

COUNCIL DIRECTIVE

of 8 June 1989

on the prevention of air pollution from new municipal waste incineration plants

(89/369/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

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

Having regard to the proposal from the Commission (1),

Having regard to the opinion of the European Parliament (2),

Having regard to the opinion of the Economic and Social Committee (3),

Whereas the 1973 (4), 1977 (5), 1983 (6) and 1987 (7) European Community action programmes on the environment stress the importance of the prevention and reduction of air pollution;

Whereas the Council resolution of 19 October 1987 (8) on the action programme on the environment for 1987 to 1992 states that it is important for Community action to concentrate, inter alia, on implementation of appropriate standards in order to ensure a high level of public health and environmental protection;

Whereas Council Directive 75/442/EEC of 15 July 1975 on waste (9) provides that waste must be disposed of without endangering human health and without harming the environment; whereas, to this end, the same Directive stipulates that any installation or undertaking treating waste must obtain a permit from the competent authority relating, inter alia, to the precautions to be taken;

Whereas Council Directive 84/360/EEC of 28 June 1984 on the combating of air pollution from industrial plants (10) provides that prior authorization shall be required to operate new industrial installations and in particular waste incineration plants; whereas this authorization may be issued only when all appropriate preventive measures against air pollution have been taken, including the application of the best available technology not entailing excessive costs;

Whereas the abovementioned Directive 84/360/EEC stipulates that the Council, acting unanimously on a proposal from the Commission, shall, if necessary, fix emission limit values based on the best available technology not entailing excessive costs and suitable measurement techniques and methods;

Whereas incineration of municipal waste gives rise to emissions of substances which can cause air pollution and thereby harm public health and the environment; whereas in some cases this pollution may have transboundary features;

Whereas the techniques for reducing emissions of certain pollutants from municipal waste incineration plants are well established; whereas they can be applied reasonably economically in new incineration plants; whereas they provide a means of attaining concentrations of pollutants in the combustion gases not exceeding certain limit values;

Whereas Community limit values for dioxins and furans should be fixed as soon as possible;

Whereas all the Member States have laws, regulations and administrative provisions concerning the combating of air pollution from stationary plants; whereas several Member States have specific provisions on municipal waste-incineration plants;

Whereas the Community, by fixing emission limit values and other pollution-prevention requirements, helps increase the effectiveness of the action taken by the Member States to combat air pollution from municipal waste-incineration plants;

Whereas, in order to ensure an effective protection of the environment, requirements and conditions should be laid down for authorization for any new municipal waste-incineration plant; whereas these requirements must include an obligation to observe emission limit values for certain pollutants and appropriate combustion conditions, taking account of the technical character of the plant and of the operating conditions;

Whereas provision must be made for appropriate measurements and verifications at the incineration plants; whereas the public must be informed of the conditions imposed and of the results obtained;

Whereas, as well as the establishment of emission limit values, it is important to encourage the development and dissemination of knowledge and use of clean technology as part of the preventive efforts to combat environmental pollution in the Community, especially regarding waste disposal;

Whereas, in accordance with Article 130t of the Treaty, the adoption of such Community provisions does not prevent any Member State from maintaining or introducing more stringent measures for the protection of the environment compatible with the Treaty,

HAS ADOPTED THIS DIRECTIVE:

#### Article 1

For the purposes of this Directive:

1. 'Air pollution' means the introduction by man, directly or indirectly, of substances or energy into the air resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems and material property and impair or interfere with amenities and other legitimate uses of the environment.

2. 'Emission limit value' means the concentration and/or mass of polluting substances which is not to be exceeded in emissions from plants during a specified period.

3. 'Municipal waste' means domestic refuse, as well as commercial or trade refuse and other waste which, because of its nature or composition, is similar to domestic refuse.

4. 'Municipal waste-incineration plant' means any technical equipment used for the treatment of municipal waste by incineration, with or without recovery of the combustion heat generated, but excluding plants used specifically for the incineration of sewage sludge, chemical, toxic and dangerous waste, medical waste from hospitals or other types of special waste, on land or at sea, even if these plants may burn municipal waste as well.

This definition covers the site and the entire installation comprising the incinerator, its waste, fuel and air supply systems and the devices and systems for checking incineration operations and continuously recording and monitoring incineration conditions.

5. 'New municipal waste-incineration plant' means a municipal waste incineration plant for which authorization to operate is granted as from the date specified in Article 12 (1).

6. 'Nominal capacity' of the incineration plant means the sum of the incineration capacities of the furnaces of which the plant is composed, as specified by the constructor and confirmed by the operator, with due account being taken, in particular, of the calorific value of the waste, expressed as the quantity of waste incinerated per hour.

## Article 2

Without prejudice to Article 4 of Directive 84/360/EEC, Member States shall take the necessary measures to ensure that the conditions laid down in Articles 3 to 10 of this Directive are attached to the prior authorization required to operate all new municipal waste-incineration plants under Article 3 of Directive 84/360/EEC and under Article 8 of Directive 75/442/EEC.

## Article 3

1. The following emission limit values, standardized at the following conditions: temperature 273 K, pressure 101,3 kPa, 11 % oxygen or 9 % CO<sub>2</sub>, dry gas, shall apply to new municipal waste incineration plants:

Emission limit values in mg/nm<sup>3</sup> as a function of the nominal capacity of the incineration plant

1.2.3.4 // // // // // Pollutant // less than 1 tonne/h // 1 tonne/h or more but less than 3 tonnes/h // 3 tonnes/h or more // // // // // Total dust // 200 // 100 // 30 // // // // // Heavy metals // // // // // - Pb+Cr+Cu+Mn // - // 5 // 5 // - Ni+As // - // 1 // 1 // - Cd and Hg // - // 0,2 // 0,2 // // // // // Hydrochloric acid (HC1) // 250 // 100 // 50 // // // // // Hydrofluoric acid (HF) // - // 4 // 2 // // // // // Sulphur dioxide (SO<sub>2</sub>) // - // 300 // 300 // // // // //

2. In regard to plants with a capacity of less than one tonne/h, the emission limit values may refer to an oxygen level of 17 %. In this case, the concentration values may not exceed those laid down in paragraph 1, divided by 2,5.

3. By way of derogation from paragraph 1, the competent authorities of a Member State may grant an authorization for plants with a nominal capacity of less than one tonne/h where special local conditions so require, provided that a limit value of 500 mg/nm<sup>3</sup> of total dust and all the provisions of Directive 84/360/EEC are complied with. The Member State concerned shall inform the Commission of these cases, which shall be the subject of consultations with it. The Commission shall in turn inform the other Member States thereof.

4. The competent authorities shall lay down emission limit values for pollutants other than those mentioned in paragraph 1 when they consider this to be appropriate because of the composition of the waste to be incinerated and of the characteristics of the incineration plant. For the purposes of laying down these emission limit values, the authorities shall take account of the potential harmful effects of the pollutants in question on human health and the environment and of the best available technology not entailing excessive costs. In particular, the competent authorities may fix emission limit values for dioxins and furans until such time as a Community directive concerning this specific question is adopted.

## Article 4

1. All new municipal waste-incineration plants must be designed, equipped and operated in such a way that the gas resulting from the combustion of the waste is raised, after the last injection of combustion air, in a controlled and homogeneous fashion and even in the most unfavourable conditions, to a temperature of at least 850 °C at least two seconds in the presence of at least 6 % oxygen.

2. All new municipal waste incineration plants shall observe the following conditions when in operation:

(a) the concentration of carbon monoxide (CO) in the combustion gases must not exceed 100 mg/nm<sup>3</sup>;

(b) the concentration of organic compounds (expressed as total carbon) in the combustion gases must not exceed 20 mg/nm<sup>3</sup>.

The limits stipulated under (a) and (b) above shall be standardized at the following conditions: temperature 273 K, pressure 101,3 kPa, 11 % oxygen or 9 % CO<sub>2</sub>, dry gas.

3. Conditions different from those laid down in paragraph 1 may be authorized if appropriate techniques are used in the incineration furnaces or combustion-gas treatment equipment, provided that the competent authorities have satisfied themselves that, with the use of these techniques, the levels of polychlorinated dibenzodioxins (PCDDs) and of polychlorinated dibenzofurans (DCDFs) emitted will be equivalent to, or lower than, those obtained with the technical conditions laid down in paragraph 1.

Decisions taken under the provisions of this paragraph and the results of verifications made shall be communicated to the Commission by the competent authorities designated for this purpose by the Member States.

4. All new municipal waste-incineration plants must be designed, equipped and operated in such a way as to prevent emissions into the air giving rise to significant ground-level air pollution; in particular, waste gases shall be discharged in a controlled fashion by means of a stack.

The competent authority shall ensure that the stack height is calculated in such a way as to safeguard human health and the environment.

#### Article 5

1. The temperatures and the oxygen content laid down in Article 4 are minimum values to be observed at all times when the plant is in operation.

2. The carbon monoxide (CO) concentration laid down in Article 4 (2) (a) is the limit value for the hourly average for all plants. In addition, in the case of plants of nominal capacity of 1 tonne/h or more, at least 90 % of all measurements taken in any 24 hour period must be below 150 mg/nm<sup>3</sup>. Those averages shall be calculated by taking into account only the hours in which the plant is actually in operation, including the start-up and shut-off periods.

3. In the case of the other substances to be continuously monitored under Article 6:

(a) none of the moving seven-day averages of the concentration values measures for these substances may exceed the corresponding limit values;

(b) none of the daily averages of the concentration values measured for these substances may exceed the corresponding limit value by more than 30 %.

For the purposes of calculating the abovementioned average values, only the periods in which the plant is actually in operation shall be taken into account, including the start-up and shut-off periods.

4. Where only discontinuous measurements are required, the emission limit values shall be regarded as having been complied with if the results of each of the series of measurements defined and determined according to the rules laid down by the competent authorities under Articles 6 (3), (4) and (5) do not exceed the emission limit values. Article 6

1. The following measurements shall be taken at new municipal waste-incineration plants:

(a) concentrations of certain substances in the combustion gases:

(i) concentrations of total dust, CO, oxygen and HCl shall be continuously measured, and recorded in the case of plants of a nominal capacity equal to, or greater than, 1 tonne/h;

(ii) the following shall be measured periodically:

- concentrations of the heavy metals referred to in Article 3 (1), of HF, and of SO<sub>2</sub>, in the case of plants of a nominal capacity equal to, or greater than, 1 tonne/h,

- concentrations of total dust, of HCl, of CO and of oxygen in the case of plants of a nominal capacity of less than 1 tonne/h,

- concentrations of organic compounds (expressed as total carbon) in general;

(b) operating parameters:

(i) the temperatures of the gases in the area where the conditions imposed by Article 4 (1) are satisfied and the water vapour content of the combustion gases shall be continuously measured and recorded. Continuous measurement of the water vapour content shall not be necessary provided that the combustion gas is dried before the emissions are analysed;

(ii) the residence time of the combustion gases at the minimum temperature of 850 °C specified in Article 4 (1) must be the subject of appropriate verifications at least once when the incineration plant is first brought into service and under the most unfavourable operating conditions envisaged.

2. The results of the measurements referred to in paragraph 1 shall be standardized at the following conditions:

temperature 273 K, pressure 101,3 kPa, 11 % oxygen or 9 % CO<sub>2</sub>, dry gas.

Where Article 3 (2) is applied, however, they may be standardized at the following conditions:

temperature 273 K, pressure 101,3 kPa, 17 % oxygen, dry gas.

3. All the measurement results shall be recorded, processed and presented in an appropriate fashion so that the competent authorities can verify compliance with the conditions laid down, in accordance with procedures to be decided upon by those authorities.

4. The sampling and measurement procedures used to satisfy the obligations imposed by paragraph 1 and the location of the sampling or measurement points shall require the prior approval of the competent authorities.

5. For the periodic measurements, the competent authorities shall lay down appropriate measurement programmes to ensure that the results are representative of the normal level of emissions of the substances concerned.

The results obtained must be suitable for verifying that the limit values applicable have been observed.

#### Article 7

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

## Article 8

1. Should the measurements taken show that the limit values laid down in this Directive have been exceeded, the competent authority shall be informed as soon as possible. It shall ensure that the plant concerned does not continue to operate while failing to comply with emission standards and shall take the necessary measures to ensure it is modified or no longer operated.

2. The competent authorities shall lay down the maximum permissible period of any technically unavoidable stoppages of the purification devices during which the concentrations in the discharges into the air of the substances which these devices are intended to reduce exceed the limit values laid down. In case of a breakdown, the operator shall reduce or close down operations as soon as practicable and until normal operations can be restored. Under no circumstances may the plant continue to operate more than eight hours uninterrupted; moreover, the cumulative duration over a year of operation in such conditions shall be less than 96 hours.

The dust content of the discharges shall under no circumstances exceed 600 mg/nm<sup>3</sup> during the periods referred to in the preceding subparagraph and all the other conditions, in particular the combustion conditions, shall be complied with.

## Article 9

The information required by Article 9 of Directive 84/360/EEC and, in accordance with appropriate procedures and in the form decided upon by the competent authorities, the results of the controls provided for in Articles 5 and 6 shall be made available to the public, subject to respect of provisions applicable in respect of commercial secrecy.

## Article 10

Exceptionally, Member States may derogate from some of the provisions of this Directive in the case of plants which are specifically designed to burn waste-derived fuels (i.e. fuel manufactured from the combustible fraction of municipal waste by advanced mechanical processes designed to maximize the recycling potential of such waste and which contain no more than 15 % ash prior to any addition of substances to enhance fuel properties) where compliance with such provisions would entail excessive costs or if, given the technical characteristics of the plant in question, such provisions are inappropriate from a technical viewpoint, provided that:

- those plants burn no waste other than that defined above (apart from back-up fuels used for start-up operations),
- the provisions of Directive 84/360/EEC are complied with.

## Article 11

1. In the framework of the verification required by Article 11 of Directive 84/360/EEC and also in relation to Article 4 of that Directive, Member States shall take the necessary measures to ensure that compliance with the conditions relating to new incineration plants pursuant to this Directive is verified by the competent authorities.

2. This Directive shall be without prejudice to the requirement of Article 12 of Directive 84/360/EEC for Member States to revise, where necessary, the conditions imposed in the authorization granted to an incineration plant.

## Article 12

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive before 1 December 1990. They shall forthwith inform the Commission thereof.

2. Member States shall communicate to the Commission the texts of the provisions of national law which they adopt in the field governed by this Directive.

#### Article 13

This Directive is addressed to the Member States.

Done at Luxembourg, 8 June 1989.

For the Council

The President

J. L. SAENZ COSCULLUELA

- (1) OJ No C 75, 23. 3. 1988, p. 4.
- (2) OJ No C 69, 20. 3. 1989, p. 219.
- (3) OJ No C 318, 12. 12. 1988, p. 3.
- (4) OJ No C 112, 20. 12. 1973, p. 1.
- (5) OJ No C 139, 13. 6. 1977, p. 1.
- (6) OJ No C 46, 17. 2. 1983, p. 1.
- (7) OJ No C 328, 7. 12. 1987, p. 1.
- (8) OJ No C 328, 7. 12. 1987, p. 1.
- (9) OJ No L 194, 25. 7. 1975, p. 39.
- (10) OJ No L 188, 16. 7. 1984, p. 20.