and type of sampling points required for measuring air pollution concentrations?
- **Intervention area I:** How to ensure continuity in the monitoring of air quality?
- **Intervention area J:** How to ensure the correct micro- and macroscale siting of monitoring stations?
- **Intervention area K:** Which requirements on data quality are needed to assess and report air quality?
- **Intervention area L:** Which additional air pollutants should be measured and to what extent should monitoring requirements be expanded?
- **Intervention area N:** Which minimum information should be included in an air quality plan?

[Note that 'Intervention area M: How to assess and address transboundary air pollution in local/regional air quality management?' related to both policy areas 2 and 3, is included under policy area 2 above.]

3.1 Intervention area G: How to improve air quality assessment regimes, including the scope to combine monitoring, modelling and other assessment methods?

Shortcomings identified in relation to intervention area G:

- Flexibilities may sometimes impact the comparability of data for the assessment of air quality.
- Modelling ability has improved which allows for much more detail.
- Indicative measurements can more readily be deployed to supplement reference samplers in monitoring networks.

[Note that this primarily relates to assessment shortcomings identified in the evaluation of the AAQ Directives.]

* 51. I wish to reply to questions on intervention area G:

Yes

No

52. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

In order to address the above identified shortcomings, we ask your views on the following potential interventions:

- (G1) Allow / continue to allow the use of indicative monitoring to substitute fixed monitoring as part of air quality assessment;
- (G2) Make the use of air quality modelling mandatory as part of air quality assessment (in some circumstances);
- (G3) Require a regular review of the assessment regime following clear criteria defined in the Directive.

53. Intervention G1: Allow / continue to allow the use of indicative measurements to substitute fixed monitoring as part of air quality assessment.

a. i To which extent would this intervention **address the above identified shortcomings**?

- Not at all
 To some extent
 To a large extent
 Fully
 No opinion

a. ii Under which circumstances could **indicative measurements** substitute fixed monitoring?

	Not at all	To some extent	To a large extent	Fully	No opinion
1) Where there is a need to measure air quality but it is not possible to place a fixed monitoring station that meets the requirements of the Directive	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) Where the combination of different measurements (e.g. via data fusion) allows reaching data quality objectives	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

To enable effective assessment and action, data on air pollution need to be obtained via rigorous methods. Indicative measurements as the main source of information must be chosen only in exceptional cases, while serving as complementary in broader terms.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

54. Intervention G2: Make the use of air quality modelling mandatory as part of air quality assessment (in some circumstances)

a. i To which extent would this intervention **address the above identified shortcomings**?

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

a. ii Under which circumstances should **air quality modelling** be mandatory?

	Never	In some instances	In most instances	Always	No opinion
1) For short term air quality forecasting (up to a few days ahead)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) For assessment of air quality for compliance checking purposes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3) For air quality mapping ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) For evaluation of monitoring network design ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5) For estimation of population exposure ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6) For source apportionment estimations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7) For assessment of long-range air pollutant transport ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8) For future projections in support of air quality management and planning?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9) In circumstances where the placement of fixed monitoring is not compliant with the Directive?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10) Other (please specify below)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

55. Intervention G3: Require a regular review of the assessment regime following clear criteria defined in the Directive

a. i To which extent would this intervention **address the above identified shortcomings**?

- Not at all
- To some extent
- To a large extent
- Fully
- No opinion

a. ii What should such **regular assessment** be based on?

	Not at all	To some extent	To a large extent	Fully	No opinion
1) Based on fixed monitoring ?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) Based on indicative measurements ?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3) Based on objective estimation ?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) Based on air quality modelling ?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

a. iii At what interval should such regular assessment be done?

- Every 10 years
- Every 5 years
- Every 3 years
- Every year
- No opinion

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU,

national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

56. Do you have any other suggestions for intervention area G, i.e. for interventions to improve air quality assessment regimes, including the scope to combine monitoring, modelling and other assessment methods? In case of possible combinations of interventions, what considerations should be taken into account?

Information from monitoring stations is of great importance, as it provides insight into air pollution levels at the local level. Today a large number of monitoring stations across the EU do not provide data, which points to the need of clear provisions regarding repair and/or replacing of defunct stations.

Moreover, the EU should support the integration of citizen science in air quality monitoring, as a complementary tool to official monitoring regimes. One way to do it is to support the uptake of low-cost but scientifically proven monitors that are already available today in the market. Such tools can prove quite effective at the individual level if a person inhabits a pollution hot spot or during periods of pollution peaks. Digital and data-driven applications can also support the monitoring of air quality and natural pollutants.

3.2 Intervention area H: How to improve the minimum number and type of sampling points required for measuring air pollution concentrations?

Shortcomings identified in relation to intervention area H:

- The set minimum number of sampling points for pollutants may impact the quantity of data for the assessment of concentrations across varying locations in zones.
- The various types of monitoring stations and/or sampling point locations are sometimes not sufficiently clearly defined (which may affect the comparability of data).

[Note that this primarily relates to assessment shortcomings identified in the evaluation of the AAQ Directives.]

* 57. I wish to reply to questions on intervention area H:

- Yes
 No

3.3 Intervention area I: How to ensure continuity in the monitoring of air quality?

Shortcomings identified in relation to intervention area I:

- There is no requirement to continue monitoring once a sampling point is established to measure air pollution trends over the longer term.
- There is no protocol to follow should a sampling point have to be re-located due to, for example, infrastructure development, which leads to inconsistency in data.

[Note that this primarily relates to assessment shortcomings identified in the evaluation of the AAQ Directives.]

* 63. I wish to reply to questions on intervention area I:

- Yes
 No

3.4 Intervention area J: How to ensure the reliable micro- and macro-scale siting of sampling points?

Shortcomings identified in relation to intervention area J:

- The criteria micro- and macro-scale siting of sampling points offer some flexibility to competent authorities so that air quality monitoring networks best correspond to local circumstances.
- Concerns have been raised that the criteria as defined offer too much leeway to competent authorities and that more restrictively defined siting criteria would help ensure a higher degree of confidence in the comparability of monitored air quality.
- While a number of ambiguities as regards the siting criteria have been identified, these have not been found to generally have led to systemic shortcomings in the monitoring network.

[Note that this primarily relates to assessment shortcomings identified in the evaluation of the AAQ Directives.]

* 70. I wish to reply to questions on intervention area J:

- Yes
 No

3.5 Intervention area K: Which requirements on data quality are needed to assess and report air quality?

Shortcomings identified in relation to intervention area K:

- Monitoring data that does not meet current data quality objectives/siting criteria are often not reported, leading to potential inconsistency between information published nationally and at EU level;
- Models are used but there is no requirement to meet a data quality objective for modelling data, potentially leading to confusion over robustness of assessments.

[Note that this primarily relates to assessment shortcomings identified in the evaluation of the AAQ Directives.]

* 76. I wish to reply to questions on intervention area K:

- Yes
 No

3.6 Intervention area L: : Which additional air pollutants should be measured and to what extent should monitoring requirements be expanded?

Shortcomings identified in relation to intervention area L:

- There is no requirement to monitor pollutants of emerging concern, leading to a possible lack of data on related pollutant levels – and no mechanism to add additional pollutants to be monitored;
- There is lack of monitoring sites that comprehensively measure all air pollutants in urban areas, i.e. identified as research supersites, to facilitate understanding of air pollution science.

[Note that this primarily relates to assessment shortcomings and information shortcomings identified in the evaluation of the AAQ Directives.]

* 83. I wish to reply to questions on intervention area L:

- Yes
 No

84. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

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In order to address the above identified shortcomings, we ask your views on the following potential interventions:

- (L1) Require monitoring stations that measure continuously certain emerging air pollutants (e.g. called “supersites” across the Member States);
- (L2) Require monitoring of additional air pollutants at a minimum number of sampling points and with relevant data quality requirements;
- (L3) Expand the list of required and/or recommended volatile organic compounds (VOCs) to measure.

85. Intervention L1: Require monitoring stations that measure continuously certain emerging air pollutants (e.g. called “supersites” across the Member States).

a. i To which extent would this intervention **address the above identified shortcomings**?

- Not at all
 To some extent
 To a large extent
 Fully
 No opinion

a. ii What specific considerations should guide the establishment of such “supersites”?

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	1 supersite per ca. 5 million inhabitants	1 supersite per ca. 10 million inhabitants	Not dependant on population (but 1 per MS)	No supersites needed	No opinion
Establishment of the number of supersites should be guided by potential exposure?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

a. iii What specific considerations should guide the establishment of such “supersites”?

	Urban only	Rural only	Both urban and rural	No supersites needed	No opinion
Supersites should be located at which locations ?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

86. Do you have any other suggestions for interventions to best inform the public on air quality? In case of possible combinations of interventions, what considerations should be taken into account?

Monitoring must include emerging pollutants such as ammonia, black carbon and ultra-fine particles, all of which are linked to damaging effects on human health and the environment.

Furthermore, the scope of monitoring must expand to also provide real-time estimates of natural pollutants' concentrations such as pollen, sand/dust, and volcanic emissions. These monitoring requirements should be accompanied by the setting of pollution thresholds above which the public must be informed.

87. Intervention L2: Require monitoring of additional air pollutants at a minimum number of sampling points and with relevant data quality requirements.

a. i To which extent would this intervention **address the above identified shortcomings**?

- Not at all
- To some extent
- To a large extent
- Fully

No opinion

a. ii Which **additional air pollutants** should be monitored, and where?

	Not at all	At selected "supersites"	At one sampling point per zone	Similar to other air pollutants	No opinion
Ultrafine particles?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Amonia?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Fine combustion particles?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Oxidative potential?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Additional heavy metals (please specify below which)?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hydrogen sulphide (H2S) and other reduced sulphur compounds (TRS)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nitro-PAHs?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pesticides?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify below)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

Intervention L3: Expand the list of required and/or recommended volatile organic compounds (VOCs) to measure.

a. To which extent would this intervention address the above identified shortcomings? Fully Volatile Organic Compounds (VOCs) are found in both outdoor and indoor environments. There is strong evidence that exposure to VOCs may cause upper and lower respiratory symptoms such as respiratory tract irritation, and contribute to the worsening of asthma. Their monitoring is, therefore, required in order to safeguard the right to be informed and the right of health.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

89. Do you have any other suggestions for **intervention area L**, i.e. for interventions on additional pollutants to monitor and expanding monitoring requirements? In case of possible combinations of interventions, what considerations should be taken into account?

3.7 Intervention area N: Which minimum information should be included in an air quality plan?

Shortcomings identified in relation to intervention area N:

- Air quality plans do not always address all sources effectively; some measures may be ineffective, or seem disproportionate;
- There is lack of quantification of the impact of measures in air quality plans and often it is not clear if measures will achieve compliance as soon as possible;
- Wider impacts of air quality plans are not always clear especially in relation to the expected health benefits.

[Note that this primarily relates to information shortcomings identified in the evaluation of the AAQ Directives.]

* 90. I wish to reply to questions on intervention area N:

- Yes
 No

91. How do you see the above shortcomings developing without changes to the Ambient Air Quality Directives?

In order to address the above identified shortcomings, we ask your views on the following potential interventions:

- (N1) Refine the minimum information to be included in an air quality plan.

92. **Intervention N1: Refine the minimum information to be included in an air quality plan.**

a. i To which extent would this intervention **address the above identified shortcomings?**

- Not at all

- To some extent
- To a large extent
- Fully
- No opinion

a. ii To which extent would the below specific interventions **address the above identified shortcomings?**

	Not at all	To some extent	To a large extent	Fully	No opinion
1) Require a quantification of emission reduction in t/a for air quality measures	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) Require estimates of concentration reduction of planned air quality measures in µg/m ³ at all sampling points in exceedance	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3) Require an assessment of health impacts of the status-quo and after the implementation of air quality measures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
4) Require an emission source apportionment of all relevant sectors that contribute to the exceedance (in line with the existing National Air Pollution Control Programmes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
5) Require that an assessment of emissions and the responsible actors for those emissions should be carried out (e.g. city level, regional level, national level, and transboundary contributions)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
6) Require all relevant competent authorities that are responsible for implementing measures of the air quality plan to sign a “commitment clause” in the air quality plan	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
7) Other (please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

b. Please **elaborate on the answer** you provided to the question above (reasons for why the intervention may/may not address the identified shortcomings).

It is of utmost importance that air quality plans need to include a health impact assessment at any stage of implementation. First and foremost, air quality is a health challenge that affects the whole population. Therefore, it is crucial to be transparent to the public about the air quality measures that are effective and those that are not, and steer corrective action where necessary.

Accordingly, these health assessments should be drawn up with the input of all relevant stakeholders, including competent authorities, representatives from polluting industries, civil society and individual citizens.

c. Please elaborate on the **administrative costs expected** to result from this intervention (types of costs and costs estimates, if available). Please specify the governance level your estimates concern (EU, national, regional, local) and where possible, please provide monetary estimates (in EUR, or a rounded or range of costs where accurate estimates are unavailable).

94. **Do you have any other suggestions for intervention area N, i.e. for interventions related to which minimum information should be included in an air quality plan?** In case of possible combinations of interventions, what considerations should be taken into account?

3.8 Policy area 3 – cross-cutting questions

95. Do you have any additional inputs and/or information regarding costs of the interventions presented under this Policy Area 3?

96. **Please indicate which interventions should be implemented together due to their co-dependency, if any?** (i.e. which interventions critically depend on each other for their successful implementation)

Air quality plans need to be regularly assessed and updated, with the participation of related stakeholders. Moreover, clarifying the level of governance where plans (both long-term and short-term) are set, can facilitate the issue of liabilities when there is breach of obligations arising from the air quality legal framework. Air quality information to the public should be easily accessible, timely, prevention-oriented, and tailored to vulnerable groups. An empowered public is a well-informed public, with access to justice and compensation for health damages as a result to air pollution.

Harmonised air quality index bands can help towards common assessment methods for transboundary pollution, therefore increasing health protection for people living in outermost EU regions. They can also prove useful in addressing accountability and liability issues.

97. Do you have any other comments regarding Policy Area 3?

Please also upload any supporting evidence or material you feel is pertinent to the discussion of issues and impacts in this area:

Please upload your file(s)

Contact

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