

#### **1.1.1.1 Evidence Gathering Questionnaire for the Fitness Check of the Ambient Air Quality (AAQ) Directives**

### **Introduction**

The fitness check of the [EU Ambient Air Quality Directives](#) (2008/50/EC, 2004/107/EC) undertaken by the European Commission involves a consultation strategy which includes an online public consultation, a targeted consultation and two stakeholder workshops. More information about the consultation process [can be found here](#).

This fitness check looks at the performance of the two complementary EU Ambient Air Quality (AAQ) Directives (Directives [2008/50/EC](#) and [2004/107/EC](#)). These Directives set air quality standards and requirements to ensure that Member States monitor and/or assess air quality on their territory, in a harmonised and comparable manner. It also considers the corresponding Implementing Decision [2011/850/EC](#) and Commission Directive [EU/2015/1480](#).

The fitness check evaluates the implementation of the AAQ Directives allowing the public to participate effectively through consultation activities. The Questionnaire presented below is a key tool to enable you to provide this evidence.

During the [public consultation](#) underpinning the fitness check of the EU Ambient Air Quality Directives, you will also have the opportunity to contribute by filling out an online questionnaire via EU Survey. The European Commission has launched this online public consultation to support the Fitness Check of the EU Ambient Air Quality Directives in May, which will run until July 2018. You are welcome to fill in that survey as well, but please be aware that the two exercises are of a different nature. The online public consultation collects views and opinions, whereas the questionnaire presented below aims to collect evidence, meaning facts or information (such as case studies, research findings, infringement cases, case law and data) which support a point or position.

As part of the stakeholder consultation to underpin the fitness check the EU Ambient Air Quality Directives, the European Commission will also organise on 18 June 2018 a **Stakeholder Workshop** to Support the Fitness Check of the EU Ambient Air Quality Directives. The purpose of a public consultation in general and the stakeholder workshop in particular is to assist in gathering evidence, to confirm the issues for the evaluation and to solicit views on the performance and implementation of the EU Ambient Air Quality Directives. Your input to the workshop, along with input from other citizens and stakeholders, will also be taken into account in the evaluation.

### **The questionnaire**

The questionnaire has been prepared to gather evidence-based information for the evaluation. It is being sent out to all Member States and selected key stakeholders across the EU.

Please answer all questions that you consider **relevant to the situation in your country/region/sector/area of activity, based on direct experience supported by evidence**. **You are not expected or obliged to answer all questions.**

Where possible, quantitative evidence should be provided. Where this is not possible, semi-quantitative or qualitative evidence is welcome.

We would ask you to answer the questionnaire in English. However, any documents submitted as evidence can be in any official EU language. In your answers, please specify why and how the evidence and documents provided are relevant for the specific question.

Please **provide full reference details for all documents cited or referred to** in your answers: author / editor names and their initials, full titles, full names of journals, relevant page numbers, publishers and place of publication. If the document is available online, please add a URL link. If it is unpublished information, please supply a copy or relevant excerpt. When citing in short a document for which you have already provided full reference details, please ensure that we can distinguish between references that have the same author(s) and year of publication. You may choose to provide the full reference of cited documents in footnotes or in notes numbered and linked to a reference list at the end of the questionnaire. If you send documents as attachments to the email, please give them a name that includes the number of the question(s) they are related to.

#### **Deadline for submission of the questionnaire**

We kindly ask you to fill in the questionnaire in this document and submit it by sending your response within 7 weeks (i.e. before July 24th, 2018)<sup>1</sup> using the email address [AAQ.Fitness.Check@milieu.be](mailto:AAQ.Fitness.Check@milieu.be).

We appreciate that it may not be possible to provide complete answers to all the questions and collect all the evidence you may wish to provide within this timeframe. If that were the case, we would appreciate if you send us the completed questionnaire by the deadline highlighting where a document providing evidence to a specific point will be sent at a later stage. Please note that it will not be possible to take into account questionnaires received after the deadline.

The evidence gathered through this questionnaire will be vital to the overall process. On the basis of the initial responses received, follow-up interviews may be organised to seek clarification or additional information if required.

**Thank you in advance for your contribution.**

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<sup>1</sup> The deadline has been extended until 15 September 2018

# QUESTIONNAIRE

## A. General Information

Please answer ALL questions in this table

	Answer
<b>Organisation:</b>	Ministry of Infrastructure and Water Management
<b>Date:</b>	
<b>Country</b> (and, if applicable, region) <b>represented:</b>	The Netherlands
<b>Name of contact for enquiries</b> (including follow-up interview if required):	
<b>Contact email address:</b>	
<b>Contact telephone number:</b>	
<b>Languages spoken fluently by contact person:</b>	English, Dutch
<b>Type of organisation you represent:</b> EU authority or agency / Member State authority or agency / business or business association/ educational or scientific organisation / environment NGO/ health NGO / individual expert / other (please specify).	Member state authority or agency
<b>Sector represented:</b> environment / health / agriculture / waste/ transport / energy / hydrocarbon extraction and refining / manufacturing / other (please specify)	Environment
<b>Relevant additional information (optional)</b>	

## B. EVALUATION / FITNESS CHECK questions

**Please answer all questions that are relevant to you and for which you can provide informed insights from direct experience and/or supporting evidence.** Supporting evidence should be provided in the form of references and/or web links.

The Fitness Check intends to examine the performance of the AAQ Directives in relation to five evaluation criteria: relevance, effectiveness, efficiency, coherence and EU added value.

- **Relevance:** including an assessment of extent to which the AAQ Directives still set appropriate objectives, address the most pressing air pollutants, and set meaningful air quality standards to protect human health and ecosystems in accordance with the evolving scientific understanding: do the objectives and approaches as laid out in the AAQ Directives.
- **Effectiveness:** this fitness check will evaluate to what degree the AAQ Directives acted as an incentive to implement effective measures to improve air quality, and thus reduce the adverse impacts of air pollution. It will also question to what extent factors influencing the observed achievements can be linked to the EU intervention, including any issues with non-compliance.
- **Efficiency:** after identifying the main cost and benefit categories, the fitness check will evaluate to what degree the benefits of improved air quality justify the costs. It will also assess whether there have been significant differences in costs (or benefits) between Member States, and if so, what is causing them. Also, this fitness check will evaluate whether the monitoring and reporting approaches mandated by the AAQ Directives (and their respective implementation) are fit for purpose.
- **Coherence:** five levels of coherence will be considered, covering the extent to which the Directives are coherent internally (i.e. within each Directive), between each other, with overarching EU Clean Air policy (including with the national emission limits via Directive 2016/2284, and emission standards established for key pollution sources), other EU legislation (e.g. on transport, energy, agriculture or nature protection), and international commitments.
- **EU value added:** this fitness check will assess to which degree common EU air quality standards and comparable monitoring, reporting and assessment regimes have enabled Member States to take successful action to improve beyond what would have been possible without EU action, and whether the current distribution of responsibilities between EU, Member State, regional and local levels, respectively, is an effective one.

## Relevance

### 1. To what extent do the AAQ Directives still address the current needs of citizens in your Member State/in the EU?

*Please provide your answer on a 1-5 scale, where 1 is “to no extent” and 5 is “to a very large extent” and elaborate. If possible, provide evidence to support your statement (e.g. national strategic documents, surveys, studies, etc.)*

Extent on a 1-5 scale: 4

Air quality in Europe, and in the Netherlands in particular, has improved considerably over the past decade. Currently the European air quality standards are met in most parts of the Netherlands. However, nitrogen dioxide concentrations still exceed the limit value at a number of busy inner city locations. But even with concentrations below the European limit values considerable health risks remain. In the Netherlands concentrations in the air of particulate matter and nitrogen dioxide still account for a shortening of the average life expectancy of an average 13 months compared to a situation without pollution. Therefore a permanent improvement of air quality is needed towards the WHO's air quality guidelines to protect human health. For this purpose The Netherlands is currently preparing a plan of action. Although compliance with the EU limit and target values remains important more attention should be paid to reducing the overall exposure of the population to air pollution, leading to health benefits for the entire population. To monitor progress a health indicator should be developed, which can also be helpful for choosing the most cost-effective measures. Since air pollution is not hindered by national or city boundaries a joint European policy and cooperation and exchange between the Member States remain important. The air quality directives, in combination with the NEC-directive and other source directed policies remain crucial in an European approach towards cleaner air.

Ref:

- [Gezondheidswinst door schonere lucht, Gezondheidsraad – 23 januari 2018](#)
- [Luchtkwaliteit en gezondheidswinst, RIVM - 21 april 2015](#)

### 2. Do the AAQ Directives address all relevant pollutants?

*If relevant please provide suggestions for pollutants which should be included/excluded from the scope of the Directives and provide evidence for your proposition (e.g. links to studies regarding the health or other damaging effects of specific pollutants, etc.)*

In the previous years, the focus has been on reaching the limit and target values of NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2,5</sub> and O<sub>3</sub>. This has led to an increased focus on bringing air pollution below these limit and target values, and less on an overall improvement of the air quality for the purpose of improving human health. From a health perspective, it would be beneficial to focus more on human health criteria and to take into account certain pollutants and components that are not addressed by the AAQ Directives. Aquila brought up ultrafine particles, black smoke, ammonia as emerging species, but these have not (yet) been adopted.

In the current AAQ Directives there is little or no regulation of the components of particulate matter, in particular black carbon which is also an important short-lived climate pollutant. Also lacking are emission from brake and tire wear in road transport and limits on pollutants, such as PAHs and ultrafines. We also may need more information of the chemical composition of the various PM-

fractions and their health effects. (Ref: Eionet meeting 13-05-2018; Health effects of particles and other pollutants-impacts of study methods and sources – Hans Orru, Tartu University). A consideration of emissions under realistic use scenarios would be beneficial to take effective measures from a cost perspective and a public health perspective.

There is little regulation of ultrafine particles or recognition of the increased health hazard these may constitute. There is not yet a clear scientific conclusion on the health effects of ultrafine particles (Clifford et al, 2018). In the Netherlands, a study on this subject is being conducted by the National Institute for Public Health and the Environment (RIVM). The WHO Air Quality Guidelines 2005 state that: ‘While there is a considerable toxicological evidence of potential detrimental effects of ultrafine particles (UFP) on human health, the existing body of epidemiological evidence is insufficient to conclude on exposure/response relationship to UFP’. In the Netherlands, a study on this subject is being conducted by the National Institute for Public Health and the Environment (RIVM).

Ref:

- [Particulate matter beyond mass: recent health evidence on the role of fractions, chemical constituents and sources of emission. 2013 https://www.ncbi.nlm.nih.gov/pubmed/24304307](https://www.ncbi.nlm.nih.gov/pubmed/24304307)
- [https://www.rivm.nl/Onderwerpen/F/Fijn\\_stof/Ultrafijn\\_stof/Onderzoek\\_Gezondheidsrisicos\\_Schiphol](https://www.rivm.nl/Onderwerpen/F/Fijn_stof/Ultrafijn_stof/Onderzoek_Gezondheidsrisicos_Schiphol)

### 3. Are the targets, thresholds and obligations set out in the AAQ Directive set at as such a level so as to protect human health and environment?

*Please elaborate and provide evidence to support your statement.*

The AAQD defines the primary mechanism for determining whether air quality is harmful to health or the environment by introducing a series of concentration limit values specific to each of the regulated pollutants. The premise being that if the concentration of an air pollutant is less than the limit value then the air quality is acceptable. However, even below the limit values health effects remain and there is no threshold below which no effects occur. Moreover the population is usually exposed to a mixture of pollutants with their respective health effects. For certain pollutants, principally PM<sub>10</sub> and PM<sub>2.5</sub>, but also ozone and sulphur dioxide (SO<sub>2</sub>) the current EU limit values are less stringent than the guideline values suggested by the World Health Organisation as having no or minimal risk to human health (WHO). Therefore the Netherlands aims at improving air quality beyond the EU norms, towards the WHO advisory values, but without introducing more stringent legally binding limit values. When choosing policy instruments cost effectiveness will be taken into account.

NO<sub>x</sub> emissions from vehicles are regulated but there are concerns about the effectiveness of Euro 6 technologies including the proportion of NO<sub>2</sub> directly emitted from the tailpipe.

See also:

- [Luchtkwaliteit en gezondheidswinst – RIVM – 21 april 2015](#)
- [Gezondheidswinst door schonere lucht Gezondheidsraad – 23 januari 2018](#)

### 4. To what extent are the provisions of the AAQ Directives essential to deliver on key EU air quality priorities, as identified in the Communication on a Clean Air Programme for Europe (i.e. to achieve full compliance with existing air quality standards in the short term and to ensure no exceedance of the WHO guideline levels for human health and of the critical loads and levels which mark the limits of ecosystem tolerance in the long term)? Which elements in the Directives are essential to deliver on these priorities and which elements (if any) have become redundant?

*Please elaborate and provide evidence to support your statement.*

Through the Directives, Member States have been required to draft and implement Air Quality Action Plans. In the Netherlands, this is coordinated in the National Air Quality Co-operation Programme (NSL). In this programme, the national government, provinces and city regions cooperate, share investment and contribute with measures and projects. Another key element is the obligation to monitor air quality and to report on a yearly base to the EU.

The requirement to draft Air Quality Action Plans and to monitor and report on air quality is considered essential to deliver on key EU air quality priorities. More attention could be paid to the coherence with other policy areas (like climate change and mobility), the cooperation between different levels of governance and the cooperation with the industry sector, the farming sector and citizens.

## Effectiveness

### 1. To what extent have the AAQ Directives achieved their objectives? What have been the main impacts linked to the achievement or failure to achieve of each objective?

- Objective 1) defining common methods to monitor and assess air quality.  
Expected output: representative, high quality monitoring of air quality in all MS.;
- Objective 2) assessing ambient air quality in order to monitor trends.  
Expected output: competent authorities ensure monitoring and assessment of air quality
- Objective 3) establishing standards of air quality to achieve across the EU.  
Expected output: clear, actionable Air quality standards are established and complied with for all the EU.
- Objective 4) ensuring that information on air quality is made public.  
Expected output: Reliable, objective, comparable information on air quality across the EU.
- Objective 5) maintaining good air quality, improving it where it is not good.  
Expected output: coherent action taken to avoid, prevent or reduce effect of poor air quality.

*For each objective, please evaluate the extent the expected output has been achieved. Please use a scale from 1 to 5, where 1 – to a very large extent, 5 – to no extent, and **describe the reasoning** behind the score. If possible, please provide evidence, e.g. (national) websites, action plans, surveys, study reports. For each objective, please also describe the impacts generated by their achievement, or the negative impacts of not achieving the objectives.*

#### **Objective 1) defining common methods to monitor and assess air quality.**

Extent on a 1-5 scale: 2

The use of standard methods/measurements are well defined in the regulations. However the use of models/objective estimations and sensors and their possible application for assessing the ambient air quality are marginally mentioned and worked out in the Directives as well as the protection of ecosystems and climate related compounds are marginally mentioned.

#### **Objective 2) assessing ambient air quality in order to monitor trends.**

Extent on a 1-5 scale: 1

The complex measurement of air quality in combination with well-defined standards ask for a competent authority. In the Netherlands the RIVM is the authority that since the early 70's operates the monitoring network.

#### **Objective 3) establishing standards of air quality to achieve across the EU.**

Extent on a 1-5 scale: 3

The definition of standards and the goals to achieve are clear. The obligation to implement them in national legislation has been effective. However many Member States only recently have, or still do not have, a proper action plan to improve air quality where it does not meet the standards. While the standards have been in force for years, PM<sub>10</sub> standard since 2005, NO<sub>2</sub> standard since 2010.



**Objective 4) ensuring that information on air quality is made public.**

Extent on a 1-5 scale: 3

The time frame required to publish validated measurement data via the EEA is relatively long. For a long time now, the Netherlands has had its own national platform in operation on which up-to-date (UTD)-data can be tracked. The Netherlands and other Member States completed the development of an app to inform citizens about current and expected air quality earlier than the EC app. For other Member States, the discussion within EEA/EIONET/IPR did trigger the creation of such an app.

Sites tracking UTD-data:

- <https://www.luchtmeetnet.nl/>
- <https://www.lml.rivm.nl/>

**Objective 5) maintaining good air quality, improving it where it is not good.**

Extent on a 1-5 scale: 3

The way in which the directive has been implemented in national regulations in the Netherlands has contributed to a considerable improvement of air quality. In addition, soon after the directive came into force, The Netherlands drew up a plan to tackle air quality exceedances. An important point for attention is the disappointing emission reduction of vehicles on the market. Emissions from vehicles are much higher than might be expected on the basis of Euro standards. As a result, many measures - such as (encouraging) accelerated replacement of old vehicles - have proved to be less effective. In addition, additional measures are needed as autonomous improvements in air quality have been lower.

**2. To what extent have the following provisions of the Directives contributed (or failed to contribute) to the achievement of the objectives?**

Objective 1) defining common methods to monitor and assess air quality.

- Provisions of the EU Ambient Air Quality Directives: common approaches on when, where and what to monitor (Articles 7, 8, 10, 11, 14(2) and Annexes III-VI and VII-X in Directive 2008/50/EC; Article 4 (7, 8, 9, 11, 13) and Annex III in Directive 2004/107/EC)

Objective 2) assessing ambient air quality in order to monitor trends.

- Provisions of the EU Ambient Air Quality Directives: delineation of responsibilities for assessment of air quality and definition of data quality objectives (Articles 3, 4, 5, 6, 9 and Annexes I-II in Directive 2008/50/EC; Article 4 (1, 2, 3, 4, 5, 6, 12) and Annexes II and IV in Directive 2004/107/EC)

Objective 3) establishing standards of air quality to achieve across the EU.

- Provisions of the EU Ambient Air Quality Directives: air quality standards (limit and target values, critical levels) (Articles 13, 14(1), 15, 16, 17(1) and Annexes VII, XI, XII-XIV) in Directive 2008/50/EC; Article 3 and Annex I in Directive 2004/107/EC)

Objective 4) ensuring that information on air quality is made public.

- Provisions of the EU Ambient Air Quality Directives: what (when) air quality information is to be reported (Articles 19, 26, 27, and Annexes XII and XVI in Directive 2008/50/EC; Articles 5, 7 in Directive 2004/107/EC).

Objective 5) maintaining good air quality, improving it where it is not good.

- Provisions of the EU Ambient Air Quality Directives: on how to act, what to do when standards are not met and to facilitate action to reduce transboundary pollution. (Articles 12, 17 (2,3), 18, 23, 24, 25 and Annex XV in Directive 2008/50/EC, Article 3(2,3) in Directive 2004/107/EC)

All objectives:

- Clarity of guidance
- Any other factors related to the Directives

*Please elaborate and provide examples or other evidence to support your statement.*

### **Objective 1) defining common methods to monitor and assess air quality.**

In some cases it may be that a station does not comply entirely with the regulations of the Directives because it was already sited before these regulations were introduced. It would be considered not cost-effective and sometimes geographically impossible to move these stations.

### **Objective 2) assessing ambient air quality in order to monitor trends.**

In March 2018 there was an agreement over the Commission Implementing Decision laying down rules for Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council as regards the reciprocal exchange of information and reporting on ambient air as part of the IPR Decision 2011/850/EU.

This document helped in the common understanding of the Annexes I and II of the directive 2008/50/EC and Annexes II and IV of the Directive 2004/107/EC, as there was a lot of discussion on how to interpret the Annexes over the past years.

### **Objective 3) establishing standards of air quality to achieve across the EU.**

The Netherlands strictly uses the air quality standards in the Directives 2008/50/EC and 2004/107/EC

### **Objective 4) ensuring that information on air quality is made public.**

The EEA uses the Member States UTD data to make data public using data viewers. The Netherlands also publishes its own UTD data on a national website. The use of a different interpretation of the UTD data (for example: calculating different Air Quality Indexes with the same UTD data) can lead to public questions. No use is made here of a common understanding in the EU.

Sites tracking UTD-data:

- <https://www.luchtmeetnet.nl/>
- <https://www.lml.rivm.nl/>

### **Objective 5) maintaining good air quality, improving it where it is not good.**

The Netherlands has used the provisions in the EU-directive 2008/50EC for drawing up the National Air Quality Cooperation Programme. Under this programme national, provincial and local governments cooperate and take measures to improve air quality and to comply with the EU limit and target values.

3. **What external factors (i.e. not related to the AAQ Directives) have contributed or hindered the achievement of the objectives?**

*Please elaborate by providing examples of the role these factors have played in the achievement of the objectives*

**Objective 1) defining common methods to monitor and assess air quality.**

The contribution of AQUILA and CEN working groups to the standardization of the regular (reference) measurements of air quality is useful and necessary; The harmonization of monitoring methods is supported by a well-balanced structure of intercomparison exercises organized by JRC for all Aquila members. The development of common understanding regarding the use of models by the FAIRMODE group has been useful and necessary.

**Objective 2) assessing ambient air quality in order to monitor trends.**

For the assessment of air quality, The Netherlands, in addition to measurements, use models/objective estimations and possibly sensors in the (near) future. The lack of regulation/legislation for models/objective estimations and eventually sensors is inconvenient because clear regulations and common understanding are needed in this area.

**Objective 3) establishing standards of air quality to achieve across the EU.**

The fact that, especially for PM<sub>10</sub> and PM<sub>2.5</sub>, the EU limit and target values are less stringent than WHO advisory values leads in several countries to discussions whether the EU norms are sufficiently protecting human health or stricter standards are needed.

**Objective 4) ensuring that information on air quality is made public.**

UTD data has been public in The Netherlands for many years, via a website that RIVM - the body that also carries out the measurements - manages or participates in managing. The Netherlands' National Air Quality Cooperation Program (NSL) also includes a monitoring obligation. An annual public report on air quality and progress on the NSL objectives is published.

**Objective 5) maintaining good air quality, improving it where it is not good.**

The emergence of cheaper sensors has increased the interest of some citizens in the subject of air quality. In addition, The Netherlands has a number of interest groups that regularly ask for attention to be paid to the subject of air quality and how to deal with yet remaining exceedances

## Efficiency

### 1 – What activities have taken place at a local level in your country since 2008 to ensure compliance with the limit values in the AAQ Directives?

*Where possible, please provide: a description of the type of activity required (e.g. development of clean air zones in 2012 to reduce NOx pollution); quantification of the amount of this activity taking place within the country (e.g. number of cities where this was required); a description of who was responsible for meeting the cost of the intervention (e.g. implementation costs borne by local and national authorities, with costs passed on to road transport users driving in the zones).*

Answer:

Activity	Quantification/Amount of Activity	Costs Borne By
<b>National Air Quality Cooperation Programme (NSL)</b>	<p>Covers the provinces Overijssel, Gelderland, Utrecht, Zuid-Holland, Noord-Brabant and Limburg and parts of Noord-Holland and Flevoland. NSL also involves all major cities within these provinces.</p> <p>NSL came into force in 2009 and is still in operation. It involves a combination of national, provincial and local measures to improve air quality. National measures include a.o. tax benefits for various types of vehicles fitted with a soot filter and stimulation of zero-emission mobility. Along several highways barriers were placed to prevent the spread of air pollution. Local measures include i.e. improvement of traffic circulation, environmental zones, electrification of public transport and scrapping scheme for older vehicles.</p> <p>An addition to the NSL, the “Aanpassing NSL 2018”, containing additional air quality measures, has been discussed with the parliament and will be adopted shortly.</p>	<b>Local, regional and national government</b>

For more information on NSL, we refer to the yearly reports (Monitoring rapportage 2010-2017) which can be found [here](#).

## 2 - What are the benefits (monetary and non-monetary) associated with implementation of the AAQ Directives in the Member States, and in the EU?

*Please indicate - supported by evidence (at local, regional or national level) - what types of benefits have resulted from the implementation of the AAQ Directives, at local, regional or national level. We are particularly interested in data associated with the specific actions taking place at a local level to ensure compliance with the limit values, as set out in Question 1. Please provide evidence, quantitative where possible, of benefits (preferably in monetary terms, but other quantitative -or qualitative- information is also welcome); briefly describe the methodology used to get to this information; describe who is affected by these benefits and where possible their distribution among stakeholders / sectors / population sub-groups.*

*Benefits from the directives can be considered in terms of new market opportunities, increased productivity and avoided costs. New market opportunities can arise for eco-innovative sectors linked to the production of pollution abatement devices. A healthier workforce would have an increased labour productivity, while agricultural yields can improve thanks to reduced pollution. Finally, health costs can be reduced, as well as buildings maintenance costs, through reduced air pollution. Ideally, information on these benefits would be as much as possible expressed in monetary terms, but it would also be very useful if expressed in quantitative terms (e.g. increased agricultural yield); in some case, we recognise that qualitative information would be most likely to be available. Please consider that some benefits can be determined by considering the costs of not implementing the Directives.*

*Please focus on the benefits arising from the Directives themselves (directly or indirectly), excluding any benefits resulting from achieving compliance with other air pollution legislation.*

### Answer:

Activity	Description of benefits	Monetary / non-monetary values	Methodology for calculating benefits	Distribution of benefits	Sources of information
<p>Directive 2008/50/EC sets binding standards for air quality. In the Netherlands the most stringent air quality standards are those for PM10 (limit value of 50 µg/m<sup>3</sup> 24-hours average with 35 permitted exceedances) and NO<sub>2</sub> (40 µg/m<sup>3</sup> yearly average). Focus in Dutch national policy since 2009 (NSL) has been to tackle the remaining hot spots near busy streets in large cities and in farming areas with high density of life stock. This national focus on hot spots, which is the result of the binding standards in the EU-air quality directive, suggests that people living near those hot spots have profited more from national and local policy actions than the average population. No studies for the monetary and/or non-monetary values could be found to underlie this statement at the time being.</p> <p>The goals of the NSL are to improve air quality and to achieve the EU air quality standards AND to secure that spatial projects (such as new residential areas, roads and other infrastructure) could take place without negative impact on air quality. Therefore from the beginning both projects and measures to improve air quality were included in the NSL and the effects of projects air quality could be compensated with sets of measures. Although no specific studies have been done up to now we do not have indications that since the introduction of the NSL infrastructural projects have not taken place solely because of their impact on air quality.</p>					

The implementation of the European air quality and source oriented policies by the Netherlands have resulted in a considerable improvement of air quality. The concentrations of particulate matter, nitrogen dioxide and ozone have been reduced considerably, resulting in positive effects on health. For example, the reduction of the concentration of particulate matter in the city of Rotterdam between 1985 and 2008 has resulted in an average increase in life expectancy of 13 months.

Ref: Keuken M, Zandveld P, van den Elshout S, Janssen NAH, Hoek G. Air quality and health impact of PM10 and EC in the city of Rotterdam, the Netherlands in 1985-2008. *Atmospheric Environment* 2011; 45(30):5294-301.

The Netherlands are a global pioneer in the field of promotion of zero emission vehicles, setting a trend that has triggered industrial innovation, leading to job creation and giving a competitive advantage to our industrial sector. The Metropole region of Amsterdam and the city of Eindhoven (automotive, technique) are taking the lead in this field.

The Netherlands Court of Audit has conducted studies of the Netherlands air policy as part of the Regularity Audit of the national budget in [2016](#) and [2017](#). The reports are available at [www.rekenkamer.nl](http://www.rekenkamer.nl).

For more detailed descriptions and cost-benefit assessments of several national air quality measures see ref: <https://www.ce.nl/publicaties/download/2539>

**The Netherlands is currently conducting an evaluation of the effectiveness and efficiency of the National Air Quality Program (NSL). The results will be presented to Dutch parliament in the first half of 2019.**

### **3 - What are the costs associated with implementation of the AAQ Directives in the Member States, and in the EU? To what extent have costs been equitably distributed across different sectors? Where data on the benefits (improved air quality) has also been provided (in question 2), have these benefits been achieved in a cost-effective manner?**

*Please indicate - supported by evidence (at local, regional or national level) - what types of costs have resulted from the implementation of the AAQ Directives, at local, regional or national level. We are particularly interested in data associated with the specific actions taking place at a local level to ensure compliance with the limit values, as set out in Question 1. Please provide evidence of costs; briefly describe the methodology used to get to this information; describe who is affected by these costs and where possible their distribution among stakeholders / sectors / population sub-groups.*

*Financial costs can include both staff costs (considering the number of full time employees per year needed to implement the directives) as well as the cost of equipment; where possible a distinction should be made between direct and indirect costs of the directives (e.g. respectively arising from monitoring equipment – for the public authorities - and from pollution abatement equipment - for businesses).*

*Please focus on the costs arising from the Directives themselves (directly or indirectly), excluding any costs resulting from achieving compliance with other air pollution legislation.*

**Answer:**

<b>Activity</b>	<b>Description and monetary value of costs</b>	<b>Methodology for calculating costs</b>	<b>Who are affected by these costs</b>	<b>Distribution of costs</b>	<b>Sources of information</b>
<b>NSL</b>	<b>€1.519.000.000</b>	<b>Derived from National budgets</b>	-	-	IenM/BSK-2017/173537
- Commissions	€10.000.000				
- Subsidies on Euro-6/Euro-VI etc	€504.000.000				
- Contribution to local governments	€320.000.000				
- Studies and development of infrastructural projects	€645.000.000				
- Competitive, sustainable, safe agricultural-, fishery- and food chains.	€40.000.000				

These are only the costs made on a national level for implementing air quality measures under the NSL. It does not include costs of the regular staff involved, on which no information is available. Also no exact numbers on costs borne by local governments could be gathered in time for this Questionnaire.

The Netherlands Court of Audit has conducted studies of the Netherlands air policy as part of the Regularity Audit of the national budget in 2016 and 2017. The reports are available at [www.rekenkamer.nl](http://www.rekenkamer.nl)

For more detailed descriptions and cost-benefit assessments of several national air quality measures see ref: <https://www.ce.nl/publicaties/download/2539>

**The Netherlands is currently conducting an evaluation of the effectiveness and efficiency of the National Air Quality Program (NSL). The results will be presented to Dutch parliament in the first half of 2019.**



**4 - What are the administrative costs associated to monitoring, reporting and assessment regimes for the Member States? Taking account of the objectives and benefits of the directives, is there evidence that they have caused unnecessary or excessive administrative burden?**

*The information to be provided here should go further than the information already provided for question 2 and provide, to the extent possible, information about the cost-effectiveness of the monitoring, reporting and assessment regimes (in terms of time spent by public workers, material needed, its maintenance costs...). Local / regional examples might be useful. Outsourcing costs should also be reported when relevant. Ideally, the information should also be able to distinguish between the costs of the obligations strictly mentioned in the Directive and the possible additional information required by national / local level ("gold-plating").*

Monitoring: The monitoring network of the Netherlands is operational since the early 70's and consist of relatively expensive "traditional" high quality monitors. The total costs for now is estimated at 3.9 million euro's per year. The use of these monitors will also be indispensable in the future, but the use of inexpensive sensors will increase in the future and it is expected that the use of the high quality monitors may decrease in the future. However the use of inexpensive sensors should not lead to a decrease of the quality of data. The EU could help by providing quality criteria for measurements with sensors.

Reporting/assessment regimes: The reporting of the data for The Netherlands in order to determine whether our zones and agglomerations are in attainment was subject to major changes because legislative frameworks such as INSPIRE were used as an example for the correct delivery of the air quality data. These changes had a major impact on The Netherlands. For now, the costs are estimated at 150k euro's per year.

**5 - Where there are significant cost differences between Member States and/or between different sectors and/or as regards distribution of costs between stakeholders (including social costs as a consequences of poor implementation), what is causing them? and are the costs of compliance proportionate to the benefits brought by the directives?**

*Evidence of significant implementation cost differences should be supported by quantitative data on the costs for the Member States (e.g. monitoring costs) or sectors concerned (e.g. abatement costs). Differences in social costs should also be highlighted (e.g. difference in health-related costs resulting from pollution, as well as difference in impacts – and therefore costs - on the environment. Any analysis of proportionality of costs and benefits should be accompanied by evidence comparing the costs and benefits.*

We are not aware of any available information on this subject.

**6 - Has the implementation of the AAQ Directives supported or hampered EU competitiveness in the global economy; has the implementation of the AAQ Directives improved or been detrimental to economic, social and environmental sustainability?**

*Please provide evidence – quantitative where possible – of the impact of the AAQ directives on the competitiveness of EU Member States / regions. Evidence should refer to both costs and benefits to the businesses affected by the directives; evolution of indicators such as market shares or presence in lead markets would be useful, in relation to the implementation of the directives..*

*The contribution of the AAQ Directives to overall sustainability (economic, social and environmental) is anticipated to be considered with reference to evidence provided in answers to previous questions; it may also include consideration of how the benefits are distributed throughout society.*

The direct and strict implementation of the AAQ directives initially led to a ‘lock-down’ in Dutch spatial development. As a consequence the National Cooperation Program on Air Quality (NSL) was introduced. It could be conceived that initially the Dutch (and thus EU) competitiveness in the global economy would have been hampered. On the other hand the NSL eventually led to improved living conditions for the population through the improvement of air quality, which is supportive to economic, social and environmental sustainability.

Ref: [NSL starting report](#)

## Coherence

### 1 – To what extent are the objectives set up by the Directives coherent with each other?

*Based on experience in your country/region/sector, please provide evidence of any inconsistencies between the objectives of the Directives that have negatively impacted on their implementation. Likewise, any evidence of synergies between the directives (or within each directive) is welcome. Please consider the coherence between objectives within each Directive, and/or between the objectives of the two Directives (Directives 2008/50/EC and 2004/107/EC).*

It is not clear yet, what the PM<sub>2.5</sub> limit value will be in 2020. Article 32 says:

*“In 2013 the Commission shall review the provisions related to PM<sub>2.5</sub> and, as appropriate, other pollutants, and shall present a proposal to the European Parliament and the Council. [...]”*

*“The Commission shall take into account the feasibility of adopting a more ambitious limit value for PM<sub>2.5</sub>, shall review the indicative limit value of the second stage for PM<sub>2.5</sub> and consider confirming or altering that value.”*

ANNEX XIV (E) sets a indicative limit value for PM<sub>2.5</sub> in stage 2: 20 µg/m<sup>3</sup>, to be met 1 January 2020. *This indicative limit value to be reviewed by the Commission in 2013 in the light of further information on health and environmental effects, technical feasibility and experience of the target value in Member States.*

Since this review has not been conducted yet, the Member States do not have an indication of the PM<sub>2.5</sub> limit value in 2020. So they can't implement any new limit value yet, or anticipate a stricter value.

### 2 – To what extent do the AAQ Directives interact positively or negatively with other environmental policies that affect air quality, or that are affected by it, at EU level and at Member State level? In other words, do these policies support or hamper the implementation of the EU air quality legislation?

*Please provide evidence of the extent to which the EU AAQ Directives are coherent with other EU environment legislation. Examples of relevant legislation include the following:*

- *Measures relating to emissions of air pollutants (such as the NEC Directive, the IED Directive, environmental legislation applying to specific emissions sources such as transport, energy...);*
- *Measures relating to climate change;*
- *The degree to which EU funding has been used for the implementation of the AAQ Directives and how it has helped/hampered*
- *Measures relating to the implementation of international air pollution commitments (such as CLRTAP or MARPOL).*

*Measures developed at Member States level in the same areas should also be considered when providing evidence of interactions (positive or negative) with the AAQD.*

*Please provide evidence of which environmental legislation and policies (at EU and / or national level) support / hamper the implementation of the AAQ Directives, identifying possible gaps and/or inconsistencies between these measures and EU AAQ legislation.*

EU-directive 1999/74/EC has improved the welfare of laying hens substantially. However, the prohibition of the use of unenriched cage systems for laying hens from 1 January 2012, and the resulting change to other housings systems for laying hens, has been accompanied with a large

increase in the emissions of particulate matter (PM<sub>10</sub> and PM<sub>2,5</sub>). Emissions increase because laying hens have more freedom to move in the animal-friendly systems and the hens have the disposal of litter. PM-emissions in cage housing systems are 5 gram PM per laying and with free-range systems this is 85 gram PM per laying hen.

Ref: [Emissions factors PM<sub>10</sub> for livestock farming](#)

Commission Regulation (EU) 2017/1262 amending Regulation (EU) No. 142/2011 as regards the use of manure of farmed animals as a fuel in combustion plants up to 50 (!)MW plants, will have a negative effect on the air quality –especially for NO<sub>x</sub> and dust- in The Netherlands. This is because the production of heat and power (incl electricity) is based on low-emission fuels, in particular natural gas. Also the emission limit values, laid down in the Commission Regulation (EU) 2017/1262 are less tight than NL emission limit values for solid fuels.

Positive relation between NECD en AAQD. NECD reduces emissions in the Netherlands and our neighbouring countries, which results in lower concentrations in the Netherlands. The figure below shows the decline in industrial emissions in the Netherlands because of national (like the [activities decree](#)) and European legislation (like the former NEC directive and the IED / IPPC directive). The table in the following [link](#) shows the decline in the emissions of air pollutants in the Netherlands in comparison with the NEC ceilings for 2010.

### 3 – To what extent do the AAQ Directives complement or interact with sectoral policies (other than environmental) that affect air quality or that are affected by it, at EU level and at Member State level? Do these policies support or hamper the implementation of the EU air quality legislation?

*In this section, two types of evidence are sought:*

- *evidence of the extent to which the provisions of EU AAQD interact (positively or negatively) with sectoral legislation and policies, in areas such as energy, transport, health, cohesion, taxation, agriculture, urban development (both for measures emanating from EU and national policies).*
- *evidence of possible inconsistencies between sectoral legislation and policies (at EU and / or national level) and the AAQ Directives (and the extent to which this occurs). Sectoral legislation / policy to be considered includes areas such as energy, transport, health, cohesion, taxation, agriculture, urban development....as well as EU Funding instruments*

The effectiveness of air quality policies is to a large extent dependent on coherence with policies in the fields of mobility, agriculture and climate and energy.

The need for coherence with policies on mobility has been clear from the outset with for example the need for using real driving emissions in test procedures and the need to stimulate zero-emission mobility.

The transition towards clean energy in general is expected to be beneficial to both improving air quality and to reducing climate change, but some of the proposed measures, such as the greater use of off biomass as a fuel may have a negative impact on air quality. A good example is the burning of wood and other biomass by households for heating. A better coherence between air and climate policies is needed to tackle this problem and to focus on measures which benefit both climate and air quality.

In recent years we have become more aware of the significant contribution of the ammonia (NH<sub>3</sub>) emissions from agriculture to the formation of secondary PM<sub>2,5</sub>. In addition secondary PM<sub>2,5</sub> not only originates from national sources but also has a considerable cross-boundary impact. Therefore international cooperation and coherence with agricultural policies is vital to achieving clean air in Europe.

## EU Added Value

### 1 – What changes to the requirements at national level have been introduced as a result of the AAQ Directives (including EU air quality standards, air quality assessment, management and information approaches)?

*Please explain the extent of changes: e.g. stricter limit values were introduced; rules on monitoring were defined in more detail; no major changes: the rules were already there; national legislation is stricter than the EU, etc.*

In the Netherlands we have a direct and strict linkage between decision-making regarding spatial projects and environmental permits. If environmental standards can't be met, new spatial projects can't be realised in principle.

So after the introduction of the AAQ Directive [2008/50/EC](#) many spatial projects were halted because of negative court cases. Additional rules and mitigation measures were required. As a result the National Cooperation Program on Air Quality (NSL) was founded, for example.

Nowadays the Dutch law (Wet milieubeheer) indicates when an (air polluting) project is permissible. The competent administrative authority must then make a reasonable case that the project meets one or a combination of the following conditions:

- no limit value is actually or threatened to be exceeded
- on balance, a project shall not lead to a deterioration of the air quality
- a project shall not make a significant contribution (NIBM) to air pollution
- a project has been included in, or fits in, the National Cooperation Program on Air Quality (NSL) or a regional programme of measures

### 2 - What changes or impacts have been generated by the implementation of the Directives in relation to its overarching objectives and to what extent can that be attributed to EU action (other than changes to national legislation already mentioned in the previous question)? E.g. Have they influenced national, regional or local level air quality management?

*Please describe and provide evidence of those changes that have been triggered by EU action through the AAQ Directives and that could not be achieved with action by your Member State in isolation, either at national, regional or local level. Please in your answer highlight the transformational changes that can be attributed to the Directives.*

See Question: EU Added Value (1) second paragraph

### 3 - From experience in your country, what would be the likely consequences of not having the Ambient Air Quality Directives?

*E.g. Difference in the level of air quality; availability of information on air quality; effects on cost-efficiency; effects on transboundary cooperation with regards to air quality; AAQD makes no difference, etc. Please elaborate and support your answer by examples.*

We are not aware of studies on the development of air quality in the Netherlands in a situation without the AAQ directives. Therefore no evidence is available. However since air quality in the Netherlands has improved considerably over the last ten years it is likely that this development is positively influenced by the AAQ directives. Without the legally binding nature of the air quality limits it is likely that there would have been less improvements in air quality in our country. The fact that legal action could be taken by any citizen or any environmental organisation put considerable pressure on the responsible authorities to adopt more ambitious measures to improve air quality in favour of healthy living conditions in our cities.

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