

II

(Preparatory Acts)

COMMISSION

Amended proposal for a European Parliament and Council Directive on the incineration of waste ⁽¹⁾

(2000/C 150 E/01)

(Text with EEA relevance)

COM(1999) 330 final — 98/0289(COD)

(Submitted by the Commission in accordance with Article 250(2) of the EC Treaty on 13 July 1999)⁽¹⁾ OJ C 372, 2.12.1998.

INITIAL PROPOSAL

AMENDED PROPOSAL

THE COUNCIL OF THE EUROPEAN UNION,

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 130s(1) thereof,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission,

Unchanged

Having regard to the Opinion of the Economic and Social Committee,

Having regard to the Opinion of the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 189c of the Treaty, in cooperation with the European Parliament,

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

(1) Whereas the fifth Environment Action Programme: Towards sustainability — A European Community programme of policy and action in relation to the environment and sustainable development ⁽¹⁾ sets as an objective 'no exceedance ever of critical loads and levels' of certain pollutants such as nitrogen oxides (NO_x), sulphur dioxide (SO₂), heavy metals and dioxins while in terms of air quality the objective is that 'all people should be effectively protected against recognised health risks from Air Pollution'; whereas that Programme further sets as an objective a '90 % reduction of dioxin emissions of identified sources by 2005 (1985 level)' and 'at least 70 % reduction from all pathways of cadmium (Cd), mercury (Hg) and lead (Pb) emissions in 1995';

Unchanged

⁽¹⁾ OJ C 138, 17.5.1993, p. 5.

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- (2) Whereas the Protocol on persistent organic pollutants signed by the Community within the framework of the United Nations Economic Commission for Europe (UN-ECE) Convention on long-range transboundary air pollution sets legally binding limit values for the emission of dioxins and furans of 0,1 ng/m³ TE (Toxicity Equivalents) for installations burning more than 3 tonnes per hour of municipal solid waste, 0,5 ng/m³ TE for installations burning more than 1 tonne per hour of medical solid waste, and 0,2 ng/m³ TE burning more than 1 tonne per hour of hazardous waste;
- (3) Whereas the Protocol on Heavy Metals signed by the Community within the framework of the United Nations Economic Commission for Europe (UN-ECE) Convention on Long-Range Transboundary Air Pollution sets legally binding limit values for the emission of particulate of 10 mg/m³ for hazardous and medical waste incineration and for the emission of mercury of 0,05 mg/m³ for hazardous waste incineration and 0,08 mg/m³ for municipal waste incineration;
- (4) Whereas Council Directives 89/369/EEC⁽¹⁾ and 89/429/EEC⁽²⁾ on the prevention and reduction of air pollution from municipal waste incineration plants contributed to the reduction and control of atmospheric emissions from incineration plants; whereas more stringent rules should now be adopted and those Directives should accordingly be repealed;

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- (4a) Whereas Council Directive 94/67/EC on the incineration of hazardous waste also contributed to the reduction and control of atmospheric emissions from incineration plants; whereas harmonised standards and a single text on incineration will improve legal clarity and enforceability;
- (4b) Whereas the substance and structure of Council Directive 94/67/EC are fully taken into account in this Directive;
- (4c) Whereas the approach provided for in Annex II will ensure that similar standards apply to incineration and co-incineration;
- (4d) Whereas the introduction of emission limit values for the discharge of waste water from the cleaning of exhaust gases from incineration and co-incineration plants will prevent a transfer of pollutants from the air into water;

⁽¹⁾ OJ L 163, 14.6.1989, p. 32.

⁽²⁾ OJ L 203, 15.7.1989, p. 50.

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(5) Whereas, in accordance with the principle of subsidiarity and the principle of proportionality as set out in Article 3b of the Treaty, the objective of reducing emissions from incineration and co-incineration plants cannot be achieved effectively by Member States acting individually; whereas uncoordinated action offers no guarantee of achieving the desired objective; whereas, in view of the need to reduce emissions across the Community, it is more effective to take action at the level of the Community; whereas this Directive confines itself to minimum requirements for incineration and co-incineration plants;

(5) Whereas, in accordance with the principle of subsidiarity and the principle of proportionality as set out in Article 5 of the Treaty, the objective of reducing emissions from incineration and co-incineration plants cannot be achieved effectively by Member States acting individually; whereas uncoordinated action offers no guarantee of achieving the desired objective; whereas, in view of the need to reduce emissions across the Community, it is more effective to take action at the level of the Community; whereas this Directive confines itself to minimum requirements for incineration and co-incineration plants;

(6) Whereas Council Resolution 97/C 76/01 of 24 February 1997⁽¹⁾ on a Community strategy for waste management underlines the importance of Community criteria concerning the use of waste, the need for appropriate emission standards to apply to incineration facilities, the need for monitoring measures to be envisaged for existing incineration plants, and the need for the Commission to consider amending Community legislation in relation to the incineration of waste with energy recovery in order to avoid large-scale movements of waste in the Community;

Unchanged

(6a) Whereas the Communication from the Commission on the review of the Community Strategy for Waste Management (COM(96) 399 final) assigns prevention of waste the first priority, followed by reuse and recovery and finally by safe disposal of waste; Whereas, in its Resolution of 24 February 1997 on a Community Strategy for waste management (OJ C 76 of 11.3.1997, p. 1), the Council reiterated its conviction that waste prevention should be the first priority of any rational waste policy in relation to minimising waste production and the hazardous properties of waste;

(6b) Whereas the distinction between hazardous and non-hazardous waste is based principally on the properties of waste prior to incineration but not on differences in emissions; whereas there should be a single directive for the incineration of hazardous and non-hazardous waste; whereas the same limit values should apply to the incineration of hazardous and non-hazardous waste but different monitoring measures upon reception of waste should be retained;

(7) Whereas the rules of the Internal Market apply for wastes for recovery and therefore the same strict rules are necessary for all plants incinerating waste in order to avoid transboundary movements to plants operating at lower costs due to less stringent environmental standards;

Unchanged

⁽¹⁾ OJ C 76, 11.3.1997, p. 1.

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- (8) Whereas Council Directive 96/61/EC of 24 September 1996 ⁽¹⁾ sets out an integrated approach to pollution prevention and control in which all the aspects of an installation's environmental performance are considered in an integrated manner; whereas installations for the incineration of municipal waste with a capacity exceeding 3 tonnes per hour and installations for the disposal and recovery of hazardous waste with a capacity exceeding 10 tonnes per day are included within the scope of the Directive 96/61/EC;
- (9) Whereas this Directive sets emission limit values according to Article 18 of Directive 96/61/EC as well as operating conditions and emission limits for all plants incinerating waste in order to ensure a high level of environmental protection;
- (10) Whereas compliance with the emission limit values laid down by this Directive should be regarded as a necessary but not sufficient condition for compliance with the requirements of Directive 96/61/EC regarding the use of best available techniques; whereas such compliance may involve more stringent emissions limit values, emission limit values for other substances and other media, and other appropriate conditions;
- (11) Whereas industrial experience in the implementation of techniques for the reduction of polluting emissions from incineration plants has been acquired over a period of ten years;
- (12) Whereas Article 4 of Council Directive 75/442/EEC of 15 July 1975 on waste ⁽²⁾, as last amended by Commission Decision 96/350/EC ⁽³⁾, requires Member States to take the necessary measures to ensure that waste is recovered or disposed of without endangering human health and without harming the environment; whereas, to this end, Article 9 of that Directive provides that any plant or undertaking treating waste must obtain a permit from the competent authorities relating, inter alia, to the precautions to be taken;
- (13) Whereas the purpose of the incineration plants established and operated in accordance with this Directive is to reduce the pollution-related risks of waste through a process of thermal treatment, especially oxidation, to reduce the quantity and volume of the waste and to produce residues that can be recycled or disposed of safely;
- (14) Whereas Article 129 of the Treaty requires that human health requirements should form a constituent part of other Community policies; whereas, further, Article 130r provides that Community policy on the environment is to contribute to protecting human health;
- (14) Whereas Article 152 of the Treaty requires that human health requirements should form a constituent part of other Community policies; whereas, further, Article 174 provides that Community policy on the environment is to contribute to protecting human health;

⁽¹⁾ OJ L 257, 10.10.1996, p. 26.

⁽²⁾ OJ L 194, 25.7.1975, p. 39.

⁽³⁾ OJ L 135, 6.6.1996, p. 32.

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(15) Whereas, therefore, a high level of environmental protection and human health protection requires the setting and maintaining of appropriate operating conditions and emission limit values for waste incineration plants within the Community; whereas the limit values set should contribute to reducing negative effects on the environment and to minimising adverse effects on human health;

Unchanged

(15a) Whereas the precautionary principle provides the basis for going beyond quality-based measures;

(16) Whereas high-standard measurement techniques are required to monitor emissions to ensure compliance with the emission limit values for the pollutants;

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(17) Whereas integrated protection of the environment against emissions resulting from the thermal treatment of waste is required; whereas, aqueous waste resulting from the cleaning of exhaust gases should therefore be discharged only after separate treatment, in order to limit a transfer of pollution from one environmental medium to another;

(18) Whereas provisions should be laid down for cases where the emission limit values are exceeded as well as for technically unavoidable stoppages, disturbances or failures of the purification devices;

(19) Whereas the co-incineration of waste in plants not primarily intended to incinerate waste should not be allowed to cause higher emissions of polluting substances in that part of the exhaust gas volume resulting from such co-incineration and should therefore be subject to appropriate limitations;

(20) Whereas the Member States should lay down rules on penalties applicable to infringements of the provisions of this Directive and ensure that they are implemented; whereas those penalties must be effective, proportionate and dissuasive,

HAS ADOPTED THIS DIRECTIVE:

HAVE ADOPTED THIS DIRECTIVE:

Article 1
Objectives

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The aim of this Directive is to prevent or, where that is not practicable, to reduce as far as possible negative effects on the environment, in particular the pollution of air, soil, surfacewater and groundwater, and the resulting risks to human health, from the incineration and co-incineration of waste and, to that end, to set up and maintain appropriate operating conditions and emission limit values for waste incineration and co-incineration plants within the Community.

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*Article 2***Scope**

1. This Directive covers incineration and co-incineration plants.

2. The following plants shall however be excluded from the scope of this Directive:

(a) Plants only treating the following wastes:

(i) waste falling within the scope of Council Directive 94/67/EC,

(ii) agriculture and forest residues and wood with the exception of those that may contain halogenic organic compounds or heavy metals as a result of treatment,

(iii) waste excluded from the scope of Directive 75/442/EEC pursuant to Article 2(1) of that Directive,

(iv) waste resulting from the exploration for and the exploitation of oil and gas resources from off-shore installations and incinerated on board;

(b) Plants which treat less than 10 tonnes per year of non-municipal waste only.

(i) agriculture and forest residues and wood with the exception of those that may contain halogenic organic compounds or heavy metals as a result of treatment,

(ii) waste excluded from the scope of Directive 75/442/EEC pursuant to Article 2(1) of that Directive,

(iii) waste resulting from the exploration for and the exploitation of oil and gas resources from off-shore installations and incinerated on board;

Unchanged

*Article 3***Definitions**

For the purposes of this Directive:

1. 'waste' means any solid or liquid waste as defined in Article 1(a) of Directive 75/442/EEC;

1. (a) 'hazardous waste' means any solid or liquid waste as defined in Article 1(4) of Council Directive 91/689/EEC of 12 December 1991 on hazardous waste.

2. 'incineration plant' means any stationary or mobile technical unit and equipment dedicated to the thermal treatment of wastes with or without recovery of the combustion heat generated. This includes the incineration by oxidation of wastes as well as pyrolysis, gasification or other thermal treatment processes, such as plasma process in so far as the products of the treatment are subsequently incinerated;

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This definition covers the site and the entire plant including all incineration lines, waste reception, storage, on site pre-treatment facilities; its waste-, fuel- and air-supply systems; the boiler; facilities for treatment or storage of the residues, exhaust gas and waste water; the stack; devices and systems for controlling incineration operations, recording and monitoring incineration conditions;

3. 'co-incineration plant' means a plant whose main purpose is the generation of energy or production of material products and which uses wastes as a regular or additional fuel

This definition covers the site and the entire plant including all incineration lines, waste reception, storage, on site pre-treatment facilities; its waste-, fuel- and air-supply systems; the boiler; facilities for treatment or storage of the residues, exhaust gas and waste water; the stack; devices and systems for controlling incineration operations, recording and monitoring incineration conditions;

4. 'existing incineration or co-incineration plant' means a plant in operation and complying with relevant existing national and Community legislation or, in accordance with legislation existing before the date specified in Article 21, a plant which is authorised or registered or in the view of the competent authority the subject of a full request for authorisation, provided that the plant is put into operation no later than one year after the date specified in Article 21;

5. 'emission' means the direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources in the plant into the air, water or soil;

6. 'emission limit values' means the mass, expressed in terms of certain specific parameters, concentration and/or level of an emission, which may not be exceeded during one or more periods of time;

7. 'dioxins and furans' means all polychlorinated dibenzodioxins and dibenzofurans listed in Annex I;

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3. 'co-incineration plant' means any stationary or mobile plant whose main purpose is the generation of energy or production of material products and which thermally treats wastes with the exception of treatments dedicated to the recovery of the metal content of the waste and to the cleaning of tools.

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8. 'operator' means any natural or legal person who operates or controls the plant or, where this is provided for in national legislation, to whom decisive economic power over the technical functioning of the plant has been delegated;
9. 'permit' means a written decision (or several such decisions) granting authorisation to operate all or part of a plant;
10. 'residue' means any liquid or solid material (including bottom ash and slag; fly ash and boiler dust; solid reaction products from gas treatment; sewage sludge from the treatment of waste waters; spent catalysts and spent activated carbon) defined as waste in Article 1(a) of Directive 75/442/EEC, which is generated by the incineration or co-incineration process, the exhaust gas or waste water treatment or other processes within the incineration or co-incineration plant.

*Article 4***Application and Permit**

1. No incineration or co-incineration plant shall operate without a permit.
2. Without prejudice to Directive 96/61/EC, the application for a permit by an incineration or co-incineration plant to the competent authority shall include a description of the measures which are envisaged to guarantee that:
 - (a) the plant is designed, equipped and will be operated in such a manner that the requirements of this Directive are met;
 - (b) the heat generated during the incineration process is recovered as far as possible;
 - (c) the residues will be prevented, reduced or recycled as far as possible;
 - (d) the disposal of the residues which cannot be prevented, reduced or recycled will be carried out in conformity with national and Community legislation.
3. The permit shall be granted only if the application shows that the proposed measurement techniques for emissions into the air comply with Annex III.
4. The permit granted by the competent authority to an incineration or co-incineration plant shall:
 - (a) list explicitly the categories of wastes, according to the European Waste Catalogue (EWC) which may be treated;

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- (b) include the total waste incinerating capacity of the plant;
- (c) specify the sampling and measurement procedures used to satisfy the obligations imposed for periodic measurements of each air and water pollutants.

5. The procedure for granting permits for mobile plants shall be determined by Member States.

*Article 5***Delivery and Reception of Waste**

The operator of the incineration or co-incineration plant shall take all necessary precautions concerning the delivery and reception of waste in order to prevent or, where not practicable, to reduce as far as possible negative effects to the environment, in particular the pollution of air, soil, surfacewater and groundwater as well as odours and noise, and direct risks to human health.

The operator shall determine the mass of each category of the waste, according to the EWC-catalogue, prior to accepting the waste at the incineration or co-incineration plant.

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4a. The permit granted by the competent authority to an incineration or co-incineration plant using hazardous waste shall in addition to paragraph 4 above:

- (a) list the quantities of the different categories of hazardous waste which may be treated;
- (b) specify the minimum and maximum mass flows of those hazardous wastes, their lowest and maximum calorific values and their maximum contents of pollutants, e.g. PCB, PCP, chlorine, fluorine, sulphur, heavy metals.

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1. The operator of the incineration or co-incineration plant shall take all necessary precautions concerning the delivery and reception of waste in order to prevent negative effects to the environment, in particular the pollution of air, soil, surfacewater and groundwater as well as odours and noise, and direct risks to human health.

2. The operator shall determine the mass of each category of the waste, according to the EWC-catalogue, prior to accepting the waste at the incineration or co-incineration plant.

3. Prior to accepting hazardous waste at the incineration or co-incineration plant, the operator shall have available a description of the waste covering:

- the physical, and as far as practicable, the chemical composition of the waste and all information necessary to evaluate its suitability for the intended incineration process,
- the hazard characteristics of the waste, the substances with which it cannot be mixed, and the precautions to be taken in handling the waste.

4. Prior to accepting hazardous waste at the incineration or co-incineration plant, at least the following reception procedures shall be carried out by the operator:

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The competent authorities may grant exemptions for industrial plants and undertakings incinerating or co-incinerating only their own waste at the place of production of the waste provided that the same level of protection is met and that the values are not needed for the calculations pursuant to Annex II.

*Article 6***Operating Conditions**

1. Incineration plants shall be operated in order to achieve a level of incineration such that the Total Organic Carbon (TOC) of the slag and bottom ashes is less than 3 % of the dry weight of the material. If necessary appropriate techniques of waste pre-treatment shall be used.

All incineration plants shall be designed, equipped, built and operated in such a way that the gas resulting from the process is raised, after the last injection of combustion air, in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850 °C, as measured near the inner wall of the combustion chamber, for at least two seconds.

All incineration plants shall be equipped with auxiliary burners. These burners must be switched on automatically when the temperature of the combustion gases after the last injection of combustion air falls below 850 °C. They shall also be used during plant start-up and shut-down operations in order to ensure that the temperature of 850 °C is maintained at all times during these operations and as long as unburned waste is in the combustion chamber.

- the checking of those documents required by Directive 91/689/EEC and, where applicable, those required by Council Regulation (EEC) No 259/93 of 1 February 1993 on the supervision and control of shipments of waste within, into and out of the European Community and by dangerous goods transport regulations,
- the taking of representative samples, unless inappropriate, as far as possible before unloading, to verify conformity with the description provided for in paragraph 3 by carrying out controls and to enable the competent authorities to identify the nature of the wastes treated. These samples shall be kept for at least one month after the incineration.

5. The competent authorities may grant exemptions from paragraphs 2, 3 and 4 for industrial plants and undertakings incinerating or co-incinerating only their own waste at the place of production of the waste provided that the same level of protection is met and that the values are not needed for the calculations pursuant to Annex II.

1. Incineration plants shall be operated in order to achieve a level of incineration such that the Total Organic Carbon (TOC) of the slag and bottom ashes is less than 3 % or their loss on ignition is less than 5 % of the dry weight of the material. If necessary appropriate techniques of waste pre-treatment shall be used.

All incineration plants shall be designed, equipped, built and operated in such a way that the gas resulting from the process is raised, after the last injection of combustion air, in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850 °C, as measured near the inner wall of the combustion chamber, for at least two seconds. If hazardous wastes with a content of more than 1 % of halogenated organic substances, expressed as chlorine, are incinerated, the temperature has to be raised to at least 1 100 °C.

All incineration plants shall be equipped with auxiliary burners. These burners must be switched on automatically when the temperature of the combustion gases after the last injection of combustion air falls below 850 °C or 1 100 °C respectively. They shall also be used during plant start-up and shut-down operations in order to ensure that the temperature of 850 °C or 1 100 °C respectively is maintained at all times during these operations and as long as unburned waste is in the combustion chamber.

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During start-up and shut-down or when the temperature of the combustion gas falls below 850 °C, the auxiliary burners shall not be fed with fuels which can cause higher emissions than those resulting from the burning of gasoil, as defined in Article 1(1) of Council Directive 75/716/EEC, liquefied gas or natural gas.

During start-up and shut-down or when the temperature of the combustion gas falls below 850 °C or 1 100 °C respectively, the auxiliary burners shall not be fed with fuels which can cause higher emissions than those resulting from the burning of gasoil, as defined in Article 1(1) of Council Directive 75/716/EEC, liquefied gas or natural gas.

2. All co-incineration plants shall be designed, equipped, built and operated in such a way that the gas resulting from the co-incineration of waste is raised in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850 °C for at least two seconds.

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3. Incineration and co-incineration plants shall have and operate an automatic system to prevent waste feed:

- (a) at start-up, until the temperature of 850 °C has been reached;
- (b) whenever the temperature of 850 °C is not maintained;
- (c) whenever the continuous measurements required by this Directive show that any emission limit value is exceeded due to disturbances or failures of the purification devices.

4. Conditions different from those laid down in paragraph 1 and specified in the permit for certain categories of waste or for certain thermal processes may be authorised by the competent authority. The change of the operational conditions shall not cause more residues or residues with a higher content of organic pollutants compared to those, which could be expected under the conditions laid down in paragraph 1.

Conditions different from those laid down in paragraph 2 and specified in the permit for certain categories of waste or for certain thermal processes may be authorised by the competent authority. Such authorisation shall be conditional upon at least the provisions for emission limit values set out in Annex V for total organic carbon and CO being complied with.

All operating conditions determined under this paragraph and the results of verifications made shall be communicated to the Commission as part of the information provided in accordance with the reporting requirements.

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5. All incineration and co-incineration plants shall be designed, equipped, built and operated in such a way as to prevent emissions into the air giving rise to significant ground-level air pollution; in particular, exhaust gases shall be discharged in a controlled fashion and in conformity with Community and other relevant air quality standards by means of a stack the height of which is calculated in such a way as to safeguard human health and the environment.

Any heat generated by the incineration or co-incineration process shall be recovered as far as possible.

*Article 7***Air Emission Limit Values**

1. Incineration plants shall be designed, equipped, built and operated in such a way that the emission limit values set out in Annex V are not exceeded in the exhaust gas:

2. The results of the measurements made to verify compliance with the emission limit values shall be standardised with respect to the conditions laid down in Article 11.

3. Where wastes are co-incinerated, the emission limit values as determined pursuant to Annex II shall apply.

4. In the case of co-incineration of untreated, mixed municipal waste, paragraph 3 shall not apply.

5. If waste falling within the scope of Directive 94/67/EC is co-incinerated or incinerated in the same plant as waste falling within the scope of this Directive, the emission limit values set out in Annexes II, IV and V to this Directive, respectively, shall apply with respect to the total amount of waste. As regards other requirements, the stricter of the provisions of Directive 94/67/EC or this Directive shall apply.

6. Notwithstanding paragraphs 3 and 5, if more than 40 % of the resulting heat release in a plant referred to in paragraph 5 comes from waste falling within the scope of Directive 94/67/EC, the emission limit values set out in Annex V to this Directive shall apply.

2. Co-incineration plants shall be designed, equipped, built and operated in such a way that the emission limit values determined according to or set out in Annex II are not exceeded in the exhaust gas.

3. The results of the measurements made to verify compliance with the emission limit values shall be standardised with respect to the conditions laid down in Article 11.

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*Article 8***Water Discharges**

1. Any waste water discharged from an incineration or co-incineration plant shall be subject to a permit.

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2. Discharges to the aquatic environment of waste water resulting from the cleaning of exhaust gases shall be limited as far as possible.

3. Subject to a specific provision in the permit, the waste water from the cleaning of exhaust gases may be discharged after separate treatment on condition that:

- (a) the requirements of relevant Community, national and local provisions are complied with in the form of emission limit values; and
- (b) the mass concentrations of the polluting substances referred to in Annex IV do not exceed the emission limit values laid down therein.

4. The emission limit values shall apply at the point where the polluting substances referred to in Annex IV are discharged from the incineration or co-incineration plant.

Where the waste water from the cleaning of exhaust gases is treated collectively with other on-site sources of similar waste water, the operator shall take the measurements referred to in Article 11:

- (a) on the waste water stream from the exhaust gas cleaning processes prior to its input into the collective waste water treatment plant;
- (b) on the other waste water stream or streams prior to its or their input into the collective waste water treatment plant;
- (c) at the point of final waste water discharge, after the treatment, from the incineration plant.

The operator shall take appropriate mass balance calculations in order to determine the emission levels in the final waste water discharge that can be attributed to the waste water arising from the cleaning of exhaust gases in order to check compliance with the emission limit values set out in Annex IV.

5. The competent authorities shall ensure that in no instance does dilution of waste waters occur by mixing different waste water streams or otherwise, except where such mixing is part of a process duly licensed under the waste management licensing regulations.

6. The permit shall:

- (a) establish emission limit values for organic or inorganic polluting substances in accordance with paragraph 2 and in order to meet the requirements referred to in paragraph 3(a);
- (b) set operational control parameters at least for temperature and flow.

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7. Incineration and co-incineration plant sites, including associated storage areas for wastes, shall be designed and operated in such a way as to prevent the release of any polluting substances into soil and groundwater in accordance with the provisions of Council Directive 80/68/EEC ⁽¹⁾. Moreover, storage capacity shall be provided for rainwater run-off from the incineration plant site or for contaminated water arising from spillage or fire-fighting operations.

The storage capacity shall be adequate to ensure that such waters can be tested and treated before discharge where necessary.

*Article 9***Residues**

Residues resulting from the operation of the incineration or co-incineration plant shall be prevented or at least minimised in their amount and harmfulness. Residues shall be recycled as far as possible directly in the plant or outside in accordance with relevant Community legislation and national provisions.

Transport and intermediate storage of dry residues in the form of dust, such as boiler dust and dry residues from the treatment of combustion gases, shall take place in the form of e.g. closed containers.

Prior to determining the routes for the disposal or recycling of the residues from incineration and co-incineration plants, appropriate tests shall be carried out to establish the physical and chemical characteristics and the polluting potential of the different incineration residues. The analysis shall concern in particular the total soluble fraction and heavy metals soluble fraction.

Transport and intermediate storage of dry residues in the form of dust, such as boiler dust and dry residues from the treatment of combustion gases, shall take place such a way as to prevent dispersal in the environment, for example in closed containers.

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*Article 10***Control and Monitoring**

Measurement equipment shall be installed and techniques used in order to monitor the parameters, conditions, mass concentrations and flows of the pollutants relevant to the incineration or co-incineration process.

The measurement requirements shall be laid down in the permit or in the conditions attached to the permit issued by the competent authorities.

⁽¹⁾ OJ L 20, 26.1.1980, p. 43.

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The appropriate installation and the functioning of the automated monitoring equipment for emissions into air and water shall be subject to control and to an annual surveillance test by means of parallel measurements with the reference methods once a year.

The location of the sampling or measurement points shall be agreed with the competent authority.

Periodic measurements of the emissions into the air and water shall be carried out in accordance with Annex III, point 1.

*Article 11***Measurement Requirements**

1. Member States shall, either by specification in the conditions of the permit or by general binding rules, ensure that paragraphs 2 to 12, as regards air, and paragraphs 14 to 17, as regards water, are complied with.

2. The following measurements of air pollutants shall be carried out in accordance with Annex III at the incineration and co-incineration plant:

(a) continuous measurements of the following substances: CO, total dust, TOC, HCl, HF, SO₂, NO_x;

(b) continuous measurements of the following process operation parameters: temperature near the inner wall of the combustion chamber, concentration of oxygen, pressure, temperature and water vapour content of the exhaust gas;

(c) at least two measurements per year of heavy metals, dioxins and furans; one measurement every three months shall however be carried out for the first 12 months of operation.

3. The residence time as well as the minimum temperature and the oxygen content of the exhaust gases shall be subject to appropriate verification, at least once when the incineration or co-incineration plant is brought into service and under the most unfavourable operating conditions anticipated.

4. The continuous measurement of HF may be omitted if treatment stages for HCl are used which ensure that the emission limit value for HCl is not being exceeded. In this case the emissions of HF shall be subject to periodic measurements as laid down in paragraph 2(c).

(c) at least two measurements per year of heavy metals, dioxins and furans; one measurement every three months shall however be carried out for the first 12 months of operation. If more than one type of routine operation is allowed in the permit, then the most unfavourable routine operating conditions must be adequately represented during the periodic measurements. Within the permitted range, raw materials and fuels must be selected in such a way that measurements are performed under worst case conditions.

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5. The continuous measurement of the water vapour content shall not be required if the sampled exhaust gas is dried before the emissions are analysed.

6. Periodic measurements as laid down in paragraph 2(c) of HCl, HF and SO₂ instead of continuous measuring may be authorised by the competent authority in incineration or co-incineration plants, if the operator can prove that the emissions of those pollutants can under no circumstances be higher than the prescribed emission limit values.

7. The results of the measurements made to verify compliance with the emission limit values shall be standardised at the following conditions:

- (a) Temperature 273 K, pressure 101,3 kPa, 11 % oxygen, dry gas;
- (b) Temperature 273 K, pressure 101,3 kPa, 3 %, oxygen, dry gas, in case of incineration of waste oil only as defined in Council Directive 75/439/EEC ⁽¹⁾;
- (c) when the wastes are incinerated or co-incinerated in an oxygen-enriched atmosphere, the results of the measurements can be standardised at an oxygen content laid down by the competent authority reflecting the special circumstances of the individual case;
- (d) in the case of co-incineration, the results of the measurements shall be standardised at a total oxygen content as calculated in Annex II.

When the emissions of pollutants are reduced by exhaust gas treatment in an incineration or co-incineration plant treating hazardous waste, the standardisation with respect to the oxygen contents provided for in the first subparagraph shall be done only if the oxygen content measured over the same period as for the pollutant concerned exceeds the relevant standard oxygen content.

8. All measurement results shall be recorded, processed and presented in an appropriate fashion in order to enable the competent authorities to verify compliance with the permitted operating conditions and emission limit values laid down in this Directive in accordance with procedures to be decided upon by those authorities.

Unchanged

9. The emission limit values for air shall be regarded as being complied with if:

- (a) none of the daily average values exceeds any of the emission limit values set out in Annex V(e) first indent, and Annex V(a);

- (a) none of the daily average values exceeds any of the emission limit values set out in Annex V(e) first indent, and Annex V(a) or set out or determined according to Annex II;

⁽¹⁾ OJ 194, 25.7.1975, p. 23.

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(b) none of the half-hourly average values exceeds any of the emission limit values set out in Annex V(b);

(b) none of the half-hourly average values exceeds any of the emission limit values set out in Annex V(b) or determined according to Annex II;

(c) none of the average values over the sample period set out for heavy metals and dioxins and furans exceeds the emission limit values set out in Annex V(c) and (d);

(c) none of the average values over the sample period set out for heavy metals and dioxins and furans exceeds the emission limit values set out in Annex V(c) and (d) or set out or determined according to Annex II;

(d) the provisions of Annex V(e), second indent are met.

(d) the provisions of Annex V(e), second indent or the 10-minute average values or half-hourly values for CO determined according to Annex II, are met.

10. The half-hourly average values and the 10-minute averages shall be determined within the effective operating time (excluding the start-up and shut-off periods if no waste is being incinerated) from the measured values after having subtracted the value of the confidence interval specified in point 2 of Annex III. The daily average values shall be determined from those validated average values.

Unchanged

To obtain a valid daily average value no more than five half-hourly average values in any day shall be discarded due to malfunction or maintenance of the continuous measurement system. No more than ten daily average values per year shall be discarded due to malfunction or maintenance of the continuous measurement system.

11. The average values over the sample period and, in the case of periodical measurements of HF, the average values for HF shall be determined in accordance with the requirements of Article 10.

12. Should the measurements taken show that the emission limit values laid down in this Directive have been exceeded, the competent authorities shall be informed without delay.

13. The Commission, acting in accordance with the procedure laid down in Article 17, shall decide, as soon as appropriate measurement techniques are available within the Community, the date from which continuous measurements of the air emission limit values for dioxins and heavy metals shall be carried out in accordance with Annex III.

14. The following measurements shall be carried out at the point of waste water discharge

(a) continuous measurements of the parameters referred to in Article 8(6)(b);

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- (b) instantaneous daily measurements of total suspended solids;
- (c) monthly measurements of a representative 24-hour sampling of the polluting substances referred to in Article 8(3) with items 2 to 13 in Annex IV;
- (d) at least two measurements per year of dioxins and furans; however one measurement every three months shall be carried out for the first 12 months of operation.

15. The measurements for the determination of concentrations of water polluting substances in the discharge shall be carried out representatively.

16. The monitoring of the mass of pollutants in the treated waste water shall be done in conformity with Community and national law and laid down in the permit as well as the frequency of the measurements. The measurements shall be carried out according to CEN standards and, if not available, to national standards.

17. The emission limit values for water shall be regarded as being complied with if:

- (a) no representative 24-hour sampling exceeds the emission limit value set out in Annex IV for total suspended solids, polluting substance number 1; for heavy metals, polluting substances numbers 5 to 13, cadmium and thallium, substance number 3 and 4 and for mercury, substance number 2;
- (b) the twice-yearly measurements of dioxins and furans do not exceed the emission limit value set out in Annex IV, polluting substance number 14.

*Article 12***Access to Information and Public Participation in the Permit Procedure**

Without prejudice to Council Directive 90/313/EEC⁽¹⁾ and Directive 96/61/EC, applications for new permits shall be made available to the public for an appropriate period to enable it to comment on them before the competent authority reaches a decision. That decision, including at least a copy of the permit, and any subsequent updates, shall also be made available to the public.

⁽¹⁾ OJ L 158, 23.6.1990, s. 56.

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*Article 13***Abnormal Operating Conditions**

The competent authority shall lay down in the permit the maximum permissible period of any technically unavoidable stoppages, disturbances, or failures of the purification devices or the measurement devices, during which the concentrations in the discharges into the air and the purified waste water of the regulated substances may exceed the prescribed emission limit values.

In case of a breakdown, the operator shall reduce or close down operations as soon as practicable until normal operations can be restored.

The incineration plant or co-incineration plant or incineration line shall under no circumstances continue to incinerate waste for a period of more than four hours uninterrupted where emission limit values are exceeded; moreover, the cumulative duration of operation in such conditions over one year shall be less than 60 hours.

The total dust content of the emissions into the air of an incineration plant shall under no circumstances exceed 150 mg/m³ expressed as a half-hourly average; moreover the air emission limit values for CO and TOC shall not be exceeded. All other conditions referred to in Article 6 shall be complied with.

*Article 14***Permit Review**

Without prejudice to Directive 96/61/EC, the competent authority shall periodically reconsider and, where necessary, update permit conditions.

*Article 15***Reporting**

The reports on the implementation of this Directive shall be established in accordance with the procedure laid down in Article 5 of Council Directive 91/692/EEC⁽¹⁾. The first report shall cover the first full three-year period after the date specified in Article 21.

⁽¹⁾ OJ L 377, 31.12.1991, p. 48.

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*Article 16***Future Adaptation of the Directive**

The Commission, in accordance with the procedure laid down in Article 17, shall amend Articles 10, 11 and 12 and Annexes I to V in order to adapt them to technical progress or new findings concerning the health benefits of emission reductions.

*Article 17***Committee**

1. For the purposes of the application of this Directive, the Commission shall be assisted by the Committee established under Article 16 of Directive 94/67/EC.

2. The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft within a time limit which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148(2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the committee shall be weighted in the manner set out in that Article. The Chairman shall not vote.

The Commission shall adopt the measures envisaged if they are in accordance with the opinion of the Committee.

If the measures envisaged are not in accordance with the opinion of the committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by a qualified majority.

If, on the expiry of a period of three months from the date of referral to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

*Article 18***Repeal**

Directives 89/369/EEC and 89/429/EEC and shall be repealed five years after the entry into force of this Directive.

The Commission, in accordance with the procedure laid down in Article 17, shall amend Articles 10, 11 and 13 and Annexes I to V in order to adapt them to technical progress or new findings concerning the health benefits of emission reductions.

1. For the purposes of the application of this Directive, the Commission shall be assisted by a Committee composed of the representatives of the Member States and chaired by the representative of the Commission.

2. The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft within a time limit which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 205(2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the committee shall be weighted in the manner set out in that Article. The Chairman shall not vote.

Unchanged

Directives 89/369/EEC, 89/429/EEC and 94/67/EC shall be repealed five years after the entry into force of this Directive.

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Article 19

Unchanged

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 21 at the latest and shall notify it without delay of any subsequent amendment affecting them.

*Article 20***Transitional Provisions**

The provisions of this Directive shall apply to existing plants five years after the date of entry into force of this Directive.

1. Without prejudice to the specific transitional provisions provided for under the Annexes of this Directive, the provisions of this Directive shall apply to existing plants five years after the date of entry into force of this Directive.

2. For new plants, i.e. plants not falling under the definition of Article 3(4) of this Directive, which incinerate or co-incinerate hazardous waste, this Directive, instead of Directive 94/67/EC, shall apply from the date mentioned in Article 21(1).

Article 21

Unchanged

Bringing into Effect

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive no later than two years after its entry into force. They shall forthwith inform the Commission thereof.

When Member States adopt those measures, 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 texts of the provisions of national law which they adopt in the field covered by this Directive.

*Article 22***Entry into Force**

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Communities*.

*Article 23***Addressees**

This Directive is addressed to the Member States.

ANNEX I

EQUIVALENCE FACTORS FOR DIBENZO-p-DIOXINS AND DIBENZOFURANS

For the determination of the total concentration (TE) of dioxins and furans the mass concentrations of the following dioxins and dibenzofurans shall be multiplied by the following equivalence factors before summing:

		Toxic equivalence factor
2,3,7,8	— Tetrachlorodibenzodioxin (TCDD)	1
1,2,3,7,8	— Pentachlorodibenzodioxin (PeCDD)	0,5
1,2,3,4,7,8	— Hexachlorodibenzodioxin (HxCDD)	0,1
1,2,3,6,7,8	— Hexachlorodibenzodioxin (HxCDD)	0,1
1,2,3,7,8,9	— Hexachlorodibenzodioxin (HxCDD)	0,1
1,2,3,4,6,7,8	— Heptachlorodibenzodioxin (HpCDD)	0,01
	— Octachlorodibenzodioxin (OCDD)	0,001
2,3,7,8	— Tetrachlorodibenzofuran (TCDF)	0,1
2,3,4,7,8	— Pentachlorodibenzofuran (PeCDF)	0,5
1,2,3,7,8	— Pentachlorodibenzofuran (PeCDF)	0,05
1,2,3,4,7,8	— Hexachlorodibenzofuran (HxCDF)	0,1
1,2,3,6,7,8	— Hexachlorodibenzofuran (HxCDF)	0,1
1,2,3,7,8,9	— Hexachlorodibenzofuran (HxCDF)	0,1
2,3,4,6,7,8	— Hexachlorodibenzofuran (HxCDF)	0,1
1,2,3,4,6,7,8	— Heptachlorodibenzofuran (HpCDF)	0,01
1,2,3,4,7,8,9	— Heptachlorodibenzofuran (HpCDF)	0,01
	— Octachlorodibenzofuran (OCDF)	0,001

ANNEX II

DETERMINATION OF EMISSION LIMIT VALUES FOR THE CO-INCINERATION OF WASTE

The limit value for each relevant pollutant and carbon monoxide in the exhaust gas resulting from the co-incineration of waste shall be calculated as follows:

$$\frac{V_{\text{waste}} \times C_{\text{waste}} + V_{\text{proc}} \times C_{\text{proc}}}{V_{\text{waste}} + V_{\text{proc}}} = C$$

V_{waste} : exhaust gas volume resulting from the incineration of waste only determined from the waste with the lowest calorific value specified in the permit and standardised at the conditions given by this Directive.

Initial proposal

C_{waste} : emission limit values set for plants intended to incinerate wastes only (at least the emission limit values for the pollutants and carbon monoxide).

Amended proposal

C_{waste} : emission limit values set in Annex V for plants intended to incinerate wastes only (at least the emission limit values for the pollutants and carbon monoxide).

V_{proc} : exhaust gas volume resulting from the plant process including the combustion of the authorised fuels normally used in the plant (wastes excluded) determined on the basis of oxygen contents at which the emissions must be standardised as laid down in Community or national regulations. In the absence of regulations for this kind of plants, the real oxygen content in the exhaust gas without being thinned by addition of air unnecessary for the process must be used. The standardisation at the other conditions is given in this Directive.

C_{proc} : emission limit values as laid down in the tables of this annex for certain industrial sectors or in case of the absence of such a table or such values, emission limit values of the relevant pollutants and carbon monoxide in the flue gas of plants which comply with the national laws, regulations and administrative provisions for such plants while burning the normally authorised fuels (wastes excluded). In the absence of these measures the emission limit values laid down in the permit are used. In the absence of such permit values the real mass concentrations are used.

C : total emission limit values as laid down in the tables of this annex for certain industrial sectors and certain pollutants or in case of the absence of such a table or such values total emission limit values for CO and the relevant pollutants replacing the emission limit values as laid down in specific Articles of this Directive. The total oxygen content to replace the oxygen content for the standardisation is calculated on the basis of the content above respecting the partial volumes.

II.1. Special provisions for cement kilns

Daily average values (for continuous measurements) Sample periods and other measurement requirements as in Article 7. All values in mg/m^3 (Dioxins ng/m^3).

The results of the measurements made to verify compliance with the emission limit values shall be standardised at the following conditions: 273 K, pressure 101,3 kPa, 10 % oxygen, dry gas,

Original table

II.1.1. C — total emission limit values

Pollutant	C
Total Dust	30
HCl	10
HF	1
NO _x	800
Cd + Tl	0,05
Hg	0,05
Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V	0,5
Dioxins and furans	0,1

Amended table

II.1.1. C — total emission limit values

Pollutant	C
Total Dust	30
HCl	10
HF	1
NO _x	800
Cd + Tl	0,05
Hg	0,05
Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V	0,5
Dioxins and furans	0,1

Until 1 January 2007, the emission limit value for NO_x does not apply to plants co-incinerating hazardous waste only.

II.1.2. C — total emission limit values for SO₂ and TOC:

Pollutant	C
SO ₂	50
TOC	10

Exemptions may be authorised by the competent authority in cases where TOC and SO₂ do not result from the incineration of waste.

II.1.3. *Emission limit value for CO:*

Emission limit values for CO can be set by the competent authority.

Initial proposal

II.2. **Special provisions for large combustion plants**

Amended proposal

II.2. **Special provisions for combustion plants**

Original table

II.2.1. C_{proc} :

C_{proc} for solid fuels expressed in mg/Nm³ (O₂ content 6 %):

Pollutants	50 to 100 MWth	100 to 300 MWth	> 300 MWth
SO ₂ general case	850	850 to 200 (linear decrease from 100 to 300 MWth)	200
indigenous fuels	or rate of desulphurisation ≥ 90 %	or rate of desulphurisation ≥ 92 %	or rate of desulphurisation ≥ 95 %
NO _x	400	300	200
Dust	50	30	30

Amended table

II.2.1. C_{proc} :

C_{proc} for solid fuels expressed in mg/Nm³ (O₂ content 6 %):

Pollutants	0 to 100 MWth	100 to 300 MWth	> 300 MWth
SO ₂ general case	850	850 to 200 (linear decrease from 100 to 300 MWth)	200
indigenous fuels	or rate of desulphurisation ≥ 90 %	or rate of desulphurisation ≥ 92 %	or rate of desulphurisation ≥ 95 %
NO _x	400	300	200
Dust	50	30	30

Until 1 January 2007 and without prejudice to other Community legislation, the emission limit value for NO_x does not apply to plants co-incinerating hazardous waste only.

Original table

C_{proc} for biomass (as defined in Council Directive 88/609/EEC as amended) expressed in mg/Nm^3 (O_2 content 6 %):

Pollutants	50 to 100 MWth	100 to 300 MWth	> 300 MWth
SO_2	200	200	200
NO_x	350	300	300
Dust	50	30	30

Amended table

C_{proc} for biomass (as defined in Council Directive 88/609/EEC as amended) expressed in mg/Nm^3 (O_2 content 6 %):

Pollutants	0 to 100 MWth	100 to 300 MWth	> 300 MWth
SO_2	200	200	200
NO_x	350	300	300
Dust	50	30	30

Until 1 January 2007 and without prejudice to other Community legislation, the emission limit value for NO_x does not apply to plants co-incinerating hazardous waste only.

Original table

C_{proc} for liquid fuels expressed in mg/Nm^3 (O_2 content 3 %):

Pollutants	50 to 100 MWth	100 to 300 MWth	> 300 MWth
SO_2	850	850 to 200 (linear decrease from 100 to 300 MWth)	200
NO_x	400	300	200
Dust	50	30	30

Amended table

C_{proc} for liquid fuels expressed in mg/Nm^3 (O_2 content 3 %):

Pollutants	0 to 100 MWth	100 to 300 MWth	> 300 MWth
SO_2	850	850 to 200 (linear decrease from 100 to 300 MWth)	200
NO_x	400	300	200
Dust	50	30	30

Until 1 January 2007 and without prejudice to other Community legislation, the emission limit value for NO_x does not apply to plants co-incinerating hazardous waste only.

II.2.2. C — total emission limit values:

C expressed in mg/Nm³ (O₂ content 6 %). All average values over the sample period of a minimum of 30 minutes and a maximum of 8 hours:

Pollutant	C
Cd + Tl	0,05
Hg	0,05
Sb + As + Pb + Cr + Co + Cu + Mn + Ni + V	0,5

C expressed in ng/Nm³ (O₂ content 6 %). All average values measured over the sample period of a minimum of 6 hours and a maximum of 8 hours:

Pollutant	C
Dioxins and furans	0,1

Amended proposal

C for solid fuels expressed in mg/Nm³ (O₂ content 6 %),

C for biomass (as defined in Council Directive 88/609/EEC as amended) expressed in mg/Nm³ (O₂ content 6 %),

C for liquid fuels expressed in mg/Nm³ (O₂ content 3 %):

Pollutant	C
HCl	10
HF	1

II.3. Special provisions for other industrial sectors

II.3.1. C — total emission limit values:

C expressed in ng/Nm³. All average values measured over the sample period of a minimum of 6 hours and a maximum of 8 hours:

Pollutant	C
Dioxins and furans	0,1

C expressed in mg/Nm³. All average values over the sample period of a minimum of 30 minutes and a maximum of 8 hours:

Pollutant	C
Cd + Tl	0,05
Hg	0,05

ANNEX III

Measurement Techniques

1. Sampling and analysis of all pollutants including dioxins and furans as well as reference measurement methods to calibrate automated measurement systems shall be carried out as given by CEN-standards elaborated on the basis of mandates by the Commission. While awaiting the elaboration of the CEN-standards, national standards shall apply.
2. At the daily emission limit value level, the values of the 95 % confidence intervals of a single measured result shall not exceed the following percentages of the emission limit values:

Carbon monoxide:	10 %
Sulphur dioxide:	20 %
Nitrogen dioxide:	20 %
Total dust:	40 %
Total organic carbon:	30 %
Hydrogen chloride:	40 %

ANNEX IV

Emission Limit Values for discharges of waste water from the cleaning of exhaust gases

Polluting substances	Emission limit values expressed in mass concentrations
1 — Total suspended solids as defined by Directive 91/271/EEC ⁽¹⁾	20 mg/l
2 — Mercury and its compounds, expressed as mercury (Hg)	0,02 mg/l
3 — Cadmium and its compounds, expressed as cadmium (Cd)	0,05 mg/l
4 — Thallium and its compounds, expressed as thallium (Tl)	
5 — Antimony and its compounds, expressed as antimony (Sb)	
6 — Arsenic and its compounds, expressed as arsenic (As)	
7 — Lead and its compounds, expressed as lead (Pb)	5 mg/l
8 — Chromium and its compounds, expressed as chromium (Cr)	
9 — Cobalt and its compounds, expressed as cobalt (Co)	
10 — Copper and its compounds, expressed as copper (Cu)	
11 — Manganese and its compounds, expressed as manganese (Mn)	
12 — Nickel and its compounds, expressed as nickel (Ni)	
13 — Vanadium and its compounds, expressed as vanadium (V)	
14 — Dioxins and furans, defined as the sum of the individual dioxins and furans evaluated in accordance with Annex I	0,5 ng/l

⁽¹⁾ OJ L 135, 30.5.1991, p. 40.

ANNEX V

Air Emission limit Values

Original table

(a) Daily Average Values:

Total dust	10 mg/m ³
Gaseous and vaporous organic substances, expressed as total organic carbon	10 mg/m ³
Hydrogen chloride (HCl)	10 mg/m ³
Hydrogen fluoride (HF)	1 mg/m ³
Sulphur dioxide (SO ₂)	50 mg/m ³
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for existing incineration plants with a capacity exceeding 3 tonnes per hour or new incineration plants	200 mg/m ³
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for existing incineration plants with a capacity of 3 tonnes per hour or less	400 mg/m ³

Amended table

(a) Daily Average Values

Total dust	10 mg/m ³
Gaseous and vaporous organic substances, expressed as total organic carbon	10 mg/m ³
Hydrogen chloride (HCl)	10 mg/m ³
Hydrogen fluoride (HF)	1 mg/m ³
Sulphur dioxide (SO ₂)	50 mg/m ³
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for existing incineration plants with a capacity exceeding 3 tonnes per hour or new incineration plants	200 mg/m ³
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for existing incineration plants with a capacity of 3 tonnes per hour or less	400 mg/m ³

Until 1 January 2007, the emission limit value for NO_x does not apply to plants incinerating hazardous waste only.

Original table

(b) Half-hourly Average Values

Total dust	30 mg/m ³
Gaseous and vaporous organic substances, expressed as total organic carbon	20 mg/m ³
Hydrogen chloride (HCl)	60 mg/m ³
Hydrogen fluoride (HF)	4 mg/m ³
Sulphur dioxide (SO ₂)	200 mg/m ³
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for existing incineration plants with a capacity exceeding 3 tonnes per hour or new incineration plants	400 mg/m ³

Amended table

(b) Half-hourly Average Values

Total dust	30 mg/m ³
Gaseous and vaporous organic substances, expressed as total organic carbon	20 mg/m ³
Hydrogen chloride (HCl)	60 mg/m ³
Hydrogen fluoride (HF)	4 mg/m ³
Sulphur dioxide (SO ₂)	200 mg/m ³
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for existing incineration plants with a capacity exceeding 3 tonnes per hour or new incineration plants	400 mg/m ³

Until 1 January 2007, the emission limit value for NO_x does not apply to plants incinerating hazardous waste only.

Original table

(c) All average values over the sample period of a minimum of 30 minutes and a maximum of 8 hours

Cadmium and its compounds, expressed as cadmium (Cd)	total 0,05 mg/m ³
Thallium and its compounds, expressed as thallium (Tl)	
Mercury and its compounds, expressed as mercury (Hg)	0,05 mg/m ³
Antimony and its compounds, expressed as antimony (Sb)	total 0,5 mg/m ³
Arsenic and its compounds, expressed as arsenic (As)	
Lead and its compounds, expressed as lead (Pb)	
Chromium and its compounds, expressed as chromium (Cr)	
Cobalt and its compounds, expressed as cobalt (Co)	
Copper and its compounds, expressed as copper (Cu)	
Manganese and its compounds, expressed as manganese (Mn)	
Nickel and its compounds, expressed as nickel (Ni)	
Vanadium and its compounds, expressed as vanadium (V)	

These average values cover also gaseous and the vapour forms of the relevant heavy metal emissions as well as their compounds.

Amended table

(c) All average values over the sample period of a minimum of 30 minutes and a maximum of 8 hours

Cadmium and its compounds, expressed as cadmium (Cd)	total 0,1 mg/m ³ (*)
Thallium and its compounds, expressed as thallium (Tl)	
Mercury and its compounds, expressed as mercury (Hg)	0,1 mg/m ³ (*)
Antimony and its compounds, expressed as antimony (Sb)	total 1 mg/m ³ (*)
Arsenic and its compounds, expressed as arsenic (As)	
Lead and its compounds, expressed as lead (Pb)	
Chromium and its compounds, expressed as chromium (Cr)	
Cobalt and its compounds, expressed as cobalt (Co)	
Copper and its compounds, expressed as copper (Cu)	
Manganese and its compounds, expressed as manganese (Mn)	
Nickel and its compounds, expressed as nickel (Ni)	
Vanadium and its compounds, expressed as vanadium (V)	

(*) Until 1 January 2007 these average values shall apply to existing plants for which the permit to operate has been granted before 31 December 1996, and which incinerate hazardous waste only.

These average values cover also gaseous and the vapour forms of the relevant heavy metal emissions as well as their compounds.

- (d) Average values shall be measured over a sample period of a minimum of 6 hours and a maximum of 8 hours. The emission limit value refers to the total concentration of dioxins and furans calculated using the concept of toxic equivalence in accordance with Annex I.

Dioxins and furans	0,1 ng/m ³
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- (e) The following emission limit values of carbon monoxide (CO) concentrations shall not be exceeded in the combustion gases (excluding the start-up and shut-down phase):

- 50 milligrams/m³ of combustion gas determined as daily average value;
- 150 milligrams/m³ of combustion gas of at least 95 % of all measurements determined as 10-minute average values or 100 mg/m³ of combustion gas of all measurements determined as half-hourly average values taken in any 24-hour period.

Exemptions may be authorised by the competent authority for incineration plants using fluidised bed technology, provided that the authorisation foresees an emission limit value for carbon monoxide (CO) of not more than 100 mg/m³ as a hourly average value.
