



COMMISSION OF THE EUROPEAN COMMUNITIES

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PROVISIONAL VERSION

2005/0183 (COD)

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on ambient air quality and cleaner air for Europe

(presented by the Commission)

{SEC(2005) 1133}

EXPLANATORY MEMORANDUM

1) CONTEXT OF THE PROPOSAL

- **Grounds for and objectives of the proposal**

In the context of its "Better Regulation" initiative in June 2002, the Commission proposed in February 2003 a policy for updating and simplifying the Community acquis. This aimed at securing a clear, understandable, up-to-date and user-friendly body of EC secondary law. Following on from this initiative, the current proposal aims to merge the provisions of five separate legal instruments into a single directive with the intention of simplifying, streamlining and reducing the volume of existing legislation. In addition the proposal aims to revise substantially the existing provisions so as to incorporate the latest health and scientific developments and the experience of the Member States.

- **General context**

Air pollution has long been recognised as posing a significant risk to human health and the environment. In 1996 the Air Quality Framework Directive was adopted which established a Community framework for the assessment and management of ambient air quality in the EU. The Framework Directive also provided a list of priority pollutants for which air quality objectives would be established in daughter legislation. There have subsequently been four daughter directives in respect of particular pollutants and a Council Decision to bring about the reciprocal exchange of air quality monitoring information.

The impact assessment accompanying this proposal has estimated the damage costs due to human exposure to particulate matter and ozone in ambient air. In the year 2000, exposure to particulate matter was estimated to reduce average statistical life expectancy by approximately nine months in the EU-25. This equates to approximately 3.6 million life years lost or 348,000 premature mortalities per annum. In addition, it has been estimated that there were some 21,400 cases of hastened death due to ozone. Significant progress is expected in reducing harmful emissions of particulate matter and its precursors between now and 2020 such that the average loss in statistical life expectancy is expected to reduce to around 5.5 months. There is also expected to be a reduction of around 600 cases of hastened death due to ozone over the same time period. The damage costs of these impacts in 2020 has been estimated at between €189 to 609 billion per annum.

- **Existing provisions in the area of the proposal**

This proposal aims to revise and combine the following separate instruments into a single legal act.

Council Directive 96/62/EC on ambient air quality assessment and management ("Framework Directive"), OJ L 296, 21.11.1996, p.55.

Council Directive 1999/30/EC relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air, OJ L 163, 29.6.1999, p.41 ("First Daughter Directive").

Directive 2000/69/EC of the European Parliament and of the Council relating to limit values for benzene and carbon monoxide in ambient air, O.J. L 313, 13.12.2000, p. 12 ("Second Daughter Directive").

Directive 2002/3/EC of the European Parliament and of the Council relating to ozone in ambient air, OJ L 67, 9.3.2002, p.14 ("Third Daughter Directive").

Council Decision 97/101/EC establishing a reciprocal exchange of information and data from networks and individual stations measuring ambient air pollution within the member States, OJ L 35, 5.2.1997, p.14 ("Exchange of Information Decision").

- **Consistency with other policies and objectives of the Union**

This proposal is consistent with Article 175 of the Treaty establishing the European Community and aims to provide a high level of protection for human health the environment.

2) CONSULTATION OF INTERESTED PARTIES AND IMPACT ASSESSMENT

- **Consultation of interested parties**

Consultation methods, main sectors targeted and general profile of respondents

Approximately 13 main meetings with stakeholders including industry groups (road vehicles, oil refiners, VOCs industries and general industry representatives), Member States and NGOs including the European Environment Bureau, the Swedish Secretariat on Acid Rain and the World Health Organisation (WHO) were carried out. Accession and EEA countries were also invited to these meetings. There have also been approximately one hundred or so meetings of various technical working groups which have been organised by the Commission services. In addition, a web based consultation was held on elements of the thematic strategy on air pollution which encompassed elements of the current proposal.

Summary of responses and how they have been taken into account

The views of the Member States and other stakeholders are generally supportive of the Commission's initiative to simplify the legislation. Member States also (i) recognise the importance to address the new air pollutant PM_{2.5}, (ii) are cautious about the absolute level at which any air quality standard may be set in light of the potential costs and feasibility of compliance, and (iii) supportive of the idea to reduce exposure generally and more in places where pollution is greatest. The proposal, therefore, foresees a relatively high concentration cap for PM_{2.5} that would apply everywhere in the EU and which would ensure protection against unduly high risks but would only impose burdens in the most polluted areas. In addition, Member States would be obliged to measure PM_{2.5} in urban background locations and to bring about a differentiated reduction in the average levels measured according to measured pollution levels in 2010. This will enable general exposure to be reduced in the most effective manner as decided by the Member States.

An open consultation was conducted over the internet from 01/12/2004 to 31/01/2005. The Commission received 11.578 response(s). The results are available on

- **Collection and use of expertise**

Scientific/expertise domains concerned

The following areas of expertise have been used in developing this proposal and the thematic strategy on air pollution: (1) impacts of air pollution on human health, (2) integrated assessment modelling and development of cost-effective control strategies, (3) health impacts estimation including monetary quantification, (4) ecosystem benefits estimation, (5) macroeconomic modelling, and (6) air quality assessment and management expertise.

Methodology used

Service contracts and grant agreements and meetings convened by the Commission.

Main organisations/experts consulted

The World Health Organisation, International Institute of Applied Systems Analysis, AEA Technology, The Convention on Long Range Transboundary Air Pollution, The European Environment Agency, The Joint Research Centre (ISPRA), the Commission's working group on particulate matter, Commission's working group on implementation and the Scientific Committee on Health and Environmental Risk (SCHER) of the European Commission.

Summary of advice received and used

The overwhelming evidence that the Commission has received can be summarised as follows: (i) there is a health risk from PM_{2.5}, (ii) PM_{2.5} is a better metric for anthropogenic contributions to ambient levels of particulate matter, and (iii) the risk from the coarse fraction (between PM_{2.5} and PM₁₀) cannot be ignored.

Means used to make the expert advice publicly available

All reports from experts and contracts have been routinely uploaded to the internet for public dissemination.

- **Impact assessment**

The Commission has considered the following options in respect of controlling human exposure to PM_{2.5}. Each option assumes that the existing limit values for PM₁₀ remain in force.

(1) Introduce an exposure reduction target for PM_{2.5} to be attained by 2020, to reduce annual average urban background concentrations of PM_{2.5} by a defined percentage rate of the Member State measured average over 2008-2010. This target to be achieved as far as possible but is not legally binding.

(2) Replace the indicative limit values for PM₁₀ for the year 2010 by a legally binding limit value for annual average concentrations of PM_{2.5} to be attained by 2015. Such a limit value would be designed to offer a high degree of protection to the

population and would apply everywhere in the territory of the Member States;

(3) Replace the indicative limit values for PM₁₀ for the year 2010 by a legally binding "cap" for the annual average concentrations of PM_{2.5} of 25µgm⁻³ to be attained by 2010. Such a "cap" or ceiling would be designed to limit unduly high risks to the population;

(4) Replace the indicative limit values for PM₁₀ for the year 2010 by a non-binding target for the annual average concentrations of PM_{2.5} to be attained as far as possible by 2010. Such a target value would be numerically identical to the limit value in option (2) above; and

(5) Do nothing, i.e. do not introduce any requirement to reduce human exposure to PM_{2.5}.

In light of the significant impacts on the European economy, option (5) of doing nothing is not a serious option. The Commission proposes a combination of options (1) and (3). This combination is in line with the best advice received from the WHO. The analyses underpinning the impact assessment show that a stringent uniform limit value is not as cost-effective as option (1) because a limit value would have most effect in the most polluted areas which is not necessarily where most people are exposed. The benefits of the preferred combination have been estimated at €37-120 billion per annum with costs of around €5 billion per annum.

The simplification exercise and the modernization of reporting requirements are likely to reduce the administrative burden on Member States though this cannot be quantified precisely. However, the proposals will require some additional monitoring of air quality though the costs involved are small and of the order of several million Euros. This will improve our understanding of air pollution and should permit in the longer term a greater use of modelling when assessing air quality rather than using more expensive monitoring.

The Commission carried out an impact assessment listed in the Work Programme, whose report is accessible on <http://www.europa.eu/dg/env/cafe/index>.

3) LEGAL ELEMENTS OF THE PROPOSAL

- **Summary of the proposed action**

The aim of the current proposal is to revise substantially and merge five separate elements of the existing acquis on ambient air quality into a single directive. This will necessarily simplify and streamline existing provisions particularly in respect of monitoring and reporting. The proposal will also update the provisions to reflect new scientific developments and introduce controls on human exposure to PM_{2.5} in ambient air.

- **Legal basis**

The legal basis of the proposal is Article 175 of the Treaty.

- **Subsidiarity principle**

The subsidiarity principle applies insofar as the proposal does not fall under the exclusive competence of the Community.

The objectives of the proposal cannot be sufficiently achieved by the Member States for the following reasons.

The existing legislation established minimum standards of air quality throughout the Community and this principle is maintained in the simplification. In addition, particulate matter in air consists of a substantial transboundary component and so all Member States must take measures in order that the risks to the population in each Member States can be reduced.

Community action will better achieve the objectives of the proposal for the following reasons.

The major thrust of this proposal is to amend and simplify existing legislation which applies minimum standards of air quality across the whole Community. In addition, PM_{2.5} has a substantial transboundary component such that once pollution is emitted or formed in the atmosphere it can be transported over thousands of kilometres. So the scale of the problem requires Community-wide action.

Atmospheric modelling and measurements of air pollution demonstrate beyond doubt that the pollution emitted in one Member State contributes to measured pollution in other Member States. This shows that individual Member States cannot solve the problems alone and concerted action at the EU scale is required.

The proposal concentrates on simplifications to existing legislation. On PM_{2.5}, the proposal sets Community objectives for each Member State but leaves the means of compliance to be decided by the appropriate Member State authorities thus ensuring minimum standards of air quality for all citizens of the EU.

The proposal therefore complies with the subsidiarity principle.

- **Proportionality principle**

The proposal complies with the proportionality principle for the following reason(s).

The chosen legal instrument is a directive, as (1) the proposal aims to simplify existing directives; and (2) it establishes objectives whilst leaving the details of implementation to the Member States who have more precise knowledge of local circumstances and the measures that will deliver air quality benefits most cost-effectively.

The proposal aims to simplify the monitoring and reporting requirements by moving towards a shared information system and electronic reporting. In addition, certain reporting requirements will be repealed. This will reduce the administrative burden on Member States though the precise extent cannot yet be quantified. In addition, although the proposal will require additional monitoring requirements in the short to medium term, this will eventually permit a greater scientific understanding of certain air pollution problems which should in turn permit a greater use of modelling to assess air quality rather than more expensive monitoring. Thus cost savings in monitoring activities can be expected in the longer term.

- **Choice of instruments**

Proposed instruments: directive.

Other means would not be adequate for the following reason(s).

The aim of the current proposal is to merge and simplify four existing directives and a Council decision into a single instrument. Given this, and given that the existing legislation sets Community objectives but leaves the choice of measures for compliance to the Member States then the best instrument is a directive.

4) BUDGETARY IMPLICATION

The research needs linked to the proposal will be covered by Member States, with an EU contribution covered by the budget already allocated for this purpose in the 7th Research Framework Programme as proposed by the Commission for the financial perspectives 2007-2013. The proposal has no implication for the Community budget which would go beyond these actions.

5) ADDITIONAL INFORMATION

- **Simplification**

The proposal provides for simplification of legislation and simplification of administrative procedures for public authorities (EU or national).

Four directives and one Council decision will be merged into a single directive. Redundant provisions will be repealed, consistency between the separate legal acts improved and unnecessary obligations repealed. Non-essential reporting requirements will be repealed and it is anticipated that future monitoring will be by electronic means only thus reducing the administrative burden on Member States.

Reporting and monitoring requirements will be simplified with a move towards electronic reporting. This should assist Member States' internal administrative requirements.

The proposal is included in the Commission's rolling programme for up-date and simplification of the *acquis communautaire* and its Work and Legislative Programme under the reference CLWP 2004 1011 fiche 2005.

- **Repeal of existing legislation**

The adoption of the proposal will lead to the repeal of existing legislation.

- **Review/revision/sunset clause**

The Commission will review, within five years following the adoption of this Directive, the provisions related to PM_{2.5}. In particular the Commission will develop and propose a detailed approach to establish legally binding exposure reduction obligations which take account of differing future air quality situations and reduction potentials in the Member States.

- **Correlation table**

The Member States are required to communicate to the Commission the text of national provisions transposing the Directive as well as a correlation table between those provisions and this Directive.

- **European Economic Area**

The proposed act concerns an EEA matter and should therefore extend to the European Economic Area.

- **Detailed explanation of the proposal**

As the major thrust of this proposal is to revise and merge several legal texts and remove redundant text, only major changes to the existing legislation are described here.

Chapter III (Air Quality Management):

The Commission does not propose to modify the existing air quality limit values but will propose a strengthening of existing provisions so that Member States will be obliged to prepare and implement plans and programmes to remove non-compliances. However, where Member States have taken all reasonable measures the Commission will propose that Member States be allowed to delay the attainment date in affected zones where limit values are not yet complied with, if certain objective criteria are met. Any extension will have to be notified to the Commission. Furthermore, the Commission will confirm the intent of the current legislation to discount pollutant contributions from natural sources for compliance purposes.

There is strong evidence to conclude that fine particles (PM_{2.5}) are more hazardous than larger ones. However, the coarse fraction (particles in the range of 2.5 to 10 µm in diameter) cannot be ignored. As such a new approach to control PM_{2.5} is required to complement the existing controls on PM₁₀. This is supported by the Scientific Committee on Health and Environmental Risks. The proposed approach would establish a concentration cap for PM_{2.5} in ambient air set to prevent unduly high risks to the population and to be attained by 2010. This would be coupled with a non-binding target to reduce human exposure generally to PM_{2.5} between 2010 and 2020 in each Member State, based upon measurement data.

The proposal also envisages more comprehensive monitoring of certain pollutants such as PM_{2.5}. This will permit a greater understanding of this pollutant and lead to better policy development in the future. In addition, this monitoring should eventually permit a greater use of modelling and objective estimation techniques to assess the extent of air pollution. This should allow less use of more expensive monitoring.

Chapter V (Information and Reporting):

The Commission proposes to move to a system of electronic reporting based upon a shared information system within the INSPIRE framework¹. This approach will reduce paperwork, shorten information flows, enhance assessment capabilities and improve public access to information. As such, those provisions of the Exchange of Information Decision relating to the mechanism for reporting will remain in force until such time as new implementing provisions are adopted under the INSPIRE directive.

¹ COM (2004) 516 final

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on ambient air quality and cleaner air for Europe

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175 thereof,

Having regard to the proposal from the Commission²,

Having regard to the opinion of the European Economic and Social Committee³,

Having regard to the opinion of the Committee of the Regions⁴,

Acting in accordance with the procedure laid down in Article 251 of the Treaty⁵,

Whereas:

- (1) The Sixth Community Environment Action Programme adopted by Decision No 1600/2002/EC of the European Parliament and of the Council⁶, establishes the need to reduce pollution to levels which minimise harmful effects on human health, paying particular attention to sensitive populations, and the environment as a whole, to improve the monitoring and assessment of air quality including the deposition of pollutants and to provide information to the public.
- (2) In order to protect human health and the environment as a whole, emissions of harmful air pollutants should be avoided, prevented or reduced and appropriate standards set for ambient air taking into account relevant World Health Organisation standards, guidelines and programmes.
- (3) Council Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management⁷, Council Directive 1999/30/EC of 22 April 1999 related to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air⁸, Directive 2000/69/EC of the European Parliament and of the

² OJ [...]

³ OJ [...]

⁴ OJ [...]

⁵ Opinion of the European Parliament of [...], Council Common Position of [...]

⁶ OJ L 242, 10.9.2002, p. 1.

⁷ OJ L 296, 21.11.1996, p. 55.

⁸ OJ L 163, 29.6.1999, p. 41.

Council of 16 November 2000 related to limit values for benzene and carbon monoxide in ambient air⁹, Directive 2002/3/EC of the European Parliament and of the Council of 12 February 2002 related to ozone in ambient air¹⁰ and Council Decision 97/101/EC of 27 January 1997 establishing a reciprocal exchange of information and data from networks and individual stations measuring ambient air pollution within the Member States¹¹ need to be substantially revised in order to incorporate the latest health and scientific developments and the experience of the Member States. In the interests of clarity, simplification and administrative efficiency it is therefore appropriate that those five acts be replaced by a single directive.

- (4) Directive 2004/107/EC of the European Parliament and of the Council of 15 December 2004 relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air¹² may be consolidated with the current Directive once sufficient experience has been gained in relation to its implementation.
- (5) A common approach to the assessment of air quality should be followed according to common assessment criteria. When assessing ambient air quality, account should be taken of the size of populations and ecosystems exposed to air pollution. It is therefore appropriate to classify the territory of each Member State into zones or agglomerations reflecting the population density.
- (6) In order to ensure that the information collected on air pollution is sufficiently representative and comparable across the Community, it is important that standardised measurement techniques and common criteria for the number and location of measuring stations are used for the assessment of ambient air quality. Techniques other than measurements can be used to assess ambient air quality and it is therefore necessary to define criteria for the use and required accuracy of such techniques.
- (7) Detailed measurements of fine particulate matter at background locations should be made to understand better the impacts of this pollutant and to develop appropriate policies. Such measurements should be consistent with those of the cooperative programme for monitoring and evaluation of the long range transmission of air pollutants in Europe (EMEP).
- (8) Air quality status should be maintained or improved where it is already good. Where air quality standards are exceeded, Member States should take action so that they achieve compliance with the specified values but exceedances attributable to wintertime sanding of roads should be ignored.
- (9) The risk to vegetation from air pollution is most important in places away from urban areas where such vegetation is situated. The assessment of such risks and the compliance with air quality standards for the protection of vegetation should focus on places away from built-up areas.

⁹ OJ L 313, 13.12.2000, p. 12.

¹⁰ OJ L 67, 9.3.2002, p. 14.

¹¹ OJ L 35, 5.2.1997, p. 14. Decision as last amended by Commission Decision 2001/752/EC of 17 October 2001 (OJ L 282, 26.10.2001, p. 69).

¹² OJ L 23, 26.1.2005, p. 3.

- (10) Fine particulate matter (PM_{2,5}) is responsible for significant negative impacts on human health. Further, there is as yet no identifiable threshold below which PM_{2,5} would not pose a risk. As such, this pollutant should be regulated in a different manner than for other air pollutants. That approach aims at a general reduction of concentrations in the urban background to ensure that large parts of the population benefit from improved air quality. However, to ensure a minimum degree of health protection everywhere, the approach should be combined with an absolute concentration cap.
- (11) The existing long-term objectives to ensure effective protection against harmful effects on human health and vegetation and ecosystems from exposure to ozone should remain unchanged. An alert threshold and an information threshold for ozone should be set for the protection of the general population and sensitive sections from brief exposures to elevated ozone concentrations respectively. These thresholds should trigger the dissemination of information to the public about the risks of exposure and the implementation of appropriate short term measures to reduce ozone levels where the alert threshold is exceeded.
- (12) Ozone is a transboundary pollutant formed in the atmosphere from the emission of primary pollutants addressed by Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants¹³. Progress towards the air quality targets and long term objectives for ozone in this Directive should be determined by the current and/or revised targets and emissions ceilings in Directive 2001/81/EC.
- (13) Fixed measurements of ozone should be mandatory in zones where the long-term objectives are exceeded. The use of supplementary means of assessment should be allowed for the purpose of reducing the required number of fixed sampling points.
- (14) Pollutant emissions to air from natural sources are capable of measurement but cannot be controlled. Therefore, where natural contributions to pollutants in ambient air can be determined with sufficient certainty, these can be subtracted when assessing compliance with air quality limit values.
- (15) Existing air quality limit values should remain unchanged, though the period of time within which compliance must be ensured may be extended where, notwithstanding the implementation of appropriate pollution abatement measures, acute compliance problems may exist in specific zones and agglomerations. Any time extension for a given zone or agglomeration should be accompanied by a comprehensive plan to ensure compliance within the extended time period.
- (16) Plans or programmes should be developed for zones and agglomerations within which concentrations of pollutants in ambient air exceed the relevant air quality standards, plus any temporary margins of tolerance applicable. Air pollution is emitted from many different sources and activities. To ensure coherence between different policies, such plans and programmes should be consistent, and be integrated with plans and programmes prepared pursuant to Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain

¹³ OJ L 309, 27.11.2001, p. 22.

pollutants into the air from large combustion plants¹⁴, Directive 2001/81/EC of the European Parliament and of the Council on national emission ceilings for certain atmospheric pollutants¹³, and Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of noise¹⁵.

- (17) Action plans should be drawn up indicating the measures to be taken in the short term where there is a risk of an exceedance of one or more relevant air quality standards or alert thresholds in order to reduce that risk and to limit the duration of such an occurrence. In respect of ozone, such short term action plans should take into account the provisions of Commission Decision 2004/279/EC of 19 March 2004 concerning guidance for implementation of Directive 2002/3/EC of the European Parliament and of the Council relating to ozone in ambient air¹⁶.
- (18) The purpose of such plans and programmes is the direct improvement of air quality and the environment and they should not therefore be subject to the provisions of Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment¹⁷.
- (19) Member States should consult with one another if the level of a pollutant exceeds, or is likely to exceed, the relevant air quality standards plus the margin of tolerance or, as the case may be, the alert threshold, following significant pollution originating in another Member State. The transboundary nature of specific pollutants, such as ozone or particulate matter, may require some coordination between neighbouring Member States in drawing up and implementing plans, programmes and short-term action plans and in informing the public. Where appropriate, Member States should pursue cooperation with third countries, with particular emphasis on early involvement of accession countries.
- (20) It is necessary for the Member States and the Commission to collect exchange and disseminate air quality information in order to understand better the impacts of air pollution and develop appropriate policies. Up-to-date information on concentrations of all regulated pollutants in ambient air should also be readily available to the public.
- (21) In order to facilitate the handling and comparison of air quality information, data should be made available to the Commission in a standardized form.
- (22) It is necessary to adapt procedures for data provision, assessment and reporting of air quality to enable use of electronic means and the internet as the main tools to make information available and to be compatible with Directive [...] ¹⁸.
- (23) It is appropriate to provide for the possibility of adapting the criteria and techniques used for the assessment of the ambient air quality to scientific and technical progress and the information to be provided. Furthermore, reference techniques for air quality modelling should be adopted, where available.

¹⁴ OJ L 309, 27.11.2001, p. 1.

¹⁵ OJ L 189, 18.7.2002, p.12.

¹⁶ OJ L 87, 25.3.2004, p. 50.

¹⁷ OJ L197, 21.7.2001, p. 30.

¹⁸ [insert reference to INSPIRE Directive once adopted]

- (24) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission¹⁹.
- (25) Member States should lay down rules on penalties applicable to infringements of the provisions of this Directive and ensure that they are implemented. The penalties should be effective, proportionate and dissuasive.
- (26) Certain provisions of the repealed acts should remain in force in order to ensure the continuance of existing air quality limits for nitrogen dioxide until they are replaced from 1 January 2010, the continuance of air quality reporting provisions until new implementing measures are adopted, and the continuance of obligations on preliminary assessments of air quality required in relation to Directive 2004/107/EC.
- (27) The obligation to transpose this Directive into national law should be confined to those provisions which represent a substantive change as compared with the earlier Directives. The obligation to transpose the provisions which are unchanged arises under the earlier Directives.
- (28) This Directive respects the fundamental rights and observes the principles recognised in particular by the Charter of Fundamental Rights of the European Union. In particular, this seeks to promote the integration into Community policies of a high level of environmental protection and the improvement of environmental quality in accordance with the principle of sustainable development as laid down in Article 37 of the Charter of Fundamental Rights of the European Union.
- (29) Since the air quality objectives of this Directive cannot be sufficiently achieved by the Member States alone and can therefore, by reason of the transboundary nature of air pollutants, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives,

HAVE ADOPTED THIS DIRECTIVE:

Chapter I

General Provisions

Article 1

Subject Matter

This Directive lays down measures aimed at the following:

- (1) defining and establishing objectives for ambient air quality designed to avoid, prevent or reduce harmful effects on human health and the environment as a whole;

¹⁹ OJ L 184, 17.7.1999, p. 23.

- (2) assessing the ambient air quality in Member States on the basis of common methods and criteria and, in particular, assessing concentrations in ambient air of certain pollutants;
- (3) providing information on ambient air quality in order to help combat pollution and nuisance and to monitor long-term trends and improvements resulting from national and Community measures;
- (4) ensuring that such information on ambient air quality is made available to the public;
- (5) maintaining air quality where it is good and improve it in other cases;
- (6) promoting increased cooperation between the Member States in reducing air pollution.

Article 2

Definitions

For the purposes of this Directive:

- (1) “ambient air” shall mean outdoor air in the troposphere, excluding work places;
- (2) “pollutant” shall mean any substance present in ambient air and likely to have harmful effects on human health and/or the environment as a whole;
- (3) “level” shall mean the concentration of a pollutant in ambient air or the deposition thereof on surfaces in a given time;
- (4) “assessment” shall mean any method used to measure, calculate, predict or estimate levels;
- (5) “limit value” shall mean a level fixed on the basis of scientific knowledge, with the aim of avoiding, preventing or reducing harmful effects on human health and the environment as a whole, to be attained within a given period and not to be exceeded once attained;
- (6) “concentration cap” shall mean a level fixed on the basis of scientific knowledge, with the aim of preventing unduly high risks for human health, to be attained within a given period and not to be exceeded once attained;
- (7) “critical level” shall mean a level fixed on the basis of scientific knowledge, above which direct adverse effects may occur on receptors, such as plants, trees or natural ecosystems but excluding humans;
- (8) “margin of tolerance” shall mean the percentage of the limit value by which this value may be exceeded subject to the conditions laid down in this Directive;
- (9) “target value” shall mean a level fixed with the aim of avoiding, preventing or reducing harmful effects on human health and the environment as a whole, to be attained where possible over a given period;

- (10) “alert threshold” shall mean a level beyond which there is a risk to human health from brief exposure and at which immediate steps shall be taken by the Member States;
- (11) “information threshold” shall mean a level beyond which there is a risk to human health from brief exposure for particularly sensitive sections of the population and for which immediate and appropriate information is necessary;
- (12) “upper assessment threshold” shall mean a level below which a combination of measurements and modelling techniques may be used to assess ambient air quality;
- (13) “lower assessment threshold” shall mean a level below which modelling or objective-estimation techniques alone may be used to assess ambient air quality;
- (14) “long-term objective” shall mean a level to be attained in the long term, save where not achievable through proportionate measures, with the aim of providing effective protection of human health and the environment;
- (15) “zone” shall mean part of their territory delimited by the Member States for the purpose of air quality assessment and management;
- (16) “agglomeration” shall mean a zone that is a conurbation with a population in excess of 250 000 inhabitants or, where the population is 250 000 inhabitants or less, with a given population density per km² to be established by the Member States;
- (17) “PM₁₀” shall mean particulate matter, which passes through a size-selective inlet as defined in EN 12341 with a 50% efficiency cut-off at 10 µm aerodynamic diameter;
- (18) “PM_{2,5}” shall mean particulate matter, which passes through a size-selective inlet as defined in EN 14907 with a 50% efficiency cut-off at 2,5 µm aerodynamic diameter;
- (19) “average exposure indicator” shall mean an average level determined from measurements at urban background locations throughout the territory of a Member State and which reflects population exposure;
- (20) “exposure reduction target” shall mean a percentage reduction of the average exposure indicator set with the aim of reducing harmful effects on human health, to be attained where possible over a given period;
- (21) “urban background locations” shall mean places in urban areas where apparent levels are representative of the exposure of the general urban population;
- (22) “oxides of nitrogen” shall mean the sum of the volume mixing ratio (ppb_v) of nitrogen monoxide (nitric oxide) and nitrogen dioxide expressed in units of mass concentration of nitrogen dioxide (µg/m³);
- (23) “fixed measurement” shall mean measurements taken at fixed sites, either continuously or by random sampling to determine the levels in accordance with the required data quality objectives;
- (24) “indicative measurement” shall mean measurements which fulfil less strict quality criteria compared to fixed measurements;

- (25) “volatile organic compounds” (VOC) shall mean organic compounds from anthropogenic and biogenic sources, other than methane, that are capable of producing photochemical oxidants by reactions with nitrogen oxides in the presence of sunlight.

Article 3

Implementation and responsibilities

1. Member States shall designate at the appropriate levels the competent authorities and bodies responsible for:
 - (a) Assessment of ambient air quality;
 - (b) Approval of measurement systems (methods, equipment, networks and laboratories);
 - (c) Ensuring accuracy of measurements;
 - (d) Analysis of assessment methods;
 - (e) Coordination on their territory if Community-wide quality assurance programmes are being organized by the Commission;
 - (f) Cooperation with the other Member States and the Commission.

Where relevant, the competent authorities and bodies shall comply with Section C of Annex I.

2. The Member States shall inform the public of the competent authority or body designated in relation to the tasks referred to in paragraph 1.

Chapter II

Assessment of Air Quality

SECTION 1

GENERAL

Article 4

Establishment of zones and agglomerations

Member States shall establish zones and agglomerations throughout their territory. Air quality assessment and air quality management shall be carried out in all zones and agglomerations.

SECTION 2
**ASSESSMENT OF AMBIENT AIR QUALITY RELATED TO SULPHUR DIOXIDE,
NITROGEN DIOXIDE AND OXIDES OF NITROGEN, PARTICULATE MATTER, LEAD,
BENZENE AND CARBON MONOXIDE**

Article 5

Assessment regime

1. With respect to sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter (PM₁₀ and PM_{2,5}), lead, benzene and carbon monoxide the upper and lower assessment thresholds specified in Section A of Annex II for health and vegetation protection shall apply.

Each zone and agglomeration shall be classified in relation to those assessment thresholds.

2. The classification referred to in paragraph 1 shall be reviewed at least every five years in accordance with the procedure laid down in Section B of Annex II.

Classifications shall be reviewed more frequently in the event of significant changes in activities relevant to the ambient concentrations of sulphur dioxide, nitrogen dioxide or, where relevant, oxides of nitrogen, particulate matter (PM₁₀, PM_{2,5}), lead, benzene or carbon monoxide.

Article 6

Assessment criteria

1. Member States shall undertake assessments of ambient air quality with respect to the pollutants referred to in Article 5 throughout their territory, in accordance with the criteria laid down in paragraphs 2, 3 and 4 of this Article.
2. In all zones and agglomerations where the level of pollutants in ambient air referred to in paragraph 1 exceeds the upper assessment threshold established for those pollutants, fixed measurements shall be used to assess the ambient air quality. Those fixed measurements may be supplemented by modelling techniques and/or indicative measurements to provide adequate information on ambient air quality.
3. In all zones and agglomerations where the level of pollutants in ambient air referred to in paragraph 1 is below the upper assessment threshold established for those pollutants, a combination of fixed measurements and modelling techniques and/or indicative measurements may be used to assess the ambient air quality.
4. In all zones and agglomerations where the level of pollutants in ambient air referred to in paragraph 1 is below the lower assessment threshold established for those pollutants, modelling and objective-estimation techniques alone may be used for the assessment of the ambient air quality.

5. In addition to the assessments referred to in paragraphs 2, 3 and 4, measurements of ambient air pollutants shall be made at background locations away from significant sources of air pollution. These measurements shall provide, as a minimum, information on the mass concentration and the chemical speciation of fine particulate matter (PM_{2,5}) on an annual average basis and be conducted according to the following criteria:
- (a) One sampling point shall be installed every 100 000 km².
 - (b) Each Member State shall set up at least one measuring station or may, by agreement, set up one or several common measuring stations, covering neighbouring zones in adjoining Member States, to achieve the necessary spatial resolution;
 - (c) Where appropriate, monitoring shall be co-ordinated with the monitoring strategy and measurement programme of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP);
 - (d) Section A of Annex I shall apply in relation to the data quality objectives for mass measurements of particulate matter and Annex IV shall apply in its entirety.

Member States shall also inform the Commission of the measurement methods used in the measurement of the chemical composition of fine particulate matter (PM_{2,5}).

Article 7

Sampling points

- 1. The location of sampling points for the measurement of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter (PM₁₀, PM_{2,5}), lead, benzene and carbon monoxide in ambient air shall be determined in accordance with the criteria listed in Annex III.
- 2. In each zone or agglomeration where fixed measurements are the sole source of information for assessing air quality, the number of sampling points for each relevant pollutant shall not be less than the minimum number of sampling points specified in Section A of Annex V.
- 3. However, for zones and agglomerations within which information from fixed measurement sampling points is supplemented by information from modelling and/or indicative measurement, the total number of sampling points specified in Section A of Annex V may be reduced by up to 50%, provided that:
 - (a) the supplementary methods provide sufficient information for the assessment of air quality with regard to limit values, concentration caps or alert thresholds, as well as adequate information with which to inform the public;
 - (b) the number of sampling points to be installed and the spatial resolution of other techniques are sufficient for the concentration of the relevant pollutant to be

established in accordance with the data quality objectives specified in Section A of Annex I and permit assessment results to meet the criteria specified in Section B of Annex I.

In the case referred to in the first subparagraph, the results of modelling and/or indicative measurement shall be taken into account for the assessment of air quality with respect to the limit values or concentration caps.

Article 8

Reference measurement methods

Member States shall apply the reference measurement methods and criteria specified in Section A and Section C of Annex VI.

Other measurement methods may be used subject to the conditions set out in Section B of Annex VI.

SECTION 3

ASSESSMENT OF AMBIENT AIR QUALITY RELATED TO OZONE

Article 9

Assessment criteria

1. Where in a zone or agglomeration concentrations of ozone have exceeded the long term objectives specified in Section A 3 of Annex VII during any of the previous five years of measurement, fixed measurements shall be taken.
2. Where fewer than five years' data are available, Member States may, for the purpose of determining whether the long term objectives referred to in paragraph 1 have been exceeded during that period, combine the results from measurement campaigns of short duration when and where levels are likely to be at their highest, with the results obtained from emission inventories and modelling.

Article 10

Location of sampling points for the measurement of ozone

1. The location of sampling points for the measurement of ozone shall be determined in accordance with the criteria set out in Annex VIII.
2. The sampling points for fixed measurements of ozone in each zone or agglomeration within which measurement is the sole source of information for assessing air quality shall not be less than the minimum number of sampling points specified in Section A of Annex IX.
3. For zones and agglomerations within which information from sampling points for fixed measurements is supplemented by information from modelling and/or

indicative measurements, the number of sampling points specified in Section A of Annex IX may be reduced provided that:

- (a) the supplementary methods provide sufficient information for the assessment of air quality with regard to target values, long-term objective, information and alert thresholds;
- (b) the number of sampling points to be installed and the spatial resolution of other techniques are sufficient for the concentration of ozone to be established in accordance with the data quality objectives specified in Section A of Annex I and permit assessment results to meet the criteria specified in Section B of Annex I;
- (c) the number of sampling points in each zone or agglomeration amounts to at least one sampling point per two million inhabitants or one sampling point per 50 000 km² whichever produces the greater number of sampling points but must not be less than one sampling point in each zone or agglomeration;
- (d) nitrogen dioxide is measured at all remaining sampling points except at rural background stations.

In the case referred to in the first subparagraph, the results of modelling and/or indicative measurement shall be taken into account for the assessment of air quality with respect to the target values.

- 6. Nitrogen dioxide shall be measured at a minimum of 50 % of the ozone sampling points required by Section A of Annex IX. That measurement shall be continuous except at rural background stations, as referred to in section A of Annex VIII, where other measurement methods may be used.
- 7. In zones and agglomerations where, during each of the previous five years of measurement, concentrations are below the long-term objectives, the number of sampling points for fixed measurements shall be determined in accordance with Section B of Annex IX.
- 8. Each Member State shall ensure that at least one sampling point is installed and operated in its territory to supply data on concentrations of ozone precursor substances listed in Annex X. Each Member State shall choose the number and siting of the stations at which ozone precursor substances are to be measured, taking into account the objectives and methods laid down in Annex X.

Article 11

Reference measurement methods

- 1. Member States shall apply the reference method for measurement of ozone, set out in point 8 of Section A of Annex VI. Other measuring methods may be used subject to the conditions set out in Section B of Annex VI.
- 2. Each Member State shall inform the Commission of the methods it uses to sample and measure VOC, as listed in Annex X.

Chapter III

Air Quality Management

Article 12

Requirements where the levels are lower than the limit values and concentration caps

In zones and agglomerations where the levels of sulphur dioxide, nitrogen dioxide, PM₁₀, PM_{2,5}, lead, benzene and carbon monoxide in ambient air are below the respective limit values or concentration caps specified in Annexes XI and XIV, Member States shall maintain that air quality status.

Article 13

Limit values for the protection of human health

1. Member States shall ensure that levels of sulphur dioxide PM₁₀, lead, and carbon monoxide in ambient air do not exceed the limit values laid down in Annex XI throughout their territory.

In respect of nitrogen dioxide and benzene, the limit values specified in Annex XI may not be exceeded from the dates specified therein.

The margins of tolerance laid down in Annex XI shall apply in accordance with Article 21.

2. The alert thresholds for concentrations of sulphur dioxide and nitrogen dioxide in ambient air shall be those laid down in Section A of Annex XII.
3. Member States may designate zones or agglomerations within which limit values for PM₁₀ are exceeded owing to concentrations of PM₁₀ in ambient air due to the resuspension of particulates following road-sanding in wintertime.

Member States shall send the Commission lists of any such zones or agglomerations together with information on concentrations and sources of PM₁₀ therein.

When informing the Commission in accordance with Article 25, Member States shall provide the necessary justification to demonstrate that any exceedances are due to such resuspended particulates and that reasonable measures have been taken to lower the concentrations.

Without prejudice to Article 19, in the case of the zones or agglomerations referred to in paragraph 1 Member States need establish the plans or programmes provided for in Article 21 only in so far as exceedances are attributable to PM₁₀ sources other than road-sanding in wintertime.

Article 14

Critical levels

1. Member States shall, in zones away from agglomerations and other built up areas, ensure compliance with the critical levels specified in XIII. However, where there is a significant risk of adverse effects, Member States may apply critical levels inside agglomerations and built up areas.
2. Where fixed measurements are the sole source of information for assessing air quality, the number of sampling points shall not be less than the minimum number specified in Section C of Annex V. Where that information is supplemented by indicative measurements or modelling then the minimum number of sampling points may be reduced by up to 50% so long as the assessed concentrations of the relevant pollutant can be established in accordance with the data quality objectives specified in Section A of Annex I.

Article 15

PM_{2,5} exposure reduction target and concentration cap for the protection of human health

1. Member States shall ensure that the exposure reduction target for PM_{2,5} laid down in Section B of Annex XIV is achieved within the timeframe specified therein.
2. The average exposure indicator for PM_{2,5} shall be assessed in accordance with Section A of Annex XIV.
3. Each Member State shall, in accordance with Annex III, ensure that the distribution and the individual number of sampling points on which the average exposure indicator for PM_{2,5} is based shall ensure that general population exposure is reflected adequately. The number of sampling points shall be no less than that determined by application of Section B of Annex V.
4. Member States shall ensure that concentrations of PM_{2,5} in ambient air do not exceed the concentration cap laid down in Section C of Annex XIV throughout their territory as from the date specified therein.
5. The margins of tolerance laid down in Section C of Annex XIV shall apply in accordance with Article 21.

Article 16

Requirements in zones and agglomerations where ozone concentrations exceed the long-term objectives

1. Member States shall ensure that the target values and long-term objectives specified in Annex VII are attained within the timeframe set out therein.
2. For zones and agglomerations in which a target value is exceeded, Member States shall ensure that the plan or programme prepared pursuant to Article 6 of Directive

2001/81/EC is implemented in order to attain the target values, save where not achievable through proportionate measures, as from the date specified in section A.2 of Annex VII.

Where in accordance with Article 21(1) of this Directive, plans and programmes must be prepared or implemented in respect of pollutants other than ozone, Member States shall, where appropriate, prepare and implement integrated plans or programmes covering all pollutants concerned.

3. For zones and agglomerations in which the levels of ozone in ambient air are higher than the long-term objectives but below, or equal to, the target values, Member States shall prepare and implement cost-effective measures with the aim of achieving the long-term objectives. Those measures shall, at least, be consistent with all of the plans and programmes described in paragraph 2.

Article 17

Requirements in zones and agglomerations where ozone concentrations meet the long-term objectives

In zones and agglomerations in which ozone levels meet the long-term objectives, Member States shall, in so far as factors including the transboundary nature of ozone pollution and meteorological conditions permit, maintain those levels below the long-term objectives and shall preserve through proportionate measures the best ambient air quality compatible with sustainable development and a high level of environmental and human health protection.

Article 18

Measures required in the event of information or alert thresholds being exceeded

Where the information threshold specified in Annex XII or any of the alert thresholds laid down therein are exceeded, Member States shall take the necessary steps to inform the public by means of radio, television, newspapers or the Internet.

Member States shall also forward to the Commission without delay, on a provisional basis, information concerning the levels recorded and the duration of the periods during which the alert threshold or information threshold were exceeded.

Article 19

Emissions from natural sources

1. Member States may designate zones or agglomerations where the exceedance of limit values or concentration caps for a given pollutant is attributable to natural sources.

Member States shall send the Commission lists of any such zones or agglomerations together with information on concentrations and sources and the evidence demonstrating that the exceedances are attributable to natural sources.

2. Where the Commission has been informed of an exceedance caused by natural sources in accordance with paragraph 1, that exceedance shall not be considered as an exceedance for the purposes of this Directive.

Article 20

Postponement of attainment deadlines and exemption from the obligation to apply certain limit values

1. Where, in a given zone or agglomeration, conformity with the limit values for nitrogen dioxide or benzene or the concentration cap for PM_{2,5} cannot be achieved by the deadlines specified in Annex XI or in Section C of Annex XIV, a Member State may postpone those deadlines by a maximum of five years for that particular zone or agglomeration, subject to the following conditions:
 - (a) establishment of a plan or a programme in accordance with Article 21 for the zone or agglomeration to which the postponement would apply, and communication of that plan or programme to the Commission;
 - (b) establishment, and communication to the Commission, of an air pollution abatement programme for the period of the postponement, which incorporates at least the information listed in Annex XV section B, and demonstrates that conformity will be achieved with the limit values or concentration caps before the new deadline.
2. Where, in a given zone or agglomeration, conformity with the limit values for sulphur dioxide, carbon monoxide, lead and PM₁₀ as specified in Annex XI cannot be achieved because of site-specific dispersion characteristics, adverse climatic conditions or transboundary contributions, Member States shall be exempt from the obligation to apply those limit values until 31 December 2009 at the latest, provided that the conditions laid down in paragraph 1(a) and (b) are fulfilled.
3. Where a Member State applies paragraphs 1 or 2, it shall ensure that the limit value or concentration cap for each pollutant is not exceeded by more than the maximum margin of tolerance specified for each of the pollutants concerned in Annexes XI or XIV.
4. Member States shall notify the Commission without delay where, in their view, paragraphs 1 or 2 are applicable, and shall transmit the plans or programmes and air pollution abatement programme referred to in paragraph 1(a) and (b) including all relevant information necessary for the Commission to assess whether or not the relevant conditions are satisfied.

Where the Commission has raised no objections within nine months of receipt of that notification, the relevant conditions for the application of paragraph 1 or paragraph 2 shall be deemed to be satisfied.

If objections are raised, the Commission may require Member States to adjust or provide new plans or programmes or air pollution abatement programmes.

Chapter IV

Plans and Programmes

Article 21

Air quality plans or programmes

1. Where, in given zones or agglomerations, the levels of pollutants in ambient air exceed any limit value or target value or concentration cap as well as any relevant margin of tolerance in each case, Member States shall ensure that plans or programmes are established for those zones and agglomerations in order to achieve the related limit or target value or concentration cap specified in Annexes XI and XIV.

Those plans or programmes shall incorporate at least the information listed in Section A of Annex XV and be transmitted to the Commission without delay.

2. Member States shall, to the extent feasible, ensure consistency with other plans required under Directive 2001/81/EC, Directive 2001/80/EC or Directive 2002/49/EC in order to achieve the relevant environmental objectives.
3. The plans or programmes referred to in paragraphs 1, 2 and the air pollution abatement programmes referred to in Article 20(1)(b) shall not be subject to assessment under Directive 2001/42/EC.

Article 22

Short-term action plans

1. Where, in a given zone or agglomeration, there is a risk that the level of pollutants in ambient air exceeds one or more of the limit values, concentration caps, target values or alert thresholds specified in Annexes VII, XI, XIV and Section A of Annex XII, Member States shall, where appropriate, draw up action plans indicating the measures to be taken in the short term in order to reduce that risk and to limit the duration of such an occurrence.

However, where there is a risk that the alert threshold for ozone specified in Section B of Annex XII is exceeded, Member States shall only draw up such short term actions plans when in their opinion there is a significant potential, taking into account national geographical, meteorological and economic conditions, to reduce the risk, duration or severity of such an exceedence. When drawing up such a short-term action plan Member States shall take account of Decision 2004/279/EC.

2. The short-term action plans referred to in paragraph 1 may, depending on the individual case, provide for measures to control and, where necessary, suspend activities, including motor-vehicle traffic, which contribute to the respective limit values or concentration caps or target value or alert threshold being exceeded. Those actions plans may also include effective measures in relation to the use of industrial plants or products.

3. Member States shall make available to the public and to appropriate organisations such as environmental organisations, consumer organisations, organisations representing the interests of sensitive population groups and other relevant health care bodies both the results of their investigations on the feasibility and the content of specific short-term action plans as well as information on the implementation of these plans.

Article 23

Transboundary air pollution

1. Where any alert threshold, limit or target value or concentration cap plus any relevant margin of tolerance or long-term objective is exceeded due to significant transboundary transport of pollutants or their precursors, the Member States concerned shall cooperate and, where appropriate, draw up joint activities, such as the preparation of joint or coordinated plans or programmes pursuant to Article 21 in order to remove such exceedences, through the application of appropriate but proportionate measures.
2. The Commission shall be invited to be present and assist in any cooperation referred to in paragraph 1. Where appropriate, the Commission shall, taking into account the reports established pursuant to Article 9 of Directive 2001/81/EC, consider whether further action should be taken at Community level in order to reduce precursor emissions responsible for transboundary pollution.
3. Member States shall, if appropriate pursuant to Article 22, prepare and implement joint short-term action plans covering neighbouring zones in different Member States. Member States shall ensure that neighbouring zones in different Member States, which have developed short-term action plans, receive all appropriate information.
4. Where the information threshold or alert thresholds are exceeded in zones or agglomerations close to national borders, information shall be provided as soon as possible to the competent authorities in the neighbouring Member States concerned. That information shall also be made available to the public.
5. In drawing up plans or programmes referred to in paragraph 1 and 2 and in informing the public as referred to in paragraph 4, Member States shall, where appropriate, pursue cooperation with third countries, and in particular with candidate countries.

Chapter V

Information and Reporting

Article 24

Public information

1. Member States shall ensure that the public as well as appropriate organisations such as environmental organisations, consumer organisations, organisations representing

the interests of sensitive populations and other relevant health-care bodies are adequately and timely informed on ambient air quality in accordance with Annex XVI, the postponement decision referred to in Article 20(1) and on the plans or programmes and air pollution abatement programmes provided for in Article 16(2), Article 20(1)(b) and Article 21.

The information shall be made available free of charge by means of any easily accessible media including the internet or any other appropriate means of telecommunication, and take into account the provisions laid down in Directive [...].

2. Member State shall make available to the public comprehensive annual reports for all pollutants regulated in this Directive.

The reports referred to above shall, as a minimum, summarize the levels exceeding limit values, concentration caps, target values, long-term objectives, information thresholds and alert threshold, for the relevant averaging periods. This information should be combined a summary assessment of the effects of these exceedences. They may include, where appropriate, further information and assessments on forest protection. The reports may also include information on other pollutants for which monitoring provisions are specified in this Directive, such as, inter alia, selected non-regulated ozone precursor substances as listed in Section B of Annex X.

Article 25

Transmission of information and reporting

Member States shall ensure that information on ambient air quality is made available to the Commission.

Article 26

Amending and implementing measures

1. The Commission shall in accordance with the procedure referred to in Article 27(2), amend Annexes I to VI, Annexes VIII to X and Annex XV where necessary.

However, the amendments may not have the effect of directly or indirectly modifying either

- (a) the limit values, concentration caps, exposure reduction requirements, critical levels, target values, information or alert thresholds nor long term objectives specified in Annexes VII and XI to XIV; or
 - (b) dates for the compliance with any of the parameters in (a) above.
2. The Commission shall, in accordance with the procedure referred to in Article 27(2), determine the information to be made available by Member States pursuant to Article 25.

The Commission shall also identify ways of streamlining the way such data are reported and the reciprocal exchange of information and data from networks and

individual stations measuring ambient air pollution within the Member States, in accordance with the procedure referred to in Article 27(2).

3. The Commission shall draw up guidelines for the agreements on the setting up common measuring stations as referred to in Article 6(5).
4. The Commission shall publish guidance on the demonstration of equivalence referred to in Section B of Annex VI.

Chapter VI

Committee, Transitional and Final Provisions

Article 27

Committee

1. The Commission shall be assisted by a committee, called “the ambient air quality committee”, hereinafter referred to as “the Committee”.
2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. The Committee shall adopt its Rules of Procedure.

Article 28

Penalties

The Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. The Member States shall notify those provisions to the Commission by the date specified in Article 30(1) at the latest and shall notify it without delay of any subsequent amendment affecting them.

Article 29

Repeal and transitional provisions

1. Directives 96/62/EC, 1999/30/EC, 2000/69/EC, and 2002/3/EC are repealed as from the date indicated in Article 30(1) of this Directive, without prejudice to the obligations on the Member States relating to time-limits for transposition or application of those Directives.

However, the following Articles shall remain in force:

- (a) Article 5 of Directive 96/62/EC until 31 December 2010;
 - (b) Article 11(1) of Directive 96/62/EC and Article 10(1) and 10(2) of Directive 2002/3/EC until the entry into force of the implementing measures referred to in Article 26(2);
 - (c) Article 9(3) and (4) of Directive 1999/30/EC until 31 December 2009.
- 2. References to the repealed Directives shall be construed as references to this Directive and shall be read in accordance with the correlation table in Annex XVII.
 - 3. Decision 97/101/EC is repealed with effect from the entry into force of the implementing measures referred to in Article 26(2).

Article 29a

Review

The Commission will review, within five years following the adoption of this Directive, the provisions related to PM_{2,5}. In particular the Commission will develop and propose a detailed approach to establish legally binding exposure reduction obligations which take account of differing future air quality situations and reduction potentials in the Member States.

Article 30

Transposition

- 1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 2007 at the latest. They shall forthwith communicate to the Commission the text of those provisions and a correlation table between those provisions and this Directive.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

- 2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

Article 31

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Union*.

Article 32

This Directive is addressed to the Member States.

Done at Brussels,

For the European Parliament
The President

For the Council
The President

ANNEX I

DATA QUALITY OBJECTIVES

A. DATA QUALITY OBJECTIVES FOR AIR QUALITY ASSESSMENT

	Sulphur dioxide, nitrogen dioxide and oxides of nitrogen and carbon monoxide	Benzene	Particulate matter (PM₁₀/PM_{2.5}) and lead	Ozone and related NO and NO₂
<i>Fixed measurements</i> ⁽¹⁾ Uncertainty Minimum data capture Minimum time coverage: urban background and tr	15 % 90 %	25% 90 % 35 % ⁽²⁾ 90 %	25% 90%	15 % 90 % during summer 75 % during winter
<i>Indicative measurements</i> Uncertainty Minimum data capture Minimum time coverage	25 % 90 % 14 % ⁽⁴⁾	30 % 90 % 14 % ⁽³⁾	50% 90% 14 % ⁽⁴⁾	30 % 90 % >10 % during summer
<i>Modelling uncertainty:</i> Hourly Eight-hour averages Daily averages Annual averages	50% - 50% 30%	- 50% - -	not yet defined 50%	50% 50%
<i>Objective estimation Uncertainty</i>	75 %	100 %	100 %	75 %

⁽¹⁾ Member States may apply random measurements instead of continuous measurements for benzene and particulate matter if they can demonstrate to the Commission that the uncertainty, including the uncertainty due to random sampling, meets the quality objective of 25 % and the time coverage is still larger than the minimum time coverage for indicative measurements. Random sampling must be evenly distributed over the year in order to avoid skewing of results. The uncertainty due to random sampling can be determined by the procedure laid down in ISO 11222 (2002) "Air Quality – Determination of the Uncertainty of the Time Average of Air Quality Measurements". If random measurements are used to assess the number of exceedences ($N_{[estimate]}$) of the PM₁₀ daily limit value, the following correction should be applied: $N_{[estimate]} = N_{[measurement]} \times 365 \text{ days} / \text{number of measured days}$.

⁽²⁾ distributed over the year to be representative of various conditions for climate and traffic

⁽³⁾ one day's measurement a week at random, evenly distributed over the year, or 8 weeks evenly distributed over the year

⁽⁴⁾ one measurement a week at random, evenly distributed over the year, or 8 weeks evenly distributed over the year

The uncertainty (expressed at a 95 % confidence level) of the assessment methods will be evaluated in accordance with the principles of the CEN Guide to the Expression of Uncertainty in Measurement (ENV 13005-1999), the methodology of ISO 5725:1994 and the guidance provided in the CEN report ‘Air Quality – Approach to Uncertainty Estimation for Ambient Air Reference Measurement Methods’ (CR 14377:2002E). The percentages for uncertainty in the above table are given for individual measurements averaged over the period considered by the limit value, for a 95 % confidence interval. The uncertainty for the fixed measurements shall be interpreted as being applicable in the region of the appropriate limit value.

The uncertainty for modelling and objective estimation is defined as the maximum deviation of the measured and calculated concentration levels, over the period considered, by the limit value, without taking into account the timing of the events.

The requirements for minimum data capture and time coverage do not include losses of data due to the regular calibration or the normal maintenance of the instrumentation.

B. RESULTS OF AIR QUALITY ASSESSMENT

The following information shall be compiled for zones or agglomerations within which sources other than measurement are employed to supplement information from measurement or as the sole means of air quality assessment:

- a description of assessment activities carried out;
- the specific methods used, with references to descriptions of the method;
- the sources of data and information;
- a description of results, including uncertainties and, in particular, the extent of any area or, if relevant, the length of road within the zone or agglomeration over which concentrations exceed any limit value, concentration cap, target value or long-term objective plus margin of tolerance, if applicable, and of any area within which concentrations exceed the upper assessment threshold or the lower assessment threshold.
- the population potentially exposed to levels in excess of any limit value.

C. QUALITY ASSURANCE FOR AIR QUALITY ASSESSMENT: DATA VALIDATION

1. To ensure accuracy of measurements and compliance with the data quality objectives laid down in Section A of this Annex, the appropriate competent authorities and bodies designated in Article 3 shall
 - ensure traceability of all measurements undertaken in relation to the assessment of ambient air quality pursuant to Article 4;

- ensure that institutions operating networks and individual stations have an established quality assurance and quality control system which provides for regular maintenance to assure the accuracy of measuring devices;
- ensure that a quality assurance/quality control process is established for the process of data collection and reporting and that institutions appointed for this task actively participate in the related EU-wide quality assurance programmes;
- ensure that the national laboratories, as appointed by the appropriate competent authority or body designated in Article 3, that are taking part in EU-wide intercomparisons covering pollutants regulated in this Directive, are accredited according to EN/ISO 17025 for the methods being performed in these intercomparisons, or are in the process of accreditation. These laboratories shall be involved in the coordination on Member States territory of the Community wide quality assurance programmes to be organized by the Commission and shall also coordinate, on the national level, the appropriate realization of reference methods and the demonstration of equivalence of non-reference methods.

2. All reported data are deemed to be valid.

ANNEX II

DETERMINATION OF REQUIREMENTS FOR ASSESSMENT OF CONCENTRATIONS OF SULPHUR DIOXIDE, NITROGEN DIOXIDE (NO₂), AND OXIDES OF NITROGEN (NO_x), PARTICULATE MATTER (PM₁₀ and PM_{2,5}), LEAD, CARBON MONOXIDE AND BENZENE IN AMBIENT AIR WITHIN A ZONE OR AGGLOMERATION

A. UPPER AND LOWER ASSESSMENT THRESHOLDS

The following upper and lower assessment thresholds will apply:

(a) Sulphur dioxide

	Health protection	Vegetation protection
Upper assessment threshold	60 % of 24-hour limit value (75 µg/m ³ , not to be exceeded more than 3 times in any calendar year)	60 % of winter limit value (12 µg/m ³)
Lower assessment threshold	40 % of 24-hour limit value (50 µg/m ³ , not to be exceeded more than 3 times in any calendar year)	40 % of winter limit value (8 µg/m ³)

(b) Nitrogen dioxide and oxides of nitrogen

	Hourly limit value for the protection of human health (NO₂)	Annual limit value for the protection of human health (NO₂)	Annual limit value for the protection of vegetation (NO_x)
Upper assessment threshold	70 % of limit value (140 µg/m ³ , not to be exceeded more than 18 times in any calendar year)	80 % of limit value (32 µg/m ³)	80 % of limit value (24 µg/m ³)
Lower assessment threshold	50 % of limit value (100 µg/m ³ , not to be exceeded more than 18 times in any calendar year)	65 % of limit value (26 µg/m ³)	65 % of limit value (19,5 µg/m ³)

(c) Particulate matter (PM₁₀ /PM_{2,5})

	24-hour average	Annual average PM₁₀	Annual average PM_{2,5}
Upper assessment threshold	30 µg/m ³ , not to be exceeded more than seven times in any calendar year	14 µg/m ³	10 µg/m ³
Lower assessment threshold	20 µg/m ³ , not to be exceeded more than seven times in any calendar year	10 µg/m ³	7 µg/m ³

(d) Lead

	Annual average
Upper assessment threshold	70% of limit value (0,35 µg/m ³)
Lower assessment threshold	50% of limit value (0,25 µg/m ³)

(e) Benzene

	Annual average
Upper assessment threshold	70 % of limit value (3,5 µg/m ³)
Lower assessment threshold	40 % of limit value (2 µg/m ³)

(f) Carbon Monoxide

	Eight-hour average
Upper assessment threshold	70 % of limit value (7 mg/m ³)
Lower assessment threshold	50 % of limit value (5 mg/m ³)

B. DETERMINATION OF EXCEEDENCES OF UPPER AND LOWER ASSESSMENT THRESHOLDS

Exceedances of upper and lower assessment thresholds shall be determined on the basis of concentrations during the previous five years where sufficient data are available. An assessment threshold shall be deemed to have been exceeded if it has been exceeded during at least three separate years out of those previous five years.

Where fewer than five years' data are available, Member States may combine measurement campaigns of short duration during the period of the year and at locations likely to be typical of the highest pollution levels with results obtained from information from emission inventories and modelling to determine exceedances of the upper and lower assessment thresholds.

ANNEX III

LOCATION OF SAMPLING POINTS FOR THE MEASUREMENT OF SULPHUR DIOXIDE, NITROGEN DIOXIDE AND OXIDES OF NITROGEN, PARTICULATE MATTER (PM₁₀ and PM_{2,5}), LEAD, CARBON MONOXIDE AND BENZENE IN AMBIENT AIR

The following shall apply to fixed measurements:

A. MACROSCALE SITING

(a) Protection of human health

1. Sampling points directed at the protection of human health shall be sited:
 - to provide data on the areas within zones and agglomerations where the highest concentrations occur to which the population is likely to be directly or indirectly exposed for a period which is significant in relation to the averaging period of the limit value(s) or concentration cap(s);
 - to provide data on levels in other areas within the zones and agglomerations which are representative of the exposure of the general population.
2. Sampling points shall in general be sited in such way as to avoid measuring very small micro-environments in their immediate vicinity, which in the following cases means that a sampling point must be sited in such a way that the air sampled is representative of air quality in a surrounding area of no less than 200 m² at traffic-orientated sites and at least 250 m x 250 m at industrial sites, where feasible.
3. Urban background sites shall be located so that their pollution level is influenced by the integrated contribution from all sources upwind of the station. It should not be dominated by a single source unless such situation is typical for a larger urban area. Those sampling points shall typically be representative for several square kilometres.
4. Where the objective is to assess background levels, the sampling site shall not be influenced by agglomerations or industrial sites in its vicinity, i.e. sites closer than a few kilometres.
5. Where contributions from industrial sources are to be assessed, at least one sampling point shall be installed downwind of the source in the nearest residential area. Where the background concentration is not known, an additional sampling point shall be situated within the main wind direction.
6. Sampling points shall, where possible, also be representative of similar locations not in their immediate vicinity.
7. Account shall be taken of the need to locate sampling points on islands where that is necessary for the protection of human health.

(b) Protection of vegetation

Sampling points targeted at the protection of vegetation shall be sited more than 20 km away from agglomerations or more than 5 km away from other built-up areas, industrial installations or motorways, which in the following cases mean that a sampling point must be sited in such a way that the air sampled is representative of air quality in a surrounding area of at least 1 000 km². A Member State may provide for a sampling point to be sited at a lesser distance or to be representative of air quality in a less extended area, taking account of geographical conditions.

Account shall be taken of the need to assess air quality on islands.

B. MICROSCALE SITING

In so far as practicable the following shall apply:

- the flow around the inlet sampling probe shall be unrestricted (free in an arc of at least 270°) without any obstructions affecting the airflow in the vicinity of the sampler (normally some metres away from buildings, balconies, trees and other obstacles by more than twice the height the obstacle protrudes above the sampler; at least 0,5 m from the nearest building in the case of sampling points representing air quality at the building line);
- in general, the inlet sampling point shall be between 1,5 m (the breathing zone) and 4 m above the ground. Higher positions (up to 8 m) may be necessary in some circumstances. Higher siting may also be appropriate if the station is representative of a large area;
- the inlet probe shall not be positioned in the immediate vicinity of sources in order to avoid the direct intake of emissions unmixed with ambient air;
- the sampler's exhaust outlet shall be positioned so that recirculation of exhaust air to the sampler inlet is avoided;
- location of traffic-orientated samplers:
 - (a) for all pollutants, such sampling points shall be at least 25 m from the edge of major junctions and at least 4 m from the centre of the nearest traffic lane;
 - (b) for nitrogen dioxide and carbon monoxide, inlets shall be no more than 5 m from the kerbside;
 - (c) for particulate matter, lead and benzene, inlets shall be sited so as to be representative of air quality near to the building line but no more than 10 m from the kerbside.

The following factors may also be taken into account:

- interfering sources;
- security;

- access;
- availability of electrical power and telephone communications;
- visibility of the site in relation to its surroundings;
- safety of the public and operators;
- the desirability of co-locating sampling points for different pollutants;
- planning requirements.

C. DOCUMENTATION AND REVIEW OF SITE SELECTION

The site-selection procedures shall be fully documented at the classification stage by such means as compass-point photographs of the surrounding area and a detailed map. Sites shall be reviewed at regular intervals with repeated documentation to ensure that selection criteria remain valid over time.

ANNEX IV

MEASUREMENTS AT BACKGROUND LOCATIONS IRRESPECTIVE OF CONCENTRATION

A. OBJECTIVES

The main objectives of such measurements are to ensure that adequate information is made available on levels in the background. This information is essential to judge the enhanced levels in more polluted areas (such as urban background, industry related locations, traffic related locations), assess the possible contribution from long range transport of air pollutants and to support source apportionment analysis. It is essential for the understanding of specific pollutants such as particulate matter. Further, this background information is essential for the increased use of modelling also in urban areas.

B. SUBSTANCES

Measurement of PM_{2,5} must include at least the mass concentration and appropriate compounds to characterise its chemical composition. At least the list of chemical species given below shall be included.

SO ₄ ²⁻	Na ⁺	NH ₄ ⁺	Ca ²⁺	elemental carbon (EC)
NO ₃ ⁻	K ⁺	Cl ⁻	Mg ²⁺	organic carbon (OC)

C. SITING

Measurements should be taken in particular in rural background areas in accordance with parts A, B, and C of Annex III.

ANNEX V

CRITERIA FOR DETERMINING MINIMUM NUMBERS OF SAMPLING POINTS FOR FIXED MEASUREMENT OF CONCENTRATIONS OF SULPHUR DIOXIDE (SO₂), NITROGEN DIOXIDE (NO₂) AND OXIDES OF NITROGEN, PARTICULATE MATTER (PM₁₀, PM_{2,5}), LEAD, CARBON MONOXIDE AND BENZENE IN AMBIENT AIR

A. MINIMUM NUMBER OF SAMPLING POINTS FOR FIXED MEASUREMENT TO ASSESS COMPLIANCE WITH LIMIT VALUES OR CONCENTRATION CAPS FOR THE PROTECTION OF HUMAN HEALTH AND ALERT THRESHOLDS IN ZONES AND AGGLOMERATIONS WHERE FIXED MEASUREMENT IS THE SOLE SOURCE OF INFORMATION.

(a) Diffuse sources

Population of agglomeration or zone (thousands)	If concentrations exceed the upper assessment threshold ⁽¹⁾	If maximum concentrations are between the upper and lower assessment thresholds
0-249	1	1
250-499	2	1
500-749	2	1
750-999	3	1
1 000-1 499	4	2
1 500-1 999	5	2
2 000-2 749	6	3
2 750-3 749	7	3
3 750-4 749	8	4
4 750-5 999	9	4
≥ 6 000	10	5

⁽¹⁾ For NO₂, particulate matter, carbon monoxide and benzene: to include at least one urban background monitoring station and one traffic-orientated station provided this does not increase the number of sampling points. The total number of urban-background stations and the total number of traffic oriented stations in a Member State shall not differ by more than a factor of 2.

(b) Point sources

For the assessment of pollution in the vicinity of point sources, the number of sampling points for fixed measurement shall be calculated taking into account emission densities, the likely distribution patterns of ambient-air pollution and the potential exposure of the population.

B. MINIMUM NUMBER OF SAMPLING POINTS FOR FIXED MEASUREMENT TO ASSESS COMPLIANCE WITH THE $PM_{2,5}$ EXPOSURE REDUCTION TARGET FOR THE PROTECTION OF HUMAN HEALTH

One sampling point per million inhabitants applied to agglomerations and additional conurbations in excess of 100,000 inhabitants shall be operated for this purpose. Those sampling points may coincide with sampling points under section A.

C. MINIMUM NUMBER OF SAMPLING POINTS FOR FIXED MEASUREMENTS TO ASSESS COMPLIANCE WITH CRITICAL LEVELS FOR THE PROTECTION OF VEGETATION IN ZONES OTHER THAN AGGLOMERATIONS

If maximum concentrations exceed the upper assessment threshold	If maximum concentrations are between upper and lower assessment threshold
1 station every 20 000 km ²	1 station every 40 000 km ²

In island zones the number of sampling points for fixed measurement should be calculated taking into account the likely distribution patterns of ambient-air pollution and the potential exposure of vegetation.

ANNEX VI

REFERENCE METHODS FOR ASSESSMENT OF CONCENTRATIONS OF SULPHUR DIOXIDE, NITROGEN DIOXIDE AND OXIDES OF NITROGEN, PARTICULATE MATTER (PM₁₀ AND PM_{2,5}), LEAD, CARBON MONOXIDE, BENZENE AND OZONE

A. REFERENCE MEASUREMENT METHODS

1. Reference method for the measurement of sulphur dioxide

The reference method for the measurement of sulphur dioxide is that described in EN14212:2005 'Ambient air quality – Standard method for the measurement of sulphur dioxide by ultraviolet fluorescence'.

2. Reference method for the measurement of nitrogen dioxide and oxides of nitrogen

The reference method for the measurement of nitrogen dioxide and oxides of nitrogen is that described in EN14211:2005 'Ambient air quality – Standard method for the measurement of the concentration of nitrogen dioxide and nitrogen monoxide by chemiluminescence'.

3. Reference method for the sampling and measurement of lead

The reference method for the sampling of lead is that described in Section A(4) of this Annex. The reference method for the measurement of lead is that described in EN 14902:2005 'Reference method for determination of Pb/Cd/As/Ni in ambient air'²⁰.

4. Reference method for the sampling and measurement of PM₁₀

The reference method for the sampling and measurement of PM₁₀ is that described in EN 12341:1999 'Air Quality – Determination of the PM₁₀ fraction of suspended particulate matter – Reference method and field test procedure to demonstrate reference equivalence of measurement methods'.

5. Reference method for the sampling and measurement of PM_{2,5}

The reference method for the sampling and measurement of PM_{2,5} is that described EN 14907:2005 'Standard gravimetric measurement method for the determination of the PM_{2,5} mass fraction of suspended particulate matter in Ambient air'.

6. Reference method for the sampling and measurement of benzene

The reference method for the measurement of benzene is that described in 14662:2005, parts 1, 2 and 3 'Ambient air quality - Reference method for measurement of benzene concentrations'.

²⁰ [Formal vote launched in March 2005, final version will become available in 2005]

7. Reference method for the measurement of carbon monoxide

The reference method for the measurement of carbon monoxide is that described in EN 14626:2005 ‘Ambient air quality – Standard method for the measurement of the concentration of carbon monoxide by nondispersive infrared spectroscopy’.

8. Reference method for measurement of ozone

The reference method for the measurement of ozone is that described in EN 14625:2005 ‘Ambient air quality – Standard method for the measurement of the concentration of ozone by ultraviolet photometry’.

B. DEMONSTRATION OF EQUIVALENCE

1. A Member State may use any other method which it can demonstrate gives results equivalent to any of the above methods or, in the case of particulate matter, any other method which the Member State concerned can demonstrate displays a consistent relationship to the reference method. In that event the results achieved by that method must be corrected to produce results equivalent to those that would have been achieved by using the reference method.
2. The Commission may require the Member States to prepare and submit a report on the demonstration of equivalence according to paragraph (a) above.
3. When assessing the acceptability of the report mentioned in paragraph (b), the Commission will make reference to its guidance on the demonstration of equivalence (to be published). Where Member States have been using interim factors to approximate equivalence then these shall be confirmed and/or amended with reference to the Commission’s guidance.
4. Member States should ensure that whenever appropriate, the correction should be applied also retroactively to past measurement data in order to achieve better data comparability.

C. STANDARDISATION

For gaseous pollutants the volume must be standardised at a temperature of 293 K and an atmospheric pressure of 101,3 kPa. For particulate matter and substances to be analysed in particulate matter (e.g. lead) the sampling volume refer to ambient conditions.

ANNEX VII

TARGET VALUES AND LONG-TERM OBJECTIVES

A. OZONE TARGET VALUES AND LONG TERM OBJECTIVES

1. Definitions and criteria

(a) Definitions

AOT40 (expressed in $(\mu\text{g}/\text{m}^3) \cdot \text{hours}$) means the sum of the difference between hourly concentrations greater than $80 \mu\text{g}/\text{m}^3$ (= 40 parts per billion) and $80 \mu\text{g}/\text{m}^3$ over a given period using only the 1 hour values measured between 8:00 and 20:00 Central European Time each day²¹.

(b) Criteria

The following criteria shall be used for checking validity when aggregating data and calculating statistical parameters:

Parameter	Required proportion of valid data
1 hour values	75 % (i.e. 45 minutes)
8 hours values	75 % of values (i.e. 6 hours)
Maximum daily 8 hours mean from hourly running 8 hours	75 % of the hourly running 8 hours averages (i.e. 188 hourly averages per day)
AOT40	90 % of the 1 hour values over the time period defined for calculating the AOT40 value ^(a)
Annual mean	90 % of the 1 hour values over summer (April to September) and 75 % over winter (January to March, October to December) seasons separately
Number of exceedances and maximum values per month	90 % of the daily maximum 8 hours mean values (27 available daily values per month) 90 % of the 1 hour values between 8:00 and 20:00 Central European Time
Number of exceedances and maximum values per year	five out of six months over the summer season (April to September)

^(a) In cases where all possible measured data are not available, the following factor shall be used to calculate AOT40 values:

$$\text{AOT40}_{\text{estimate}} = \text{AOT40}_{\text{measured}} \times \frac{\text{total possible number of hours}^*}{\text{number of measured hourly values}}$$

* being the number of hours within the time period of AOT40 definition, (i.e. 08:00 to 20:00 h CET from 1 May to 31 July each year, for vegetation protection and from 1 April to 30 September each year for forest protection).

²¹ or the appropriate time for ultra-peripheral regions

2. Target values

Objective	Averaging period	Target value	Date by which target value should be met
Protection of human health	Maximum daily 8-hour mean ^(a)	120 µg/m ³ not to be exceeded on more than 25 days per calendar year averaged over three years ^(b)	2010
Protection of vegetation	May to July	AOT40 (calculated from 1 h values) 18 000 µg/m ³ •h averaged over five years ^(b)	2010

^(a) The maximum daily 8-hour mean concentration shall be selected by examining 8-hour running averages, calculated from hourly data and updated each hour. Each 8-hour average so calculated shall be assigned to the day on which it ends, i.e. the first calculation period for any one day will be the period from 17:00 on the previous day to 01:00 on that day; the last calculation period for any one day will be the period from 16:00 to 24:00 on the day.

^(b) If the three or five year averages cannot be determined on the basis of a full and consecutive set of annual data, the minimum annual data required for checking compliance with the target values will be as follows:

- for the target value for the protection of human health: valid data for one year;
- for the target value for the protection of vegetation: valid data for three years.

3. Long-term objectives

Objective	Averaging period	Target value	Date by which the long-term objective should be met
Protection of human health	Maximum daily 8-hour mean ^(a) within a calendar year	120 µg/m ³	-
Protection of vegetation	May to July	AOT40, (calculated from 1 h values) 6 000 µg/m ³ •h	-

ANNEX VIII

CRITERIA FOR CLASSIFYING AND LOCATING SAMPLING POINTS FOR ASSESSMENTS OF OZONE CONCENTRATIONS

The following apply to fixed measurements:

A. MACROSCALE SITING

Type of station	Objectives of measurement	Representativeness ^(a)	Macroscale siting criteria
Urban	Protection of human health: to assess the exposure of the urban population to ozone, i.e. where population density and ozone concentration are relatively high and representative of the exposure of the general population	A few km ²	Away from the influence of local emissions such as traffic, petrol stations, etc.; Vented locations where well mixed levels can be measured; Locations such as residential and commercial areas of cities, parks (away from the trees), big streets or squares with very little or no traffic, open areas characteristic of educational, sports or recreation facilities
Suburban	Protection of human health and vegetation: to assess the exposure of the population and vegetation located in the outskirts of the agglomeration, where the highest ozone levels, to which the population and vegetation is likely to be directly or indirectly exposed, occur	Some tens of km ²	At a certain distance from the area of maximum emissions, downwind following the main wind direction/directions during conditions favourable to ozone formation; Where population, sensitive crops or natural ecosystems located in the outer fringe of an agglomeration are exposed to high ozone levels; Where appropriate, some suburban stations also upwind of the area of maximum emissions, in order to determine the regional background levels of ozone
Rural	Protection of human health and vegetation: to assess the exposure of population, crops and natural ecosystems to sub-regional scale ozone concentrations	Sub-regional levels (a few km ²)	Stations can be located in small settlements and/or areas with natural ecosystems, forests or crops; Representative for ozone away from the influence of immediate local emissions such as industrial installations and roads; At open area sites, but not on higher mountain tops
Rural background	Protection of vegetation and human health: to assess the exposure of crops and natural ecosystems to regional-scale ozone concentrations as well as exposure of the population	Regional/national/continental levels (1 000 to 10 000 km ²)	Station located in areas with lower population density, e.g. with natural ecosystems, forests, far removed from urban and industrial areas and away from local emissions; Avoid locations which are subject to locally enhanced formation of ground-near inversion conditions, also summits of higher mountains; Coastal sites with pronounced diurnal wind cycles of local character are not recommended.

^(a) Sampling points should, where possible, be representative of similar locations not in their immediate vicinity.

For rural and rural background stations the location shall, where appropriate, be coordinated with the monitoring requirements of Commission Regulation (EC) No 1091/94 concerning protection of the Community's forests against atmospheric pollution²².

B. MICROSCALE SITING

In so far as practicable the procedure on microscale siting in Section B of Annex III shall be followed, ensuring also that the inlet probe shall be positioned well away from such sources as furnaces and incineration flues and more than 10 m from the nearest road, with distance increasing as a function of traffic intensity.

C. DOCUMENTATION AND REVIEW OF SITE SELECTION

The procedures in Section C of Annex III shall be followed, applying proper screening and interpretation of the monitoring data in the context of the meteorological and photochemical processes affecting the ozone concentrations measured at the respective site.

²² OJ L 125, 18.5.1994, p. 1.

ANNEX IX

CRITERIA FOR DETERMINING THE MINIMUM NUMBER OF SAMPLING POINTS FOR FIXED MEASUREMENT OF CONCENTRATIONS OF OZONE

A. MINIMUM NUMBER OF SAMPLING POINTS FOR FIXED CONTINUOUS MEASUREMENTS TO ASSESS AIR QUALITY IN VIEW OF COMPLIANCE WITH TARGET VALUES, LONG-TERM OBJECTIVES AND INFORMATION AND ALERT THRESHOLDS WHERE SUCH MEASUREMENTS ARE THE SOLE SOURCE OF INFORMATION

Population (× 1 000)	Agglomerations (urban and suburban) ^(a)	Other zones (suburban and rural) ^(a)	Rural background
< 250		1	1 station/50 000 km ² as an average density over all zones per country ^(b)
< 500	1	2	
< 1 000	2	2	
< 1 500	3	3	
< 2 000	3	4	
< 2 750	4	5	
< 3 750	5	6	
> 3 750	1 additional station per 2 million inhabitants	1 additional station per 2 million inhabitants	

^(a) At least 1 station in suburban areas, where the highest exposure of the population is likely to occur. In agglomerations at least 50 % of the stations shall be located in suburban areas.

^(b) 1 station per 25 000 km² for complex terrain is recommended.

B. MINIMUM NUMBER OF SAMPLING POINTS FOR FIXED MEASUREMENTS FOR ZONES AND AGGLOMERATIONS ATTAINING THE LONG-TERM OBJECTIVES

The number of sampling points for ozone shall, in combination with other means of supplementary assessment such as air quality modelling and colocated nitrogen dioxide measurements, be sufficient to examine the trend of ozone pollution and check compliance with the long-term objectives. The number of stations located in agglomerations and other zones may be reduced to one-third of the number specified in Section A above. Where information from fixed measurement stations is the sole source of information, at least one monitoring station shall be kept. If, in zones where there is supplementary assessment, the result of this is that a zone has no remaining station, coordination with the number of stations in neighbouring zones shall ensure adequate assessment of ozone concentrations against long-term objectives. The number of rural background stations shall be 1 per 100 000 km².

ANNEX X

MEASUREMENTS OF OZONE PRECURSOR SUBSTANCES

A. OBJECTIVES

The main objectives of such measurements are to analyse any trend in ozone precursors, to check the efficiency of emission reduction strategies, to check the consistency of emission inventories and to help attribute emission sources to observed pollution concentrations.

An additional aim is to support the understanding of ozone formation and precursor dispersion processes, as well as the application of photochemical models.

B. SUBSTANCES

Measurement of ozone precursor substances shall include at least nitrogen oxides (NO and NO₂), and the following VOC:

	1-Butene	Isoprene	Ethyl benzene
Ethane	Trans-2-Butene	n-Hexane	m+p-Xylene
Ethylene	cis-2-Butene	i-Hexane	o-Xylene
Acetylene	1,3-Butadiene	n-Heptane	1,2,4-Trimethylebenzene
Propane	n-Pentane	n-Octane	1,2,3- Trimethylebenzene
Propene	i-Pentane	i-Octane	1,3,5- Trimethylebenzene
n-Butane	1-Pentene	Benzene	Formaldehyde
i-Butane	2-Pentene	Toluene	Total non-methane hydrocarbons

C. SITING

Measurements shall be taken in particular in urban and suburban areas at any monitoring site set up in accordance with the requirements of this Directive and considered appropriate with regard to the above monitoring objectives.

ANNEX XI

LIMIT VALUES FOR THE PROTECTION OF HUMAN HEALTH

Averaging Period	Limit value	Margin of tolerance	Date by which limit value is to be met
Sulphur dioxide			
1 hour	350 µg/m ³ , not to be exceeded more than 24 times a calendar year	150 µg/ m ³ (43%)	
1 day	125 µg/m ³ , not to be exceeded more than 3 times a calendar year	None	
Nitrogen dioxide			
1 hour	200 µg/m ³ , not to be exceeded more than 18 times a calendar year	50% on 19 July 1999, reducing on 1 January 2001 and every 12 months thereafter by equal annual percentages to reach 0% by 1 January 2010	1 January 2010
Calendar year	40 µg/m ³	50% on 19 July 1999, reducing on 1 January 2001 and every 12 months thereafter by equal annual percentages to reach 0% by 1 January 2010	1 January 2010
Carbon monoxide			
max. daily 8-hour mean ⁽¹⁾	10 mg/m ³	60 %	
Benzene			
Calendar year	5 µg/m ³	5 µg/m ³ (100%) on 13 December 2000, reducing on 1 January 2006 and every 12 months thereafter by 1 µg/m ³ to reach 0% by 1 January 2010	1 January 2010
Lead			
Calendar year	0,5 µg/m ³	100 %	
PM₁₀			
1 day	50 µg/ m ³ , not to be exceeded more than 35 times a calendar year	50 %	
Calendar year	40 µg/m ³	20 %	

⁽¹⁾ The maximum daily 8-hour mean concentration will be selected by examining 8-hour running averages, calculated from hourly data and updated each hour. Each 8-hour average so calculated will be assigned to the day on which it ends i.e. the first calculation period for any one day will be the period from 17:00 on the previous day to 01:00 on that day; the last calculation period for any one day will be the period from 16:00 to 24:00 on that day.

ANNEX XII

INFORMATION AND ALERT THRESHOLDS

A. ALERT THRESHOLDS FOR POLLUTANTS OTHER THAN OZONE

To be measured over three consecutive hours at locations representative of air quality over at least 100 km² or an entire zone or agglomeration, whichever is the smaller.

Pollutant	Alert threshold
Sulphur dioxide	500 µg/m ³
Nitrogen dioxide	400 µg/m ³

B. INFORMATION AND ALERT THRESHOLDS FOR OZONE

Purpose	Averaging period	Threshold
Information	1 hour	180 µg/m ³
Alert	1 hour ^(a)	240 µg/m ³

^(a) For the implementation of Article 18, the exceedance of the threshold is to be measured or predicted for three consecutive hours.

ANNEX XIII

CRITICAL LEVELS FOR THE PROTECTION OF VEGETATION

Averaging period	Critical Level	Margin of tolerance	Date by which Critical Level is to be met
Sulphur dioxide			
Calendar year and winter (1 October to 31 March)	20 µg/ m ³	None	
Oxides of nitrogen			
Calendar year	30 µg/m ³ NO _x	None	

ANNEX XIV

EXPOSURE REDUCTION TARGET AND CONCENTRATION CAP FOR PM_{2,5}

A. AVERAGE EXPOSURE INDICATOR (AEI)

The Average Exposure Indicator expressed in $\mu\text{g}/\text{m}^3$ (AEI) shall be based upon measurements in urban background locations in zones and agglomerations throughout the territory of a Member State. It should be assessed as a 3-calendar year running annual mean concentration averaged over all sampling points established pursuant to Articles 6 and 7. The AEI for the reference year 2010 shall be the mean concentration of the years 2008, 2009 and 2010. Similarly, the AEI for the year 2020 shall be the 3-year running mean concentration averaged over all sampling points for the years 2018, 2019 and 2020.

B. EXPOSURE REDUCTION TARGET

Exposure Reduction Target relative to the AEI in 2010	Date by which the exposure reduction target should be met
20 percent	2020

Where the average exposure indicator expressed in $\mu\text{g}/\text{m}^3$ in the reference year is $7\mu\text{g}/\text{m}^3$ or less the exposure reduction target shall be zero

C. CONCENTRATION CAP

Averaging Period	Concentration cap	Margin of tolerance ⁽¹⁾	Date by which concentration cap is to be met
Calendar year	$25 \mu\text{g}/\text{m}^3$	20 % on the entry into force of this Directive, reducing on the next 1 January following and every 12 months there after by equal annual percentages to reach 0 % by 1 January 2010	1 January 2010

⁽¹⁾ The maximum margin of tolerance applies also in accordance with Article 15(4)

ANNEX XV

INFORMATION TO BE INCLUDED IN THE LOCAL, REGIONAL OR NATIONAL PLANS OR PROGRAMMES FOR IMPROVEMENT IN THE AMBIENT AIR QUALITY

A. INFORMATION TO BE PROVIDED UNDER ARTICLE 21 (PLANS OR PROGRAMMES)

1. Localization of excess pollution

- (a) region;
- (b) city (map);
- (c) measuring station (map, geographical coordinates).

2. General information

- (a) type of zone (city, industrial or rural area);
- (b) estimate of the polluted area (km²) and of the population exposed to the pollution;
- (c) useful climatic data;
- (d) relevant data on topography;
- (e) sufficient information on the type of targets requiring protection in the zone.

3. Responsible authorities

Names and addresses of persons responsible for the development and implementation of improvement plans.

4. Nature and assessment of pollution

- (a) concentrations observed over previous years (before the implementation of the improvement measures);
- (b) concentrations measured since the beginning of the project - techniques used for the assessment.

5. Origin of pollution

- (a) list of the main emission sources responsible for pollution (map) - total quantity of emissions from these sources (tonnes/year);
- (b) information on pollution imported from other regions.

6. Analysis of the situation

- (a) details of those factors responsible for the exceedence (e.g. transport, including cross-border transport, formation of secondary pollutants in the atmosphere);
 - (b) details of possible measures for the improvement of air quality.
- 7. Details of those measures or projects for improvement which existed prior to the entry into force of this Directive i.e.
 - (a) local, regional, national, international measures;
 - (b) observed effects of these measures.
- 8. Details of those measures or projects adopted with a view to reducing pollution following the entry into force of this Directive
 - (a) listing and description of all the measures set out in the project
 - (b) timetable for implementation
 - (c) estimate of the improvement of air quality planned and of the expected time required to attain these objectives.
- 9. Details of the measures or projects planned or being researched for the long term.
- 10. List of the publications, documents, work, etc., used to supplement information requested in this Annex.

**B. INFORMATION TO BE PROVIDED UNDER ARTICLE 20(1)(b)
(AIR POLLUTION ABATEMENT PROGRAMME)**

- 1. All information as laid down in section A of this Annex.
- 2. Information concerning the status of implementation of the following directives:
 - (1) Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants.
 - (2) Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants.
 - (3) Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control.
 - (4) Council Directive 1999/32/EC²³ of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels and amending Directive 93/12/EEC.

²³ OJ L 121, 11.05.1999, p. 13

- (5) Proposal for a Directive of the European Parliament and of the Council amending Directive 1999/32/EC as regards the sulphur content of marine fuels COM (2002) 595²⁴.
- (6) Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC.
- (7) European Parliament and Council Directive 94/63/EC²⁵ of 20 December 1994 on the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations.
- (8) Council Directive 1999/13/EC²⁶ of 11 March 1999 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations.
- (9) Directive 2004/42/EC²⁷ of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC.
- (10) Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste.
- (11) Council Directive 70/220/EEC²⁸ of 20 March 1970 on the approximation of the laws of the Member States relating to measures to be taken against air pollution by gases from positive-ignition engines of motor vehicles 70/220/EEC (light vehicles) as amended.
- (12) Council Directive 88/77/EEC²⁹ of 3 December 1987 on the approximation of the laws of the Member States relating to the measures to be taken against the emission of gaseous pollutants from diesel engines for use in vehicles 88/77/EC as amended.
- (13) Directive 1997/68/EC³⁰ of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery as amended.
- (14) Directive [...] of the European Parliament and of the Council on energy end-use efficiency and energy services³¹.

²⁴ OJ L, xx.xx.xxxx, p. xx.

²⁵ OJ L 365, 31.12.1994, p. 24

²⁶ OJ L 85, 29.3.1999, p. 1.

²⁷ OJ L 143, 30.4.2004, p. 87.

²⁸ OJ L81, 11.4.70, p. 15.

²⁹ OJ L36, 9.2.88, p. 33.

³⁰ OJ L59, 27.2.98, p. 1.

³¹ OJ L, xx.xx.xxxx, p. xx.

3. Information on all air pollution abatement measures that have been considered for implementation in connection with the attainment of air quality objectives, including:

At the level of agglomeration or zone:

- (a) Reduction of emissions from stationary sources by ensuring that polluting small and medium sized stationary combustion sources (including for biomass) are fitted with emission control equipment or replaced.
- (b) Reduction of emissions from vehicles through retrofitting with emission control equipment. The use of economic incentives to accelerate take-up should be considered.
- (c) Procurement by public authorities, in line with the handbook on environmental public procurement,³² of road vehicles, fuels and combustion equipment to reduce emissions, including the purchase of:
 - new vehicles, including low emission vehicles
 - cleaner vehicle transport services
 - low emission stationary combustion sources
 - low emission fuels for stationary and mobile sources
- (d) Measures to limit transport emissions through traffic planning and management (including congestion pricing, differentiated parking fees or other economic incentives; establishing “low emission zones”)
- (e) Measures to encourage a shift of transport towards less polluting modes
- (f) Ensuring that low emission fuels are used in small, medium and large scale stationary sources and in mobile sources

At regional or national level

- (g) Measures to reduce air pollution through permitting under Directive 96/61/EC³³, the national plans under Directive 2001/80/EC, and through the use of economic instruments such as taxes, charges or emission trading.

³² SEC(2004) 1050

³³ OJ L 257, 10.10.1996, p. 22.

ANNEX XVI

PUBLIC INFORMATION

1. Member States shall ensure that up-to-date information on ambient concentrations of the pollutants regulated in this Directive is routinely made available to the public.
2. Ambient concentrations provided shall be presented as average values according to the appropriate averaging period as laid down in the Annexes VII, XI to XIV. The information shall at least indicate any levels exceeding air quality objectives including limit values, concentration caps, target values, alert thresholds, information thresholds or long term objectives of the regulated pollutant. It shall also provide a short assessment in relation to the air quality objectives and appropriate information regarding effects on health, or, where appropriate, vegetation.
3. Information on ambient concentrations of sulphur dioxide, nitrogen dioxide, particulate matter, ozone and carbon monoxide shall be updated on at least a daily basis, and, wherever practicable, information shall be updated on an hourly basis. Information on ambient concentrations of lead and benzene, presented as an average value for the last 12 months, shall be updated on a three-monthly basis, and on a monthly basis, wherever practicable.
4. Member States shall ensure that timely information about actual or predicted exceedances of alert thresholds, and any information threshold is provided to the public. Details supplied shall include at least the following information:
 - (a) Information on observed exceedance(s):
 - location or area of the exceedance;
 - type of threshold exceeded (information or alert);
 - start time and duration of the exceedance;
 - highest 1 hour concentration and in addition highest 8 hour mean concentration in the case of ozone.
 - (b) Forecast for the following afternoon/day(s):
 - geographical area of expected exceedances of information and/or alert threshold;
 - expected change in pollution (improvement, stabilisation or deterioration), together with the reasons for those changes.
 - (c) Information on the type of population concerned, possible health effects and recommended behaviour:
 - information on population groups at risk;
 - description of likely symptoms;
 - recommended precautions to be taken by the population concerned;

- where to find further information.
- (d) Information on preventive action to reduce pollution and/or exposure to it: indication of main source sectors; recommendations for action to reduce emissions.
- (e) In the case of predicted exceedences, Member State shall take steps that such details are supplied to the extent practicable.

ANNEX XVII

CORRELATION TABLE

This Directive	Directive 96/62/EC	Directive 1999/30/EC	Directive 2000/69/EC	Directive 2002/3/EC
Article 1	Article 1	Article 1	Article 1	Article 1
Article 2(1) to (5)	Article 2(1) to (5)	-	-	-
Article 2(6) and (7)	-	-	-	-
Article 2(8)	Article 2(8)	Article 2(7)	-	-
Article 2(9)	Article 2(6)	-	-	Article 2(9)
Article 2(10)	Article 2(7)	Article 2(6)	-	Article 2(11)
Article 2(11)	-	-	-	Article 2(12)
Article 2(12) and (13)	-	Article 2(13) and (14)	Article 2(a) and (b)	-
Article 2(14)	-	-	-	Article 2(10)
Article 2(15) and (16)	Article 2(9) and (10)	Article 2(8) and (9)	-	Article 2(7) and (8)
Article 2(17) and (18)	-	Article 2(11) and (12)	-	-
Article 2(19), (20) and (21)	-	-	-	-
Article 2(22)	-	Article 2(10)	-	-
Article 2(23) and (24)	Article 6(5)	-	-	-
Article 2(25)	-	-	-	Article 2(13)
Article 3, with the exception of paragraph (1)(f)	Article 3	-	-	-
Article 3(1)(f)	-	-	-	-
Article 4	Article 2(9) and (10), Article	-	-	-

	6(1)			
Article 5	-	Article 7(1)	Article 5(1)	-
Article 6 (1) to (4)	Article 6 (1) to (4)	-	-	-
Article 6 (5)	-	-	-	-
Article 7	-	Article 7 (2) and (3) with amendments	-	Article 5(2) and (3) with amendments
Article 8	-	Article 7(5)	Article 5(5)	-
Article 9	-	-	-	Article 9(1) 1 st and 2 nd indent
Article 10	-	-	-	Article 9(1) to (3) with amendments
Article 11(1)	-	-	-	Article 9(4)
Article 11(2)	-	-	-	-
Article 12	Article 9	-	-	-
Article 13(1)	-	Articles 3(1), 4(1), 5(1) and 6	Articles 3(1) and 4	-
Article 13(2)	-	Articles 3(2) and 4(2)	-	-
Article 13(3)	-	Article 5(5)	-	-
Article 14	-	Articles 3(1) and 4(1) with amendments	-	-
Article 15	-	-	-	-
Article 16(1)	-	-	-	Articles 3(1) and 4(1)
Article 16(2)	-	-	-	Article 3(2) and (3)
Article 16(3)	-	-	-	Article 4(2)
Article 17	-	-	-	Article 5

Article 18	Article 10 with amendments	Article 8(3)	-	Article 6 with amendments
Article 19	-	Articles 3(4) and 5(4) with amendments	-	-
Article 20	-	-	-	-
Article 21	Article 8(1) to (4) with amendments	-	-	-
Article 22	Article 7(3) with amendments	-	-	Article 7 with amendments
Article 23	Article 8(5) with amendments	-	-	Article 8 with amendments
Article 24	-	Article 8 with amendments	Article 7 with amendments	Article 6 with amendments
Article 25	Article 11 with amendments	Article 5(2) second subparagraph	-	Article 10 with amendments
Article 26(1)	Article 12(1) with amendments	-	-	-
Article 26(2)	Article 11 with amendments	-	-	-
Article 26(3)	-	-	-	-
Article 26(4)	-	Annex IX with amendments	-	-
Article 27	Article 12(2)	-	-	-
Article 28	-	Article 11	Article 9	Article 14
Article 29	-	-	-	-
Article 29a	-	-	-	-
Article 30	Article 13	Article 12	Article 10	Article 15
Article 31	Article 14	Article 13	Article 11	Article 17
Article 32	Article 15	Article 14	Article 12	Article 18

Annex I	-	Annex VIII with amendments	Annex VI	Annex VII
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Annex V	-	Annex VII with amendments	Annex V	-
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Annex VII	-	-	-	Annex I, Annex III section II
Annex VIII	-	-	-	Annex IV
Annex IX	-	-	-	Annex V
Annex X	-	-	-	Annex VI
Annex XI	-	Annex I, section I, Annex II, section I and Annex III (with amendments); Annex IV (unchanged)	Annex I, Annex II	-
Annex XII	-	Annex I, section II, Annex II, section II,	-	Annex II, section I
Annex XIII	-	Annex I, section I, Annex II, section I	-	-
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Annex XV Section A	Annex IV	-	-	-
Annex XV Section B	-	-	-	-
Annex XVI	-	Article 8	Article 7	Article 6 with amendments

