

Issue 3

**Service contract to assist the Commission in summarising replies from Member States to the questionnaire contained in Commission Decision 98/184/EC**

A report produced for

The European Commission DG Environment

**Important**

**This report has been prepared by AEA Technology plc on the basis of replies received from the Members States to the questionnaire contained in Commission Decision 98/184/EC. It does not represent the Commission's official position.**

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AEA Technology Environment  
Culham Science Centre  
Abingdon  
Oxfordshire  
OX14 3ED  
Telephone + 44 1235 463122  
Facsimile +44 1235 463574

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AEA Technology is certificated to BS EN ISO9001:(1994)

	<b>Name</b>	<b>Signature</b>	<b>Date</b>
<b>Authors</b>	James Cadman Sadok Hidri		
<b>Reviewed by</b>	Haydn Jones		
<b>Approved by</b>	Dr Keith Brown		

# Summary

The purpose of this report is to inform the European Commission of the status of implementation of Directive 94/67/EC of 16 December 1994 on the incineration of hazardous waste<sup>1</sup> for the period 1998 – 2000 inclusive.

Council Directive 94/67/EC lays down minimum conditions for operating plants incinerating hazardous waste. In accordance with the relevant legislation, the Commission is required to examine the extent of implementation of the directive by member states and to report its findings to the Council and European Parliament.

Under Directive 91/692/EEC<sup>2</sup>, Member States are required to submit reports, drawn up on the basis of questionnaires. A questionnaire relating to 94/67/EC on hazardous waste was adopted by the Commission Decision 98/184/EC<sup>3</sup> of 25 February 1998. Directive 91/692/EEC requires the Commission to publish a consolidated report. The aim of the Community report is to enable Member States and the Commission to assess the progress made in implementing the waste management Directives throughout the Community, and to provide the general public with information on the state of the environment. The success of the report is largely dependent upon the quality and punctuality of the national information returned in response to the Commission's questionnaire.

The report from the current work is based on Member State responses to the questionnaire adopted by Commission Decision 98/184/EC of 25<sup>th</sup> February 1998, on the implementation of the Council Directive 94/67/EC on the incineration of hazardous waste by Member States.

All fifteen Member States responded to the Commission's questionnaire. The analysis of the questionnaire responses from each Member State indicates that all fifteen Member States have transposed Directive 94/67/EC into their national laws.

A summary of the Member States' response to each question is provided below, along with the relevant summarised text from the Directive. A summary of individual Member State responses is provided in Section II of this report. The full response from each Member State, in English, is provided in Appendix 1.

*Article 3(1) states that permits shall be granted only if the application shows that the incineration plant is designed, equipped and will be operated in such a manner that the appropriate preventive measures against environmental pollution will be taken.*

**1.(a) What measures in general have been taken in accordance with Article 3(1) to prevent environmental pollution resulting from the design, equipment and operation of incineration plants?**

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<sup>1</sup> OJ L 365, 31.12.1994, p.34

<sup>2</sup> OJ L 377, 23.12.1991, p. 48

<sup>3</sup> OJ L 067, 07.03.1998, p. 48

*The extent of details provided to the Commission varies among the Member States. However, based on the information given in the responses to the questionnaire, it appears that Article 3(1) of the Directive has been transposed into national laws of all Member States. Belgian Flanders and Wallonia, Finland, Germany, Greece, Ireland, Luxembourg, Spain quote their national laws. Austria, Denmark, France, Italy, Netherlands, Portugal, Sweden and the United Kingdom refer to their respective national legislation but also give details on the procedures for applying for a permit as well as designing and operating incineration plants in order to comply with Article 3(1) of the Directive.*

**1.(b) If this information is available, indicate the number of permits issued in accordance with Article 3(1) and associated operating capacities**

*Information on the number of permits issued and associated operating capacities is summarised in Table 1. Permits have been issued by Austria, Belgian Flanders and Wallonia, Denmark, Finland, Greece, Ireland, Netherlands, Spain, Sweden and the United Kingdom (England and Wales and Scotland). In the case of Denmark, information was supplied on one plant only. No permits have been issued by Germany, Luxembourg, Portugal and the United Kingdom for Northern Ireland and Gibraltar.*

*Article 3(4). The permit for co-incineration shall be granted only if it is demonstrated that the hazardous waste is incinerated as completely as possible. The permit shall explicitly list the types and minimum and maximum quantities of hazardous wastes as well as their maximum concentration of pollutants such as PCBs. The results of measurements carried out within six months of the start of operation, under the most unfavourable conditions anticipated, shall show that the provisions of Article 7 (which states the emission limit values for the exhaust gases) are complied with. For this period the competent authorities may grant exemptions from the percentage requirement stipulated in paragraph 3. (This states that if the heat released from incinerating hazardous wastes is not higher than 40% of the total heat released from a plant which is not intended for such incineration, i.e. co-incineration, then at least Articles 1 to 5, 6(1), 6(5), 7 including the provisions relating to measurements referred to in Articles 10 and 11, Article 9, 12, 13 and 14 of the Hazardous Waste Incineration Directive shall apply.)*

**2.(a) What requirements in general for the granting of permits for co-incineration have been introduced in accordance with Article 3(4).**

*Belgian Flanders, Denmark, Finland, Ireland, the Netherlands and the United Kingdom apply the same regulations as for incineration. Austria, Belgian Wallonia, France, Germany, Greece, Italy, Luxembourg, Portugal, Spain and Sweden have specific regulations drawn up for co-incineration. These Member states have supplied details of their specific legislation.*

*Article 3(3) states that if the heat released from incinerating hazardous wastes is not higher than 40% of the total heat released from a plant which is not intended for such incineration, i.e. co-incineration, then at least Articles 1 to 5, 6(1), 6(5), 7 including the provisions relating to measurements referred to in Articles 10 and 11, Article 9, 12, 13 and 14 of the Hazardous Waste Incineration Directive shall apply.*

**2.(b) Have exemptions to the percentage required by Article 3(3) been granted during the period of six months after the start of operation in accordance with Article 3(4)?**

*No Member States granted any exemptions in accordance with Article 3(4).*

**2.(c) If the answer to (b) is 'yes', state the reasons why?**

*Not applicable.*

**2.(d) If this information is available, indicate the number of permits and the authorised total volume of waste co-incinerated in accordance with Article 3(3).**

*Austria, Germany, Greece, Spain, Sweden, United Kingdom for England and Wales and Scotland have reported issuing permits in accordance with Article 3(3). Belgian Wallonia, Finland, Ireland, Luxembourg, Netherlands, Portugal and United Kingdom for Northern Ireland and Gibraltar have reported that no permits have been granted. No information to this question was provided by Belgian Flanders, Denmark and France. Italy responded that the data are not fully available.*

**Article 4. Applications for permits and decisions of the competent authorities thereon, and the results of the monitoring provided for in Article 11 of Directive 94/67 shall be made available to the public in accordance with Directive 90/313/EEC on the freedom of access to information on the environment.**

**3. What Measures in general have been taken in accordance with Article 4 to ensure the public access to the information laid down in that Article**

*All Member States confirmed that public access to permit applications and authorisations is free. In addition, Austria, Belgian Flanders, France, Germany, Greece, Ireland, Luxembourg, Sweden and the United Kingdom provide free access to emissions monitoring results and operational details of the plant. The responses from Belgian Wallonia, Denmark, Finland, Italy, the Netherlands, Portugal and Spain are not precise about public access being free on monitoring results and the other aspects of the operating of the plant. Most Member States quoted national laws. The UK and Ireland also state where the information for a permit application is published in the media.*

**Article 5. The operator shall take all necessary measures to reduce negative effects on the environment as far as possible during delivery and reception of waste. Prior to accepting waste the operator shall have a description of the waste including its physical and chemical composition, its hazard characteristics, substances with which it cannot be mixed, and the precautions to be taken in handling the waste. The mass of the waste will be determined and the associated documents shall be checked. Representative samples will also be taken to verify agreement with the description of the waste provided. These samples shall be kept for at least one month after the incineration.**

**4.(a) What measures in general to prevent or reduce negative effects on the environment from delivery and reception of waste have been taken in accordance with Article 5?**

*All Member States have implemented measures to reduce the effects from delivery of waste and all Member States refer to national laws. Austria, Germany, Greece, Ireland, Italy, Portugal and the United Kingdom provided specific details of measures for the delivery and reception of wastes. These included the requirement to present the physico-chemical, safety and toxicological data on the waste as well as storage methods, sampling and analysis of the waste and documentation procedures.*

*Article 5(4). The competent authorities may grant exemptions from paragraphs 2 and 3 (which cover the physico-chemical, hazardous and safety information required prior to incineration, see Q. 4a above) for industrial plants and undertakings that only incinerate their own waste at the place of its production, provided that the same level of protection is met.*

**4.(b) Where available indicate the number of exemptions from paragraphs 2 and 3 of Article 5 granted in accordance with Article 5(4).**

*Germany, Ireland, Italy and Sweden and in the United Kingdom, England and Wales, and Scotland granted exceptions in accordance with Article 5(4). Only Ireland and the United Kingdom, Scotland provided details of the number of exemptions granted. No exemptions were granted by Austria, Belgian Flanders and Wallonia, Denmark, Finland, Greece, Luxembourg, the Netherlands, Portugal, Spain and in the United Kingdom for Northern Ireland and Gibraltar. France provided no response to this question.*

*Article 6(2) covers the minimum temperatures, combustion times and oxygen content for the incineration of hazardous wastes, specifying differences for chlorinated and liquid wastes. Article 6(4) states that different requirements may be authorised by the competent authorities, provided that emissions are as low as, if not lower than, would be obtained by using the levels in 6(2).*

**5.(a) Have requirements other than those laid down in Article 6(2) been authorised in accordance with Article 6(4)?**

*France, Germany, Ireland and the United Kingdom have authorised other requirements than those laid down in Article 6(2) and provided details of the number and/or nature of these exceptions, see answer to question 5 (b). Austria, Belgian Flanders and Wallonia, Denmark, Finland, Greece, the Netherlands, Portugal, Spain and Sweden have not authorised exceptions to the requirements of Article 6(2).*

**5.(b) If the answer to (a) is ‘Yes’, give details of the number of cases and for each one give the authorised conditions as well as the results of the verification made.**

*Only France, Germany, Ireland, and the United Kingdom set other requirements other than those laid down in Article 6(2) in accordance with Article 6(4). All these Member States*

*provided details of the number of cases and authorised conditions as well as the results of verifications made. The conditions included changes in one or more of the incineration temperature, oxygen content of the air and the waiting times between injections.*

**Article 6(3) covers the use of automatic burners which are employed to maintain minimum temperatures during plant start-up, main operation and shut-down. The burners are not to be fed with fuels that cause higher emissions than from the use of gas-oil, liquefied gas or natural gas. Systems are also to be put in place that prevent hazardous waste feed:**

- *at start-up, until the required minimum incineration temperature has been reached,*
- *whenever the required minimum incineration temperature is not maintained,*
- *whenever the continuous measurements show that any emission limit value is exceeded owing to disturbances or failures of the purification devices.*

**5.(c) What measures in general have been taken to comply with Article 6(3)?**

*All Member States have undertaken measures to ensure the correct temperature for incineration. All, except Denmark and Greece cite national laws. Austria, Germany, Italy and the United Kingdom also give details on the method to be followed during start-up and shut-down phases. Extra burners are to be used to maintain the correct minimum temperature for incineration during the start-up and shut-down phases. They are also to be used whenever the temperature drops below the minimum for incineration during the main phase of the process. Austria and Germany also state that systems are to be put in place that prevent the plant from filling up with waste if the minimum temperature has not yet been reached during the start-up phase.*

**Article 6(6). All incineration plant shall 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, exhaust gases shall be discharged in a controlled fashion by means of a stack. The stack height shall be calculated to safeguard human health and the environment.**

**5.(d) What measures in general in accordance with Article 6(6) have been taken to ensure that the ground level air pollution resulting from emissions is not significant?**

*All Member States have taken measures to ensure correct stack heights to minimise ground-level air pollution and all cite applicable national laws. Austria, Belgian Flanders, Denmark, France, Germany, Greece, Ireland, Italy and the United Kingdom also provided specific references to requirements for stack heights, such as requiring topographical and meteorological information and the use of best available techniques. Denmark, France, Germany, Greece, Ireland and the United Kingdom also referred to techniques and models for calculating stack heights.*

**Article 6(5) gives the operational limit values for carbon monoxide concentrations in the combustion gases. Article 7(1) states the emission limit values for the exhaust gases. Article 7(2) covers the emission limit values of dioxins and furans.**

**6.(a) What measures in general have been taken to comply with the requirements laid down in Article 6(5), Article 7(1) and 7(2)?**

*All responding Member States transposed values into their national law. All member States except Denmark, Greece, and Ireland cited national laws. In addition, Austria, Germany and Spain provided specific details of emission limits. These include specific requirements regarding the construction and the operation of incineration plants in a way to avoid exceedance of emissions of substances set by the relevant authority. Measurement details on the determination of limit values of these emissions are provided by the relevant authority. For instance, in Germany, emission of particulates must not exceed a daily average of 10mg/m<sup>3</sup> and must not exceed half hourly average of 30mg/m<sup>3</sup>. The same approach is used for the other substances, i.e. setting emission limit values on a daily average and emission limit values on an half hourly average.*

*Article 12(1). The competent authorities are to be informed immediately if measurements show that emission limits have been exceeded. The plant concerned shall not continue to feed hazardous waste while failing to comply with emission limit values, until the competent authorities allow the resumption of feeding the waste.*

*Article 12(2) states the maximum permissible period of technically unavoidable stoppages, or disturbances, during which the discharge concentrations of regulated substances may exceed the emission limit values. It also covers breakdowns, in which the operator shall reduce or close down operations as soon as practicable until normal operations can be restored.*

**6.(b) What provisions made been made concerning the maximum permissible time periods for stoppages, disturbances or failures of the purification devices or the measurement devices in accordance with Article 12(2) as well as concerning the information without delay of the competent authorities in accordance with Article 12 (1), if the emission limit values laid down in Articles 6 (5), 7 (1) and 7 (2) have been exceeded?**

*All Member States responded that the necessary provisions have been made in their national laws. All Member States except Denmark and Ireland cited specific national laws. In Denmark, a breach on emission limits or on other operations with respect to requirements set initially by the relevant authority results in the imposition of a penalty. In Ireland, there is no provision for the operation of an incinerator where emissions exceed the emission limit values. Austria and Spain specified maximum permissible times for stoppages or failures in their responses. Italy, Ireland and Spain (for co-incineration plant) stated that incineration must cease following an exceedance of emission limits. Only Austria, Germany, Spain and the United Kingdom specified requirements for immediate notification of breached emission limits etc.*

**6.(c) Have emission limit values for pollutants other than those laid down in Article 7 been set in national regulations?**

*Austria, Belgian Flanders, Germany, Luxembourg and Spain have additional limit values to those laid out in Article 7 for a variety of substances including mercury and NO<sub>x</sub> in national*

*laws. Belgian Wallonia, Denmark, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal, Sweden and the United Kingdom have not set other emission values.*

**6.(d) If the answer to question (c) is “Yes”, give details of the reasons and indicate for each pollutant the emission value**

*Austria, Belgian Flanders, Germany, Luxembourg and Spain have additional limit values to those laid out in Article 7 in order to ensure consistency with national laws that were in force prior to adoption of the Directive. Of these Member States, Austria, Belgian Flanders, Luxembourg and Spain have set more stringent limit values for oxides of nitrogen and Germany has set stricter limits for emissions of both nitrogen oxides and mercury. Belgian Wallonia, Denmark, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal, Sweden and the United Kingdom have not set other emission values. In Germany, in addition a continual monitoring program of mercury emissions has been set up.*

*Article 7(4) states that where hazardous wastes are co-incinerated in accordance with Article 3(3), the limits set out in Article 6(5) and paragraphs 1, 2 and 3 of Article 7 shall only apply to that part of the volume of exhaust gas resulting from the incineration of the hazardous wastes.*

**6.(e) What provisions have been made for the determination of appropriate emission limit values or guide values in accordance with Article 7 (4)?**

*Austria, Belgian Flanders and Wallonia, Denmark, France, Germany, Greece, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom (England and Wales, and Scotland) have made provisions for the determination of appropriate emission limit values or guide values in accordance with Article 7(4). All these Member States except the United Kingdom, which refers to national technical guidance, refer to applicable national law. Austria deviates slightly from the Directive by setting fixed values for cement works calculated with respect to the mixing rules. In Italy, values are based on the principle of weighted average between the volume of waste and the total volume incinerated on one hand and the associated emission limits on the other hand. Finland and Ireland have made no special provisions for the co-incineration of hazardous waste. In the United Kingdom (Northern Ireland and Gibraltar) no provisions are referenced.*

*Article 8 covers the discharge of wastewaters from incineration plant, which are subject to a permit granted by the competent authorities. Discharges of aqueous waste to the aquatic environment from the cleaning of exhaust gases shall be limited as far as possible, but may be allowed subject to a specific provision in the permit if the requirements of relevant Community, national and local laws are complied with, in terms of emission limit values. Incineration plant sites shall be designed and operated to prevent the release of any polluting substance into soil and groundwater.*

**7. What measures in general have been taken to minimise the wastewater discharges in accordance with Article 8?**

*All Member States have put measures in place to reduce wastewater. However, only Austria, Denmark, Finland, Germany, Greece, Ireland and Italy specifically refer to requirements for*

*minimisation of wastewater discharges in their responses. These Member States impose specific requirements on the construction and operation of incineration plant in order to avoid toxic substances entering the ground or groundwater. For instance, in Germany wastewater is to be collected and discharged.*

***Article 9 covers the handling, storage, treatment, transport and disposal of incineration residues. Such residues should be kept separate from each other and 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 soluble fraction and heavy metals. Article 9(3) requires that any heat generated by the incineration processes should be used as far as possible.***

**8.(a) What measures in general have been taken in accordance with Article 9 to ensure compliance with Directives 75/442/EEC and 91/689/EEC?**

*All responding Member States have ensured measures are in place to deal with solid wastes from incineration plants and all cite applicable national legislation. Austria, Denmark, France, Germany, Ireland, Spain and the United Kingdom confirm specific measures for the handling, storage an/or disposal of ashes. These Member States specify that details of the physical and chemical characteristics of waste produced by the plant are required. All these Member States specify that the transport and storage of wastes originating in incineration are to be conducted in closed containers in order to avoid any releases. In Denmark, there is an incentive through the waste tax to keep quantities of waste sent to landfills as low as possible.*

**8.(b) Where this information is available indicate whether the heat produced by incineration is recovered, the type of recovery and the efficiencies.**

*All Member States except France, Luxembourg and Portugal stated that they use the heat recovered in their incineration plants to generate electricity or for heating. Luxembourg has no hazardous waste incineration plants. France and Portugal provided no response to this question. Belgian Wallonia referenced law but provided no other information. Germany, Greece, Ireland and Italy stated that the information was not available. The highest level of efficiency is achieved in Sweden at approximately 90%.*

***Article 10 states that measurement requirements to monitor parameters, conditions and mass concentrations of pollutants shall be laid down in the permit, or in the conditions attached to the permit, issued by the competent authorities or in the relevant general binding rules on measurement requirements. The permit shall only be granted if the application shows that the proposed measurement techniques comply with CEN standards or national standards in the absence of the former. All monitoring equipment will be tested annually.***

**9. What measures in general have been taken to ensure compliance with the measurement requirements in accordance with Article 10 including the requirements of Annex III?**

*All Member States have implemented measures for compliance with the measurement requirements and all except Denmark, Greece, and Ireland have referenced national legislation. Austria and Germany have also given further detail on conditions and reporting schedules. In Austria, further requirements include start-up and close-down measurements, measurement location are to be fixed and measurement sites have to comply with defined requirements. In Germany, values of emissions are to be controlled and measured either continually and/or through single measurements.*

***Article 13(2). The operator may notify the competent authorities within six months after 31<sup>st</sup> December 1996 that the existing plant will not be operated for more than 20,000 hours within a period of five years at maximum, starting from the operator's notification, before being definitely shut down. In this case the provisions of paragraph 1 shall not apply, which is that this Directive shall apply to existing incineration plant within 3½ years from 31<sup>st</sup> December 1996).***

**10. With regard to Article 13(2), indicate the number of notifications of complete shut down of installations received including the capacity of incineration, the number of hours and the period of operation.**

*Only France, Spain and the United Kingdom, Scotland notified the relevant authority of a possible shutdown. For Austria, Belgian Flanders and Wallonia, Finland, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and the United Kingdom (excluding Scotland) there have been no reported shutdowns. Similarly in Denmark and Sweden the exemption rule in accordance with Article 13.2 has not been applied.*

**Disclaimer**

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# Contents

<b>I</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>II</b>	<b>REPORT ON ANSWERS TO THE QUESTIONNAIRE.....</b>	<b>2</b>
II.1	TRANSPOSITION INTO NATIONAL LAW .....	2
	<i>1.(a) Has the Commission been provided with details of the law, regulations and administrative provisions adopted to comply with the Directive? .....</i>	<i>2</i>
II.2	IMPLEMENTATION OF THE DIRECTIVE .....	2
	<i>1.(a) What measures in general have been taken in accordance with Article 3(1) to prevent environmental pollution resulting from the design, equipment and operation of incineration plants? .....</i>	<i>2</i>
	<i>1.(b) If this information is available, indicate the number of permits issued in accordance with Article 3(1) and associated operating capacities? .....</i>	<i>6</i>
	<i>2.(a) What requirements in general for the granting of permits for co-incineration have been introduced in accordance with Article 3(4).....</i>	<i>7</i>
	<i>2.(b) Have exemptions to the percentage required by Article 3(3) been granted during the period of six months after the start of operation in accordance with Article 3(4)?.....</i>	<i>9</i>
	<i>2.(c) If the answer to (b) is ‘yes’, state the reasons why? .....</i>	<i>9</i>
	<i>2.(d) If this information is available, indicate the number of permits and the authorised total volume of waste co-incinerated in accordance with Article 3(3).....</i>	<i>9</i>
	<i>3. What Measures in general have been taken in accordance with Article 4 to ensure the public access to the information laid down in that Article .....</i>	<i>10</i>
	<i>4.(a) What measures in general to prevent or reduce negative effects on the environment from delivery and reception of waste have been taken in accordance with Article 5? .....</i>	<i>13</i>
	<i>4.(b) Where available indicate the number of exemptions from paragraphs 2 and 3 of Article 5 granted in accordance with Article 5(4).....</i>	<i>16</i>
	<i>5.(a) Have requirements other than those laid down in Article 6(2) been authorised in accordance with Article 6(4)?.....</i>	<i>17</i>
	<i>5.(b) If the answer to (a) is ‘Yes’, give details of the number of cases and for each one give the authorised conditions as well as the results of the verification made.....</i>	<i>17</i>
	<i>5.(c) What measures in general have been taken to comply with Article 6(3)? .....</i>	<i>18</i>
	<i>5.(d) What measures in general in accordance with Article 6(6) have been taken to ensure that the ground level air pollution resulting from emissions is not significant? .....</i>	<i>21</i>

6.(a) What measures in general have been taken to comply with the requirements laid down in Article 6(5), Article 7(1) and 7(2)? .....	24
6.(b) What provisions made been made concerning the maximum permissible time periods for stoppages, disturbances or failures of the purification devices or the measurement devices in accordance with Article 12(2) as well as concerning the information without delay of the competent authorities in accordance with Article 12 (1), if the emission limit values laid down in Articles 6 (5), 7 (1) and 7 (2) have been exceeded? .....	27
6.(c) Have emission limit values for pollutants other than those laid down in Article 7 been set in national regulations? .....	31
6.(d) If the answer to question (c) is “Yes”, give details of the reasons and indicate for each pollutant the emission value .....	31
6.(e) What provisions have been made for the determination of appropriate emission limit values or guide values in accordance with Article 7 (4)? .....	33
7. What measures in general have been taken to minimise the wastewater discharges in accordance with Article 8? .....	36
8.(a) What measures in general have been taken in accordance with Article 9 to ensure compliance with Directives 75/442/EEC and 91/689/EEC? .....	39
8.(b) Where this information is available indicate whether the heat produced by incineration is recovered, the type of recovery and the efficiencies. ....	43
9. What measures in general have been taken to ensure compliance with the measurement requirements in accordance with Article 10 including the requirements of Annex III? .....	46
10. With regard to Article 13(2), indicate the number of notifications of complete shut down of installations received including the capacity of incineration, the number of hours and the period of operation.....	50

## Appendices

### APPENDIX 1 DETAILED MEMBER STATE RESPONSES (ENGLISH TRANSLATIONS)



## I Introduction

The purpose of this report is to inform the Commission of the implementation of Directive 94/67/EC EC of 16 December 1994 on the incineration of hazardous waste<sup>4</sup> for the period 1998 – 2000 inclusive.

Council Directive 94/67/EC lays down minimum conditions for operating plants incinerating hazardous waste. In accordance with the relevant legislation, the Commission is required to examine the extent of implementation of the directive by member states and to report its findings to the Council and European Parliament.

The main provisions of Directive 94/67/EC as amended are:

- Measures and procedures as to prevent or, where that it is not practicable, to reduce negative effects on the environment (Art. 1)
- Definition of hazardous waste and of incineration plants with a specification on the existing and new incineration plants (Art. 2)
- Specific permit requirements for establishments and undertakings dealing with the incineration of hazardous waste (Art. 3)
- Availability of permit applications and decisions and monitoring results to the public (Art. 4)
- Appropriate delivery and reception of hazardous waste for incineration (Art. 5)
- Appropriate design, equipment and operating system for incineration (Art. 6 & 7)
- Specific measurement requirements of specific parameters, in particular on the what, how and when measures have to be taken (Art. 10 and Art. 11)

This report is based on Member State responses to the questionnaire adopted by Commission Decision 98/184/EC of 25<sup>th</sup> February 1998, on the implementation of the Council Directive 94/67/EC on the incineration of hazardous waste by Member States.

All fifteen Member States provided full or partial responses to the Commission's questionnaire. The following chapter summarises each Member States' response to each of the Commission's questions. Details of each Member States responses are provided in Appendix 1.

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<sup>4</sup> OJ L 365, 31.12.1994, p.34

## II Report on answers to the questionnaire

### II.1 TRANSPOSITION INTO NATIONAL LAW

#### 1.(a) Has the Commission been provided with details of the law, regulations and administrative provisions adopted to comply with the Directive?

All fifteen Member States stated that they have provided the Commission with the requisite information.

### II.2 IMPLEMENTATION OF THE DIRECTIVE

This chapter provides an analysis of Member State responses on a question by question basis on the implementation of the Directive. The responses of the Member States are analysed according to the level of detail provided. For example, whilst some Member States simply cite their national legislation when responding to a particular question, others may refer to both national legislation and also provide details of implementation measures taken. Other Member States do not give any reference of their national legislation but give details of the measures taken.

The detailed Member State responses to each question, in English, are given in Appendix 1 of this report.

#### 1.(a) What measures in general have been taken in accordance with Article 3(1) to prevent environmental pollution resulting from the design, equipment and operation of incineration plants?

*The extent of details provided to the Commission varies among the Member States. However, based on the information given in the responses to the questionnaire, it appears that Article 3(1) of the Directive has been transposed into national laws of all Member States. Belgian Flanders and Wallonia, Finland, Germany, Greece, Ireland, Luxembourg, Spain quote their national laws. Austria, Denmark, France, Italy, Netherlands, Portugal, Sweden and the United Kingdom refer to their respective national legislation but also give details on the procedures for applying for a permit as well as designing and operating incineration plants in order to comply with Article 3(1) of the Directive.*

**Belgian Flanders and Wallonia, Finland, Germany, Greece, Ireland, Luxembourg, Spain** confirmed that Article 3(1) has been transposed into their national laws. Respectively they refer to:

- Articles 5.2.3.2.3 up to and including 5.2.3.2.6 of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995 (altered in 1999) for **Belgian Flanders**;
- Article 4 of the AGW of the 13<sup>th</sup> April 2000 on the specialised incineration and co-incineration of hazardous waste for **Belgian Wallonia**.
- Paragraphs 41-43 of the Law on Protection of the Environment (86/20000), for **Finland**;

- Joint ministerial Decision 2487/4555/1999 (Gov journal 196/B, 8-3-1999) for **Greece**;
- §§ 4 & 10 of Federal Emission Protection Law (FEPL) for **Germany**. The permit procedure is covered in the Ninth Order on execution in the FEPL;
- Integrated Pollution Control for **Ireland**;
- **Luxembourg** refers to the provisions of Regulation of the *grand ducal* of 6 October 1996;
- **Spain** cites Article 3 of the Royal Decree 1217/1997

**Austria, Denmark, France, Italy, Netherlands, Portugal, Sweden and the United Kingdom** refer to their respective national legislation and give details on general measures they have taken to comply with Article 3(1) of the Directive:

**Austria** transposed the Directive in the Order on the incineration of dangerous wastes, BGBl. II no. 22/1999 (abbrev. BMUJF-VerbVO). The §1 (1) specifies the aim of the order which is the protection of the life and the health of humans and the environment from the damaging effects, which can occur as a result of the incineration of dangerous wastes. The §1 (2) mentions that incineration plants are to be operated in every case so as to keep their emissions to the environment as low as possible.

Reference is also made to The Order on the Incineration of Dangerous Wastes in Industrial Operation Plants, BGBl. II no. 32/1999 (abbrev. BMWA-VerbVO), which provides general measures in the framework of the official industrial Operational Works Permit Procedure. This is provided for the prevention of environmental pollution. (See in particular the Protection Interests in accordance with § 74, para. 2, GewO 1994: as well as the permit criteria in §§ 77 and 77a GewO 1994).

**Denmark** refers to its Environmental Protection Act, which covers the requirements set in the Article 3 (1) of the Directive. Under the Environmental Protection Act, a company must apply for environmental approval before it operates. The application must contain detailed information on the location, design, production processes, use of the best available technology (BAT), pollution-restricting measures broken down for each media, waste and proposals for conditions and self-regulation and concerning circumstances following stoppages and accidents. These regulations also apply to companies that are covered by this Directive, as they must have this environmental approval.

In **France**, Article 3 of the *arrêté ministériel* of the 10<sup>th</sup> October 1996 specifies that the installations have to be designed in order to allow a level of incineration as complete as possible. The Article also specifies that incineration operators have to minimise the emissions into the environment, by implementing clean technologies and by using the best available technologies at an economic reasonable cost, and taking into account specific characteristics of the surrounding environment.

In **Italy** permits for the construction and operation of waste treatment plants are governed by Articles 27 and 28 of Legislative Decree n° 22/97. This decree was issued *in application of Directives 91/156/EEC on waste, 91/689/EEC on hazardous waste and 94/62/EC on packaging and packaging waste*. The permit application procedure defined in Articles 27 and 28 provides that any proposal for a waste treatment plant must undergo a detailed technical enquiry carried out by the relevant environmental protection and health and safety bodies.

For the proposal to be approved, the relevant town planning and environmental protection regulations in force must be observed. In addition, the proposal must comply with the technical specifications defined in the aforementioned Ministerial Decree n° 124/2000.

**The Netherlands** refer to the Hazardous Waste Incineration Regulations for the content of the necessary requirements for operating incineration plants. Permits for incinerator plants carry requirements on acceptance, structure, incineration, permissible emissions, measurement and recording requirements as well as requirements on residues.

**Portugal** cited Article 4(1) on *Incineration plants* and Article 7 on *Permit conditions*, of Decree-Law 273/98. Incineration plant must be designed, equipped and operated in such a way that adequate preventive measures are taken against environmental pollution. Permits must only be granted for incineration plant if it is demonstrated that they are designed and will be equipped and operated to take account of adequate environmental precautions and the prescribed requirements.

In **Sweden**, incineration plants that are covered by the Directive and therefore also the Swedish Regulation on the incineration of hazardous waste must be subject to an individual permit assessment. This assessment covers aspects relating to permissibility, location and precautionary measures that are necessary in order for the activity to be permissible. The assessment is carried out in accordance with Chapter 9 of the Swedish Environment Act (formerly in accordance with the Environmental Protection Act). The Regulation on the incineration of hazardous waste represents a general Directive for environmentally harmful activities in accordance with Chapter 9 of the Environment Act. It therefore applies in addition to the conditions that are laid down for each activity in the permit assessment in accordance with Chapter 9 of the Environment Act.

#### **United Kingdom: England and Wales**

Incineration plants are authorised under Part I of Environmental Protection Act 1990 (EPA90) or permitted under the Pollution Prevention and Control Act 1999 and regulations and directions by the Secretary of State (SoS).

Plants incinerating hazardous waste are not permitted to operate in England or Wales except in accordance with conditions contained in an authorisation permit granted by the Environment Agency (“EA”). Permits for plants already authorised to burn hazardous waste were changed by 30<sup>th</sup> June 2000 to reflect the requirements of the Hazardous Waste Incineration Directive (“HWID”). Plants not authorised to burn hazardous waste were required to apply for a permit to the EA and were only authorised to burn hazardous waste where these applications demonstrated that the plant was designed, equipped and would be operated in accordance with:

- best available techniques not entailing excessive cost (BATNEEC) so as to prevent releases into the environment or minimise and render harmless any pollution from the process;
- the Waste Framework Directive, in particular Article 4 of that Directive which requires waste to be recovered or disposed of without endangering human health or the environment;
- the Hazardous Waste Directive; and
- the HWID.

In both circumstances, where permission to incinerate or continue incinerating hazardous waste has been granted, the process operator must have demonstrated that:

- the plant is designed, equipped and will be operated to meet the requirements of HWID Articles 5 to 12 ;
- for co-incinerators, burners are located and waste fed in such a way as to achieve a level of incineration as complete as possible; and
- the emission limit values prescribed by the HWID will be met, (showing calculations as laid down in Annex II if required).

Permits to operate such processes specify:

- types and quantities of hazardous waste which may be treated ;
- total incinerator capacity;
- for co-incinerators, the minimum and maximum mass flows, lowest and maximum net calorific values and maximum contents of pollutants in hazardous wastes being treated;
- measurement requirements to monitor parameters, conditions and mass concentrations of relevant pollutants;
- sampling and measurement procedures and location of sampling or measurement points; and
- maximum periods of technically unavoidable stoppages, disturbances, or failures of purification or measurement devices during which emission limit values may be exceeded.

Plants incinerating hazardous waste are subject to regular site inspections by the EA. Compliance with the conditions contained in the IPC permits is actively monitored and appropriate enforcement action in accordance with the EA's published policy is taken where conditions are breached.

#### ***United Kingdom: Scotland***

To date the majority of plants the Scottish Environmental Protection Agency (SEPA) has authorised under Part I of EPA90 are plants that were already in operation, hence SEPA knows that they can meet the limits in HWID. Authorisations include requirements of relevant articles of HWID as directed by Secretary of State (SoS).

One new plant was authorised in 1999. Detailed determination of the application indicated that the technical specification of the new plant would meet the requirements of all relevant articles of the HWID. This determination has been extensively documented.

#### ***United Kingdom: Northern Ireland***

The relevant legislation is the Industrial Pollution Control (Prescribed Processes and Substances)(Amendment) Regulations (Northern Ireland) 1999 No 26 and the Industrial Pollution Controls (Hazardous Waste Incineration) Direction (Northern Ireland) 1997 both made under the Industrial Pollution Control (Northern Ireland) Order 1997.

The Department of the Environment's Pollution and Radiochemical Inspectorate confirm that there are no incinerators covered by this Directive in ***Northern Ireland***.

#### ***United Kingdom: Gibraltar***

Directive 94/67/EC was transposed by the Public Health Ordinance (Amendment) Ordinance 1998 which amended the Ordinance on Waste and by the Specified Hazardous Waste (Incineration Plants) Ordinance 1998. Under this, incineration of hazardous waste as defined in the Directive became subject to licensing. Before a licence is considered it must go

through the specified application procedure. Consideration of the application is then subject to the provisions of section 192(D)(3) to (6) of the Public Health Ordinance and the Specified Hazardous Waste (Incineration Plants) Ordinance to ensure that the appropriate measures against environmental pollution are applied.

There are no hazardous waste incinerators covered by this Directive in *Gibraltar*.

**1.(b) If this information is available, indicate the number of permits issued in accordance with Article 3(1) and associated operating capacities**

*Information on the number of permits issued and associated operating capacities is summarised in Table 1. Permits have been issued by Austria, Belgian Flanders and Wallonia, Denmark, Finland, Greece, Ireland, Netherlands, Spain, Sweden and the United Kingdom (England and Wales and Scotland). In the case of Denmark, information was supplied on one plant only. No permits have been issued by Germany, Luxembourg, Portugal and the United Kingdom for Northern Ireland and Gibraltar.*

**Table 1: Number of permits and associated operating capacities**

Member State	Permits issued	Estimated authorised capacity	Note
<i>Austria</i>	5	110,000 t/y	Co-incineration plants are not included
<i>Belgian Flanders</i>	4	174,000 t/y	
<i>Belgian Wallonia</i>	6	no information	
<i>Denmark</i>	Info only on 1 plant	90,000 t/y	The county council is the competent authority and there is no obligation to report to the State authority
<i>Finland</i>	2	295,000 t/y	
<i>France</i>	No info	-	
<i>Germany</i>	0	-	
<i>Greece</i>	11	12,702 t/y	Assuming plants are running 24 hours a day, 365 days a year
<i>Ireland</i>	7	218,131 t/y	Assuming plants are running 24 hours a day, 365 days a year
<i>Italy</i>		497,174 t/y	Total figure for 1998
<i>Luxembourg</i>	0	-	
<i>Netherlands</i>	7	391,000 t/y	No breakdown information has been provided
<i>Portugal</i>	0	-	Co-incineration of hazardous waste covered by 94/67/EC is not practised in Portugal.
<i>Spain</i>	7	63,293 t/y	
<i>Sweden</i>	8	67,906 t/y	Assuming plants are running 24 hours a day, 365 days a year, and including co-incineration plants
<i>United Kingdom</i>			
<i>England &amp; Wales</i>	27	unknown	
<i>Scotland</i>	3	25,000m <sup>3</sup> /y, 4,500m <sup>3</sup> /y, 9,000t/y	
<i>Northern Ireland</i>	0	-	No incineration permits issued
<i>Gibraltar</i>	0	-	No incineration permits issued

**2.(a) What requirements in general for the granting of permits for co-incineration have been introduced in accordance with Article 3(4).**

*Belgian Flanders, Denmark, Finland, Ireland, the Netherlands and the United Kingdom apply the same regulations as for incineration. Austria, Belgian Wallonia, France, Germany, Greece, Italy, Luxembourg, Portugal, Spain and Sweden have specific regulations drawn up for co-incineration. These Member states have supplied details of their specific legislation.*

In **Belgian Flanders, Denmark, Ireland, Finland, The Netherlands and The United Kingdom** permits for co-incineration impose the same conditions as those imposed on incineration plants. Therefore there is no specific regulation on co-incineration in these Member States.

In **Austria, Belgian Wallonia, France, Germany, Greece, Italy, Luxembourg, Portugal, Spain and Sweden** specific regulations have been drawn up with respect to the granting of permits for co-incineration. These Member States refer to their own national texts and state that they are in accordance with Article 3 (4):

- In **Austria**, the provisions laid down in Article 3(4) are encompassed within § 4, para. 2 and § 5, para.s 1 and 2 of the BMUJF-VerbVO. In compliance with Article 7 (Emission limit values) emissions to be measured are specified together with measurement frequencies in accordance with § 11 para 5 of the BMUJF-VerbVO .
- In **Belgian Wallonia**, provisions are laid out in Article 47 para's 1°, 2° of the AGW of the 13<sup>th</sup> April 2000 on the specialised incineration and co-incineration of hazardous waste.
- In **France**, the Title III of the *arrêté ministériel* of the 10 October 1996 defined the applicable dispositions to the new co-incineration's installations and the chapter X of the title IV manages the compliance of the existing co-incineration installations;
- In **Germany** the requirements on Permit and Operation of Co-incineration Plants are set in the framework of the permit procedure complying with the 9<sup>th</sup> and 17<sup>th</sup> Orders on the execution of FEPL. The 9<sup>th</sup> FEPL Order contains detailed requirements (in § 4a, para. 2) and these are provided in the detailed response provided in Appendix 1.
- In **Greece**, Joint Ministerial Decision 2487/455/1999 (Gov Journal 196/B, 8-3-1999) lays down measures and conditions for co-incineration (Article 5B). Approval of Environmental terms and a disposal permit are required for the co-incineration of hazardous waste, as provided by article 7 of Joint Ministerial Decision 19396/1546 (Gov Journal 604/B, 18-7-1997);
- In **Italy** the following was noted: Without prejudice to that stated in the preceding paragraph concerning plant permits in general, and concerning co-incineration plants in particular, the authorisation procedure is best defined by Article 5 of Ministerial Decree n° 124/2000. The technical specifications of hazardous waste co-incineration plants are also described in Appendix 2, which states that *"the technical standards and emission limit values for incineration plants where the co-incineration of hazardous waste takes place must be such that the heat from these processes does not exceed 40% of the total heat actually produced by the plant in any operating phase"*.
- In **Luxembourg**, regulations equivalent to those of the Directive have been set in Article 3.4 of the regulation of the grand-ducal of 6 October 1996;
- In **Portugal** co-incineration of hazardous waste covered by Directive 94/67/EC is not practised. However, legislative measures have been adopted to guarantee compliance

with the requirements laid down in Article 3.4 of Directive 94/67/EC via Article 7(6) and (7) – *Permit conditions*, of Decree-Law 273/98.

- *Spain* refers to Article 17.2 of Royal Decree 1217/1997.
- In *Sweden*, regulations equivalent to those of the Directive have been introduced in Sections 6-9 of the Swedish Regulation.

### ***Ireland***

No permits for co-incineration of hazardous waste have been issued. Insufficient information is provided to enable assessment of whether or not special requirements regarding such co-incineration exist.

### ***United Kingdom: England and Wales***

Where authorisation to operate a plant incinerating hazardous waste has proceeded, the operator must have demonstrated that:

- the hazardous waste burners are located and the waste fed so as to achieve as complete a level of incineration as possible; and
- the emission limit values prescribed by the Directive will be met, showing calculations as laid down in Annex II.
- In the case of cement and lime processes, the requirements of the EA's Substitute Fuels Protocol have been followed for trial burning of hazardous waste.

In England and Wales, these plants are authorised under Part I of Environmental Protection Act 1990 (EPA90) or permitted under the Pollution Prevention and Control Act 1999 and regulations and directions issued by the Secretary of State (SoS).

### ***United Kingdom: Scotland***

To date SEPA has only authorised plants under Part I of EPA90 that were already in operation, hence SEPA knows that they can meet the limits in HWID. Authorisations include requirements of relevant articles of HWID as directed by SoS.

### ***United Kingdom: Northern Ireland and Gibraltar***

There are no incineration plant covered by this Directive in *Northern Ireland* or *Gibraltar*.

For *Northern Ireland*, the relevant legislation is the Industrial Pollution Control (Prescribed Processes and Substances) (Amendment) Regulations (Northern Ireland) 1999 No 26 and the Industrial Pollution Controls (Hazardous Waste Incineration ) Direction (Northern Ireland) 1997 both made under the Industrial Pollution Control (Northern Ireland) Order 1997.

In *Gibraltar*, the relevant legislation is the Public Health Ordinance (Amendment) Ordinance 1998 which amended the Ordinance on Waste and by the Specified Hazardous Waste (Incineration Plants) Ordinance 1998.

**Table 2 Summary of responses to Question 2.(a)**

Member State	Special measures taken for co-incineration?	National law quoted?	Details
<i>Austria</i>	✓	✓	Specific regs drawn up for co-incineration with detail on substances and amounts to be verified
<i>Belgian Flanders</i>	✗	✗	Same as regs for incineration
<i>Belgian Wallonia</i>	✓	✓	Specific regs drawn up for co-incineration
<i>Denmark</i>	✗	✗	Same as regs for incineration
<i>Finland</i>	✗	✗	Same as regs for incineration
<i>France</i>	✓	✓	Specific regs drawn up for co-incineration
<i>Germany</i>	✓	✓	Specific regs drawn up for co-incineration with detail on substances and amounts to be verified
<i>Greece</i>	✓	✓	Specific regs drawn up for co-incineration
<i>Ireland</i>	✗	✗	Same as regs for incineration
<i>Italy</i>	✓	✓	Specific regs drawn up for co-incineration with detail on heat capacities
<i>Luxembourg</i>	✓	✓	Specific regs drawn up for co-incineration
<i>Netherlands</i>	✗	✗	Same as regs for incineration
<i>Portugal</i>	✓	✓	Specific regs drawn up for co-incineration
<i>Spain</i>	✓	✓	Details given in national law
<i>Sweden</i>	✓	✓	Specific regs drawn up for co-incineration
<i>United Kingdom</i>	✓	✗	No detail given

**2.(b) Have exemptions to the percentage required by Article 3(3) been granted during the period of six months after the start of operation in accordance with Article 3(4)?**

*No Member States granted any exemptions in accordance with Article 3(4).*

**2.(c) If the answer to (b) is ‘yes’, state the reasons why?**

*Not applicable.*

**2.(d) If this information is available, indicate the number of permits and the authorised total volume of waste co-incinerated in accordance with Article 3(3).**

*Austria, Germany, Greece, Spain, Sweden, United Kingdom for England and Wales and Scotland have reported issuing permits in accordance with Article 3(3). Belgian Wallonia, Finland, Ireland, Luxembourg, Netherlands, Portugal and United Kingdom for Northern Ireland and Gibraltar have reported that no permits have been granted. No information to this question was provided by Belgian Flanders, Denmark and France. Italy responded that the data are not fully available.*

**Table 3: Number of permits and volume authorised in accordance with Article 3(3)**

Member States	Permits issued	Estimated Volume Authorised	Note
<i>Austria</i>	3	No information	Two cement plants and one chemical plant
<i>Belgian Flanders</i>	No information	No information	No precise data on exact number of granted permits
<i>Belgian Wallonia</i>	0	-	
<i>Denmark</i>	No information	No information	
<i>Finland</i>	0	0	
<i>France</i>	No information		
<i>Germany</i>	7	No information	
<i>Greece</i>	2	1363 t/y	data for the year 2000
<i>Ireland</i>	0	0	
<i>Italy</i>	-	-	Data not fully available.
<i>Luxembourg</i>	0	0	
<i>Netherlands</i>	0	0	
<i>Portugal</i>	0	0	No co-incineration
<i>Spain</i>	1	66,000 t/y	Includes non-dangerous wastes
<i>Sweden</i>	5	27250 t/y	No data for two of the five plants
<i>United Kingdom</i>		NA	
<i>England &amp; Wales</i>	6		no data for England & Wales
<i>Scotland</i>	1	43,000 t/y	
<i>Northern Ireland</i>	0	-	No incinerators here
<i>Gibraltar</i>	0	-	No incinerators here

### 3. What Measures in general have been taken in accordance with Article 4 to ensure the public access to the information laid down in that Article

*All Member States confirmed that public access to permit applications and authorisations is free. In addition, Austria, Belgian Flanders, France, Germany, Greece, Ireland, Luxembourg, Sweden and the United Kingdom provide free access to emissions monitoring results and operational details of the plant. The responses from Belgian Wallonia, Denmark, Finland, Italy, the Netherlands, Portugal and Spain are not precise about public access being free on monitoring results and the other aspects of the operating of the plant. Most Member States quoted national laws. The UK and Ireland also state where the information for a permit application is published in the media.*

***Austria, Belgian Flanders, France, Germany, Greece, Ireland, Luxembourg, Sweden and the United Kingdom*** responded that public access to information is free concerning the process of the permit application and decision but also concerning the operating of the potential plant. In particular, they specify free access on the results of monitoring emissions of pollutants, and changes on the operating of the plant. These Member States also responded that Article 4 has been transposed into their national law, specifically:

- ***Austria*** refers to the Environmental Information Law, encompassing data from incineration plants. Anybody can make a request to the authority and ask for environmental data. The authority has to give this data - mainly free of charge.

Additionally the operator is required to provide the public with information on monitoring results.

- **Belgian Flanders** refers to Chapter IX of the Flemish Regulation on Environmental Permits of 6 February 1991 concerning free public access to permit application, altered in 1999. It refers to Article 5.2.3.1.8 of the Flemish Government Decree which mentions that all measurement results have to be sent to the local authority of the area in which the plant is located and that it is available to the public;
- **France** refers to the decree n° 77-1133 of the 21 September 1977, providing for public access to information during the permit application procedure and following permit authorisation. Article 33 of the *arrêté ministériel* of the 10<sup>th</sup> October 1996 details information that must be presented by the operator, annually, to the local authorities. This information includes details of the quantity and origin of wastes burned, pollutant emissions, and details of any accidents. The operators are also required to send a copy of this information to the local commission of information and supervision, if it exists.
- **Germany** refers to §10 para. 3 or § 10 para. 7 and 8 of the FEPL concerning the information to public for permit application and decisions. § 18, § 13 p.2 and § 10 p. 3 of the 17<sup>th</sup> order on the execution of the FEPL specifies that the operator is required to provide the public with information on monitoring equipment and results and incineration conditions.
- In **Greece**, Article 4 is transposed into Joint ministerial Decision 2487/455/1999 (Gov Journal 196/B, 8-3-1999) (article 5 A (3)) which provides for public access to applications for the approval of environmental terms and for disposal (incineration) permits, to the decisions of the competent authorities thereon and to the results of checks, in accordance with the provisions of Joint Ministerial Decisions 75308/5512/1990 and 77921/1440/1995 on freedom of public access to information concerning the environment.
- **Ireland** does not cite national texts but explains that each application is advertised locally/nationally at the time of application. The proposed determination and final determination and a site notice is erected at the facility notifying the public of the application. All applications, proposed determinations and licensing including results of self-monitoring and monitoring by the EPA are available to the public at the Agency's HQ and Regional Offices and at the licensed site. Conditions in the licence require that there is a public access to Information Programme in place on each site and the records must be maintained on-site for seven years.
- In **Luxembourg**, application for authorisation is subject of a public inquiry in accordance with the provisions of the legislation on classified installations. In case of an authorisation, the permit details are forwarded to the district where they can be consulted by the interested parties. Notice of permit application and permit issued are published. Moreover, permit applications and decision taken are made available to the public in accordance with Law of 10 August 1992 concerning the freedom of access to information regarding the environment.
- **Sweden** mentions that all public documents are free access to public in accordance with the Swedish principle of public access to official records established in the Constitution.
- **United Kingdom: England & Wales**. Applications for permits have to be published in the London Gazette so that the public is informed and may comment. Public registers of permitted activities within a given locality are kept in the appropriate EA office. Any member of the public may view them free of charge. The registers contain full copies of all permit documents issued by the EA. These include the complete set of documents comprising the permit application. The operator's monitoring data that is supplied to the EA is also placed on the public register together with the results of independent

monitoring requested by the EA together with details of any enforcement activity that the EA may, from time to time, be required to pursue.

- **United Kingdom: Scotland.** Applications for permits have to be published in the Edinburgh Gazette and in at least one newspaper circulating in the locality in which the installation will be operated so that the public is informed and may comment. Public registers of permitted activities within a given locality are kept in the appropriate SEPA office. Any member of the public may view them free of charge. The registers contain all particulars of permits granted by SEPA, as well as all particulars of documents comprising the permit application and monitoring information obtained by virtue of the permit. Certain information in relation to enforcement notices and relevant convictions is also contained on the public register.
- **United Kingdom: Northern Ireland.** Applications for permits have to be published in the Belfast Gazette. Public registers of permitted activities within Northern Ireland are kept in Environment and Heritage Service Offices in Belfast. Any member of the public may view them free of charge. The registers contain full copies of all permit documents issued by the Chief Industrial Pollution Inspector including the permit application, monitoring data and details of any enforcement activity.
- **United Kingdom: Gibraltar.** Applications for permits have to be published in the Gibraltar Gazette and in at least one newspaper circulating in Gibraltar so that the public is informed and may comment. A register of permits containing details of any permits issues and conditions or obligations attached must be kept. This register is open to members of the public. The public can also seek information on the results of any monitoring under the provisions of the Public Health (Freedom of Access to Information on the Environment) Rules.

**Belgian Wallonia, Denmark, Finland, Italy, the Netherlands, Portugal and Spain** responded that public information and access to permit applications is free but they are not precise about public access being free on monitoring results and the other aspects of the operating of the plant. The measures include publication of permit application and permit authorisation in the main newspapers and that a copy of the permit is available from the permit authority, or/and the local council where the plant is located, and/or the like:

- **Belgian Wallonia** refers to the Décret of the 13<sup>th</sup> June 1991 concerning freedom of access to environmental information.
- **Denmark** refers to the Environmental Protection Act.
- **Finland** refers paragraph 38 and 54 on the Law of Protection of Environment, which follows the national law on Publicity of Actions of Authorities (621/1999).
- In **Italy**, Article 7 of Legislative Decree n° 124/2000, states, "*permit applications and the relative decisions of the relevant regional or provincial authorities, in addition to the outcome of tests required under Appendices 1 and 2 of the present decree, are made accessible to the public under the conditions and in accordance with the procedures laid down by Legislative Decree n° 39 of 24 February 1997*".
- **The Netherlands** refers to section 3.6 of the General Administrative Law Act and to the Openness of Administration Act for requests of permits.
- In **Portugal** legislative measures have been adopted to ensure the public access to the information laid down in Article 4 of Directive 94/67/EC via Article 18 – *Duty of information*, of Decree-Law 273/98, particularly point 3. Article 18(3) – Licence applications and the respective decisions by the competent authorities, as well as the results of the emission control provided for in Article 13 of this document, must be

accessible to the public in accordance with the terms of the legislation applying to the right of access to documents in the possession of the Public Administration.

- **Spain** refer to Article 15 of the Royal Decree 1217/1997.

**4.(a) What measures in general to prevent or reduce negative effects on the environment from delivery and reception of waste have been taken in accordance with Article 5?**

*All Member States have implemented measures to reduce the effects from delivery of waste and all Member States refer to national laws. Austria, Germany, Greece, Ireland, Italy, Portugal and the United Kingdom provided specific details of measures for the delivery and reception of wastes. These included the requirement to present the physico-chemical, safety and toxicological data on the waste as well as storage methods, sampling and analysis of the waste and documentation procedures.*

**Belgian Flanders and Wallonia, Denmark, Finland, France, Luxembourg, Netherlands and Sweden** refer to their own national texts for measures to be taken concerning the conditions and reception of waste as to prevent or reduce negative effects on the environment in accordance with Article 5:

- **Belgian Flanders** refers to Articles 5.2.3.2.1 and 5.2.3.2.2 of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995;
- **Belgian Wallonia** refers to Articles 9, 10, 11 and 12 of the AGW of the 13<sup>th</sup> April 2000 on the incineration and co-incineration of hazardous waste.
- **Denmark** replied that operators must use the regulations laid down in Article 5 of the present EC Directive;
- **Finland** refers to government decision 842/1997 paragraphs 5/7;
- **France** refers to Chapter V of the *arrêté ministériel* of the 10<sup>th</sup> October 1996;
- In **Luxembourg**, the general measures provided for in Article 5 of the Directive have been taken up by Article 5 of the regulation of the *grand-ducal* of 6 October 1996.
- **Netherlands** refers to section 1 of annexes I and II of the Hazardous Waste Incineration Regulations;
- **Spain** refers to Articles 4, 5 and 6 of the Royal Decree 1217/1997;
- **Sweden** refers to Section 10-12 of the Swedish Regulation.

**Austria, Germany, Greece, Ireland, Italy, Portugal and the United Kingdom** provided details of the measures to be taken.

**Austria**

The works operator is only allowed to accept the dangerous wastes when the following waste description is to be provided by the (waste) supplier (§ 6, para. 1 BMUJF-VerbVO, § 4 Z 1 BWA VerbVO)

- Physical characteristics
- Chemical composition and other specifications / details, insofar as these are necessary for the determination of the suitability for the incineration process.
- Relevant toxic characteristics of the wastes.
- Substances which should not be mixed with the wastes
- Safety measures for the handling of wastes.

The works operator has to put the following checking measures in place (§ 6 para. 3 & 4 BMUJF-VerbVO, § 4 Z 2 BMWA-VerbVO):

- Checking of the accompanying paperwork, e.g. the accompanying waste dock slip in accordance with § 19 AWG or the accompanying notification slip in accordance with § 35a AWG;
- Taking representative samples; (wastes which could present a danger within and outside of medical areas in accordance with ÖNORM S 2104 are excepted)

The samples are to be kept for six months after the incineration of the respective waste (BMWV-VerbVO: one month). The BMUJF-VerbVO specifies the storing of the analysis results for the length of one year (§ 6 para. 6).

### ***Germany***

Hazardous waste incineration plants are to be operated (after § 3 p. 6 of the 17<sup>th</sup> FEPL) to prevent the release of toxic substances into the ground or groundwater. A sufficiently measured storing capacity and sufficient cleaning capacity must be kept for polluted water. In addition, § 3 p. 1 requires all works for the incineration of solid substances, wastes are to be stored in bunker where the air pressure is to be kept below atmospheric air pressure through extraction. The extracted air is to be fed into the furnace. Liquid substances are to be stored in closed, high pressure-resistant containers according to § 3 p.5; the gas pendulum technique or the displacement air is to be used when filling. Open transfer stations are to be equipped with an air extraction unit. The displacement air from containers, as well as extracted air, is to be fed into the furnace. In regard to the acceptance procedure reference is made to the legal waste proof procedure with prior- and continual control and to the TA Abfall with respect to entrance controls (Checking of the declaration analysis through identification analysis).

### ***Greece***

Joint Ministerial Decision 2487/455/1999 (Gov Journal 196/B, 8-3-1999) (article 8) obliges operator of the plant to take all necessary measures concerning the delivery and reception of waste. Details of the waste are provided and a contract is concluded before the waste is accepted from the producer who is holding it. When the waste does not conform with the recipient's requirements it is sent back.

### ***Ireland***

Almost all licensed facilities deal only with in-house waste arisings. One licence (facility has not yet commenced operation) allows the import of hazardous waste from a specified licensed plant. A condition in the licence requires that waste for incineration is analysed, and records of quantities of waste are maintained. The handling, transportation, storage and recording of all waste disposal operations on-site are subject to conditions which require that the operation is carried out in a manner which does not adversely affect the environment. In addition, waste for incineration not operating on site is subject to SI No 147 of 1998 Waste Management (Movement of Hazardous Waste) Regulations.

***Italy*** provided the following. The waste delivery and reception procedures are described in Appendix 1, subparagraph N and Appendix 2, sub-appendix 2, subparagraph I of Ministerial Decree n° 124/2000. It is stipulated that, prior to reception of the waste, the manager should be in possession of a description of the waste from a physical and chemical point of view, as well as a description of the nature of the hazard. Upon reception, the quantity of waste should be verified and the documents required by law inspected. If necessary, samples should then

be taken for subsequent testing and conserved for at least one month. The possibility of exemption is granted only for plants that incinerate or co-incinerate at the production site, provided that the same safety levels are observed.

In **Portugal** legislative measures have been adopted to prevent or reduce negative effects on the environment from delivery and reception of waste in accordance with Article 5 of Directive 94/67/EC via Section II (Operation of incineration plant), particularly Article 8 – *Reception of waste*, of Decree-Law 273/98. In addition, the provisions of paragraph c) of Article 8(3) of Decree-Law 273/98, require the operator to check compliance with Regulation 335/97, of 16 May, which lays down the rules for transporting waste within the national territory. Under this Regulation, waste must be accompanied by information setting out the characteristics and classification of the waste.

#### ***United Kingdom: England and Wales***

Permits to operate processes incinerating hazardous waste require that the waste arrives with information covering:

- its physical and as far as possible, chemical composition;
- its hazard characteristics;
- other information necessary to assess its suitability for incineration;
- substances with which it cannot be mixed; and
- handling precautions.

Such permits require that procedures are in place to confirm the information by:

- checking that the quantity is as declared by the consignor;
- checks of hazardous waste (or trans-frontier shipment) consignment notes and any locally agreed consignment information documentation; and
- where appropriate, taking representative samples – as far as possible before unloading – to verify conformity with the description provided and to enable the inspector to identify the nature of the wastes treated. Samples are to be kept for at least one month after incineration.

#### ***United Kingdom: Scotland***

Authorisations include limits on the type and composition of waste and there is need to check the composition of the waste before receipt, and also requirements of Special Waste regulations (these transpose the requirements of the hazardous waste directive) apply.

***In England, Wales and Scotland***, plants are authorised under part I of Environmental Protection Act 1990 (EPA90) or permitted under the Pollution Prevention and Control Act 1999 and regulations and directions issued by the Secretary of State (SoS).

#### ***United Kingdom: Northern Ireland***

There are no permits issued for the incineration of hazardous waste. If there were then the relevant legislation is the Industrial Pollution Control (Prescribed Processes and Substances) (Amendment) Regulations (Northern Ireland) 1999 No 26 and the Industrial Pollution Controls (Hazardous Waste Incineration ) Direction (Northern Ireland) 1997 both made under the Industrial Pollution Control (Northern Ireland) Order 1997.

#### ***United Kingdom: Gibraltar***

There are no permits issued for the incineration of hazardous waste. If there were then the provisions of Article 5 (as implemented by section 9 of the Specified Hazardous Waste (Incineration Plants) Ordinance 1998 would be applied.

**Table 4 Summary of responses to Question 4.(a)**

Member States	Measures taken?	National law quoted?	Specific details given
<i>Austria</i>	✓	✓	Physical, chemical & toxic characteristics required in paperwork
<i>Belgian Flanders</i>	✓	✓	-
<i>Belgian Wallonia</i>	✓	✓	-
<i>Denmark</i>	✓	✓	-
<i>Finland</i>	✓	✓	-
<i>France</i>	✓	✓	-
<i>Germany</i>	✓	✓	Details on storage procedure and reception areas, extraction of noxious gases etc.
<i>Greece</i>	✓	✓	Physical, chemical & toxic characteristics required in paperwork
<i>Ireland</i>	✓	✓	Information on storage and paperwork
<i>Italy</i>	✓	✓	Physical, chemical & toxic characteristics required in paperwork
<i>Luxembourg</i>	✓	✓	-
<i>Netherlands</i>	✓	✓	-
<i>Portugal</i>	✓	✓	Physical, chemical & toxic characteristics required in paperwork
<i>Spain</i>	✓	✓	-
<i>Sweden</i>	✓	✓	-
<i>United Kingdom</i>	✓	✗	Physical, chemical & toxic characteristics and sampling required in paperwork.

**4.(b) Where available indicate the number of exemptions from paragraphs 2 and 3 of Article 5 granted in accordance with Article 5(4).**

*Germany, Ireland, Italy and Sweden and in the United Kingdom, England and Wales, and Scotland granted exceptions in accordance with Article 5(4). Only Ireland and the United Kingdom, Scotland provided details of the number of exemptions granted. No exemptions were granted by Austria, Belgian Flanders and Wallonia, Denmark, Finland, Greece, Luxembourg, the Netherlands, Portugal, Spain and in the United Kingdom for Northern Ireland and Gibraltar. France provided no response to this question.*

No exemptions have been granted by the following Member States; ***Austria, Belgian Flanders and Wallonia, Denmark, Finland, Greece, Luxembourg, the Netherlands, Portugal, Spain*** and in ***the United Kingdom*** for ***Northern Ireland and Gibraltar***.

Exceptions were granted by the following Member States: ***Germany, Ireland, Italy and Sweden and in the United Kingdom for England and Wales and Scotland***.

In ***Ireland***, nine incinerators were exempted and in ***United Kingdom, Scotland***, two permits make use of this exemption.

For ***France*** there was no response on this question.

**5.(a) Have requirements other than those laid down in Article 6(2) been authorised in accordance with Article 6(4)?**

*France, Germany, Ireland and the United Kingdom have authorised other requirements than those laid down in Article 6(2) and provided details of the number and/or nature of these exceptions, see answer to question 5 (b). Austria, Belgian Flanders and Wallonia, Denmark, Finland, Greece, the Netherlands, Portugal, Spain and Sweden have not authorised exceptions to the requirements of Article 6(2).*

Exceptions were granted in the following countries; **France, Germany, Ireland and the United Kingdom (in England and Scotland only)**, see answer to question 5 (b).

For the following countries no exceptions for incineration plants were authorised; **Austria, Belgian Flanders and Wallonia, Denmark, Finland, Greece, the Netherlands, Portugal, Spain and Sweden.**

**5.(b) If the answer to (a) is 'Yes', give details of the number of cases and for each one give the authorised conditions as well as the results of the verification made.**

*Only France, Germany, Ireland, and the United Kingdom set other requirements other than those laid down in Article 6(2) in accordance with Article 6(4). All these Member States provided details of the number of cases and authorised conditions as well as the results of verifications made. The conditions included changes in one or more of the incineration temperature, oxygen content of the air and the waiting times between injections.*

**France**

An application for exemption has been examined by the superior council of the classified installations, as provided for in the article 6 of the *arrêté ministériel* of the 10<sup>th</sup> October 1996. It related to an internal incinerator on a chemical industrial site that the operator wanted to run with 3% instead of 6% of oxygen content in the gas coming from the combustion of waste. The council gave its consent to this application of exemption, as far as it has been shown that the waste combustion is complete and that there are no impacts on the discharge.

**Germany**

The Federal Government was informed of nine works for the incineration of hazardous wastes by the States (Länder) during the period 1998 to 2000, in which (according to Article 6, para. 4) other requirements than those named in Article 6 para. 2 were permitted. A comprehensive measurement program preceded all changes of permits, by which it was confirmed that no higher emissions were to be expected because of the changed incineration conditions, in particular in PAHs, PHDD/F (=PCDD/F) or PHBs (=PCBs). Detailed information on the incineration works, the permitted conditions and the results of the tests carried out are provided in Appendix 1.

**Ireland**

Reg 546 Eli Lilly

Liquid incinerator 1000 C, 1 second, 2% O<sub>2</sub>

Solid incinerator 1000 C, 1.5 second, 2% O<sub>2</sub>

Verification – Dioxins and furans <0.1 ng/m<sup>3</sup>, in compliance with article 7

### ***United Kingdom: England***

There are 2 cases:

Case 1: Conditions specified in the authorisation are different to those in Article 6(2). A permit condition requires the minimum exhaust gas temperature in the afterburner to be 850°C, except during any 15 minute start-up period, when the minimum afterburner temperature permitted is 600°C. This derogation is subject to the constraint that the HWID emission limits specified must be met under all normal operating conditions including start-up periods.

Case 2: For an incinerator burning hazardous waste with more than 1% chlorinated waste, a series of trials was conducted to demonstrate that there was no deterioration in dioxin and furan destruction efficiency at temperatures down to 900°C, hence that temperature has been set as the lower limit for Article 6(2) purposes.

### ***United Kingdom: Scotland***

There is one plant, it has an authorised residence time of 1.4 seconds. The Scottish Environmental Protection Agency (SEPA) prepared detailed internal procedures for progressing any such requests for derogation from Article 6(2) made by plant operators. This operator notified SEPA of the request to adopt a residence time derogation and applied in accordance with the procedures described above. SEPA reviewed the information submitted and concluded that the request to operate the plant demonstrated that the requirements of Article 7 would be met and that releases of dioxins and furans were significantly lower than the releases expected by applying the precise provisions of Article 6(2).

**Table 5 Summary of responses to Question 5.(b)**

<b>Member State</b>	<b>Summary Of Response</b>
<b><i>France</i></b>	One works granted 3% O <sub>2</sub> instead of 6%
<b><i>Germany</i></b>	9 works with other requirements permitted during 1998-2000.
<b><i>Ireland</i></b>	One works with different O <sub>2</sub> content
<b><i>United Kingdom</i></b>	In England and Scotland for temperature and residence time derogations respectively.

### **5.(c) What measures in general have been taken to comply with Article 6(3)?**

*All Member States have undertaken measures to ensure the correct temperature for incineration. All, except Denmark and Greece cite national laws. Austria, Germany, Italy and the United Kingdom also give details on the method to be followed during start-up and shut-down phases. Extra burners are to be used to maintain the correct minimum temperature for incineration during the start-up and shut-down phases. They are also to be used whenever the temperature drops below the minimum for incineration during the main phase of the process. Austria and Germany also state that systems are to be put in place that prevent the plant from filling up with waste if the minimum temperature has not yet been reached during the start-up phase.*

#### ***Austria***

Incineration plants are to be equipped with burners, which automatically operate in order to guarantee the maintenance of the minimum temperature of the combustion gases (850°C and/or 1100°C) after the previous injection of combustion air. These burners are also to be used during the start-up phase and whilst closing down the plant. They are to be fired with fuel, which can not cause any higher emissions than those resulting when using gas oil. Furthermore, a system is to be provided that prevents the plant from filling up during the start-up phase (up to reaching the minimum temperature), when the temperature is below the minimum; and in cases of unpermissible limit excess (§ 7 para.s 5 & 6 of the BMUJF-VerbVO and §§ 5 & 6 BMWA-VerbVO).

### ***Belgian Flanders***

The measures that are listed in Article 5.2.3.2.3 of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995, updated in 1999.

***Belgian Wallonia*** refers to Article 27 of the AGW of the 13 April 2000 on the specialised incineration and co-incineration of hazardous waste

### ***Denmark***

Compliance with these regulations is an operational requirement. Contravention will result in the imposition of penalties.

### ***Finland***

With respect to the burners, their use and the feeding of the fuel to the combustion chamber are regulated in government decision 842/1997, paragraphs 11 and 12.

### ***France***

The article 6 and 27 of the *arrêté ministériel* of the 10<sup>th</sup> October 1996 take up the obligation to install extra burners, the conditions of functioning of the these burners and the conditions of feeding in waste.

### ***Germany***

It is set in § 4 para. 4 of the 17<sup>th</sup> Order of the FEPL that incineration works are to be equipped with one or more additional burners and these additional burners must be operated with natural gas, liquid gas (LPG), heating oil or other substances (after § 1 para. 3 no. 5) during the start-up phase and a threat of being under the minimum temperature. Above and beyond that it is to be confirmed with automatic equipment in accordance with § 4 para. 5 of the 17<sup>th</sup> Order of the FEPL that;

- The works can not be filled up with material (*to be burnt*) until the minimum temperature is reached in the start-up phase.
- The filling up of the works with material can only continue as long as the minimum temperature is held.
- The filling up is interrupted if an exceedence of a continually monitored emission limit occurs as a consequence of a breakdown or a disturbance to the exhaust gas scrubbing equipment.

It is set in completion with § 4 para. 7 in the 17<sup>th</sup> Order of the FEPL that during the shut-down phase of the incineration process the additional burners must be operated for so long until no more material is to be found in the incineration chamber (furnace) in order to keep to the incineration conditions.

### ***Greece***

The requirements laid down in the specific provisions are incorporated in the environmental terms approval in each case.

### ***Ireland***

Condition in all IPC licences requires that waste shall only be introduced into the incinerator when appropriate operating conditions (minimum specified in schedule 1(i) of licence) have been achieved. Shut down of the incinerator is required where minimum criteria specified in the licence are not met. The operating conditions specified include minimum temperature, residence time and oxygen content.

### ***Italy***

Under Appendices 1 and 2 of Ministerial Decree n° 124/2000, incineration plants are required to have auxiliary combustion systems necessary to ensure the continuous respect of the statutory combustion and emission conditions, as well as a waste supply shutdown system, activated when said conditions are not met.

### ***Luxembourg***

The provisions of Article 6.3 of the regulation of the *grand-ducal* of 6 October 1996 are in accordance with the provisions of Article 6 (3) of the Directive.

### ***The Netherlands***

Requirements relating to these aspects are part of the requirements on construction for the plants concerned. The reader is referred to the construction requirements in section 2 of Annex I of the Hazardous Waste Incineration Regulations.

In ***Portugal*** legislative measures have been adopted to comply with Article 6(3) of Directive 94/67/EC via Article 10 – *Start-up, shut-down and other special circumstances*, of Decree-Law 273/98.

***Spain*** refers to Articles 7.2.b and 7.2.c of the Royal Decree 1217/1997.

### ***Sweden***

Equivalent requirements are laid down in Sections 6-17 of the Swedish Regulation.

### ***United Kingdom: England & Wales***

Permits to operate processes incinerating hazardous waste require that burner support fuel used under the following conditions shall not cause higher emissions than specified in HWID Article 6(3):

- at start-up, until the required minimum incineration temperature has been reached;
- whenever the required minimum incineration temperature is not maintained; and
- whenever continuous measurements show that any emission limit value is exceeded owing to disturbances or failures of the purification devices.

### ***United Kingdom: Scotland***

Requirement for supplementary burners to maintain temperature, constraints placed on secondary fuel composition, and constraint that waste may not be fed until required temperature achieved. These are all included as conditions in authorisations.

### ***United Kingdom: Northern Ireland & Gibraltar***

There were no permits issued for the incineration of hazardous waste in either Northern Ireland or Gibraltar.

In *England, Scotland and Wales*, these plants are authorised under Part I of Environmental Protection Act 1990 (EPA90) or permitted under the Pollution Prevention and Control Act 1999 and regulations and directions issued by the SoS.

In *Northern Ireland*, the relevant legislation is the Industrial Pollution Control (Prescribed Processes and Substances) (Amendment) Regulations (Northern Ireland) 1999 No 26 and the Industrial Pollution Controls (Hazardous Waste Incineration ) Direction (Northern Ireland) 1997 both made under the Industrial Pollution Control (Northern Ireland) Order 1997.

In *Gibraltar*, the relevant legislation is the Public Health Ordinance (Amendment) Ordinance 1998 which amended the Ordinance on Waste and by the Specified Hazardous Waste (Incineration Plants) Ordinance 1998.

**Table 6 Summary of responses to Question 5.(c)**

Member State	Measures taken to comply?	National laws quoted?	Other details
<i>Austria</i>	✓	✓	To be used in start-up and shut- down phases
<i>Belgian Flanders</i>	✓	✓	-
<i>Belgian Wallonia</i>	✓	✓	-
<i>Denmark</i>	✓	✗	-
<i>Finland</i>	✓	✓	-
<i>France</i>	✓	✓	-
<i>Germany</i>	✓	✓	Info on filling up of a works
<i>Greece</i>	✓	✗	-
<i>Ireland</i>	✓	✓	Covered in IPC documents
<i>Italy</i>	✓	✓	Details auxiliary combustion systems
<i>Luxembourg</i>	✓	✓	-
<i>Netherlands</i>	✓	✓	-
<i>Portugal</i>	✓	✓	
<i>Spain</i>	✓	✓	-
<i>Sweden</i>	✓	✓	-
<i>United Kingdom</i>	✓	✓	Details given for England and Scotland about support fuels and their use.

**5.(d) What measures in general in accordance with Article 6(6) have been taken to ensure that the ground level air pollution resulting from emissions is not significant?**

*All Member States have taken measures to ensure correct stack heights to minimise ground-level air pollution and all cite applicable national laws. Austria, Belgian Flanders, Denmark, France, Germany, Greece, Ireland, Italy and the United Kingdom also provided specific references to requirements for stack heights, such as requiring topographical and meteorological information and the use of best available techniques. Denmark, France, Germany, Greece, Ireland and the United Kingdom also referred to techniques and models for calculating stack heights.*

***Austria***

In accordance with §1 para. 2 BMUJF-VerbVO incineration plants are to be operated so that emissions into the environment are kept as low as possible and § 7 para. 8 BMUJF-VerbVO

covers supplementary / complementary regulations about the minimal heights of chimneys stacks. Included are considerations on the location of the plant, topographical and meteorological conditions, the avoidance of disadvantageous effects on neighbours and the avoidance of transporting emissions into other protected areas.

For plants which come under the BMWA-VerbVO:

The maintenance of good air quality is contained in the framework of the official industrial Operational Works Permit Procedure (in accordance with § 77 para. 1 GewO 1994) insofar as protected goods under § 74 para. 2 GewO 1994 may not be damaged by emissions (in particular § 74 para. 2 Z 2 GewO 1994 ensures that there is no significant ground-level air pollution, Article 6, para. 6 of the Directive); In accordance with § 77 para. 3 GewO 1994 the Authorities have to limit emissions of air pollutants in any case to the level of the available technology (see also § 77a para. 1 & 3 Z 1 GewO 1994). Above and beyond this, the appropriate material regulations of the Clean Air Quality Law for Boiler Plants (concerning chimney heights) in the official industrial Operational Works Permit Procedure should be applied when the situation is about a permit or change to a Boiler Plant in the bounds of an industrial operational works.

### ***Belgian Flanders***

There is a mandatory minimum chimney height as set out in Article 5.2.3.1.4 of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995, updated in 1999.

***Belgian Wallonia*** refers to Article 29 of the AGW of the 13<sup>th</sup> April 2000 on the incineration and co-incineration of hazardous waste.

### ***Denmark***

The chimney height must be calculated using an OML calculation, which ensures that the emissions from the chimney can meet established B values.

### ***Finland***

Form of emissions regulated in government decision 842/1997, paragraph 4.

### ***France***

The article 6 and 27 of the *arrêté ministériel* of the 10<sup>th</sup> October 1996 defined the mode of calculation of the stack height and the minimum speed of ejection of gases.

### ***Germany***

Measures were taken in order to avoid significant air pollution as a consequence of the incineration of dangerous wastes, in which (in compliance with the 17<sup>th</sup> Order of the FEPL; Order on Incineration Works for wastes and similarly flammable substances - 17<sup>th</sup> FEPL) exhaust gases are to be cleaned and, according to § 6 of the 17<sup>th</sup> FEPL, are to be vented through one or more chimneys, whose heights are to be calculated after No. 2.4 TA Luft so that the impact to human health and the environment is avoided.

### ***Greece***

The measures concerning this are contained in Joint Ministerial Decision 2487/455/1999 (Gov. Journal 196/B, 8-3-1999) (Article 4 (5)). In addition, environmental terms approval (EPO) is granted only if the environmental impact assessment (EIA) provides scientific

documentation for the case in question. For example, via the use of a combustion gas dispersal model and of scientifically approved methods for calculation of the stack height.

### ***Ireland***

Each IPC licence specifies the discharge point, the minimum stack height, maximum gas volumes to be emitted and emission limit values for relevant parameters. Emission limit values have been set in the licences using the information obtained from modelling of emissions to predict maximum ground level concentrations and in some cases ambient monitoring.

### ***Italy***

Ministerial Decree n° 124/2000 states that off-gas should be removed in a controlled fashion through a stack of sufficient height and at a speed and enthalpy sufficient to encourage the satisfactory dispersion of pollutants in the interests of public health and environmental protection.

### ***Luxembourg***

The provisions of Article 6.6 of the regulation of the *grand-ducal* of 6 October 1996 conform with the provisions of Article 6 (6) of the Directive.

### ***The Netherlands***

Requirements relating to these aspects are part of the requirements on construction for the plants concerned. The reader is referred to the construction requirements in section 2 of Annex I of the Hazardous Waste Incineration Regulations.

In ***Portugal*** legislative measures have been adopted to comply with Article 6(6) of Directive 94/67/EC via Article 9(5) of Decree-Law 273/98.

***Spain*** refers to Article 7.2.d of the Royal Decree 1217/1997.

### ***Sweden***

The design of incineration plants as regards important parameters such as chimney heights, flue gas flow rates and temperatures is part of the permit assessment in accordance with Chapter 9 of the Environment Act.

### ***United Kingdom: England and Wales***

Plants have not been authorised to incinerate hazardous waste unless the operator has demonstrated that design, equipment and operation will prevent significant ground-level pollution and that the stack height is sufficient to safeguard human health and the environment.

### ***United Kingdom: Scotland***

Stacks heights checked to be acceptable using recognised stack height calculations. Also some dispersion modelling carried out.

### ***United Kingdom: Northern Ireland Gibraltar***

There are no permits issued for the incineration of hazardous waste.

In **England, Scotland and Wales**, these plants are authorised under Part I of Environmental Protection Act 1990 (EPA90) or permitted under the Pollution Prevention and Control Act 1999 and regulations and directions issued by the SoS.

In **Northern Ireland**, the relevant legislation is the Industrial Pollution Control (Prescribed Processes and Substances) (Amendment) Regulations (Northern Ireland) 1999 No 26 and the Industrial Pollution Controls (Hazardous Waste Incineration ) Direction (Northern Ireland) 1997 both made under the Industrial Pollution Control (Northern Ireland) Order 1997.

In **Gibraltar**, the relevant legislation is the Public Health Ordinance (Amendment) Ordinance 1998 which amended the Ordinance on Waste and by the Specified Hazardous Waste (Incineration Plants) Ordinance 1998.

Table 7 Summary of responses to Question 5.(d)

Member State	Measures taken to comply?	National laws quoted?	Other details
<i>Austria</i>	✓	✓	Stack heights quoted in national laws and rules should be applied in permits.
<i>Belgian Flanders</i>	✓	✓	Min height set out in national law.
<i>Belgian Wallonia</i>	✓	✓	-
<i>Denmark</i>	✓	✓	Calculation of min stack height given in national law.
<i>Finland</i>	✓	✓	-
<i>France</i>	✓	✓	Calculation of min stack height given in national law.
<i>Germany</i>	✓	✓	Gases to be scrubbed and vented through a stack of min height, given in national law.
<i>Greece</i>	✓	✓	Dispersion models used to calculate stack heights
<i>Ireland</i>	✓	✓	Covered in IPC documents
<i>Italy</i>	✓	✓	Stack of sufficient height to avoid health problems
<i>Luxembourg</i>	✓	✓	-
<i>Netherlands</i>	✓	✓	-
<i>Portugal</i>	✓	✓	-
<i>Spain</i>	✓	✓	-
<i>Sweden</i>	✓	✓	-
<i>United Kingdom</i>	✓	✓	Stack heights set to avoid ground-level pollution with dispersion modelling.

**6.(a) What measures in general have been taken to comply with the requirements laid down in Article 6(5), Article 7(1) and 7(2)?**

*All responding Member States transposed values into their national law. All member States except Denmark, Greece, and Ireland cited national laws. In addition, Austria, Germany and Spain provided specific details of emission limits. These include specific requirements regarding the construction and the operation of incineration plants in a way to avoid exceedence of emissions of substances set by the relevant authority. Measurement details on the determination of limit values of these emissions are provided by the relevant authority. For instance, in Germany, emission of particulates must not exceed a daily average of 10mg/m<sup>3</sup>, and must not exceed half hourly average of 30mg/m<sup>3</sup>. The same approach is used for the other substances, i.e. setting emission limit values on a daily average and emission limit values on an half hourly average.*

In **Austria** the emissions limits values are fixed for stand-alone incineration plants in accordance with § 8 of the BMUJF-VerbVO and the BMWA-VerbVO. The details of the emission limits are provided in Appendix 1.

### ***Belgian Flanders***

The measures that are listed in Article 5.2.3.1.9 of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995, updated in 1999.

**Belgian Wallonia** refers to Article 30, paragraphs 1 and 2 of the AGW of the 13<sup>th</sup> April 2000 on the incineration and co-incineration of hazardous waste.

### ***Denmark***

The values referred to are established as limits for each individual incineration plant. The conditions for the company's self-regulation are laid down in the environmental approval, including the reporting obligation in the event of stoppages or elevated emissions, regardless of the cause. To this must be added the supervisory authority's regular visits to the company. The frequency of these visits depends on the company's operation, but there is at least one visit every other year.

### ***Finland***

Limits for carbon monoxide and substances and compounds emitted to air are regulated in Government Decision 842/1997, paragraphs 13 and 15.

### ***France***

The emission limit values in the air are set by the article 11 of the *arrêté ministeriel* of the 10 October 1996 concerning the installations of incineration.

### ***Germany***

It is set out in the 17<sup>th</sup> Order of the FEPL in compliance with the requirements in Article 6 para. 5 and Article 7 paras 1 & 2 that in accordance with § 4 para. 6 incineration works are to be constructed and operated in such a way that a daily average value of 50mg/m<sup>3</sup> CO and a half-hourly average value of 100 mg/m<sup>3</sup> CO is not exceeded in the exhaust gas. Further, the mass concentration of CO may not exceed a value of 150 mg/m<sup>3</sup> in the exhaust gas for a minimum of 90% of all measurements taken within 24 hours. It is also required in § 5 para 1 that the incineration works are operated so that certain prescribed the following emission limit values are not exceeded. Detailed emission limit values for a range of pollutants are provided in Appendix 1 of this report.

### ***Greece***

The measure consists in the requirement for implementation of the approved environmental terms.

### ***Ireland***

Emission limit values have been set in the licences in accordance with (as a minimum) the levels specified in the Directive

### ***Italy***

The emission limit values for the various types of pollutant are set out in Appendix 1, subparagraph A and Appendix 2, sub-appendix 1, subparagraph A of Ministerial Decree n°

124/2000 for the incineration of hazardous waste and co-incineration of this type of waste respectively.

### ***Luxembourg***

The measures set in Article 6 (5) and in Article 7 (1) and (2) have been transposed by Article 6 point 5 and Article 7 point 1 and 2 of the regulation of the *grand-ducal* of 6 October 1996. Emission limit values for carbon monoxide (CO) concentrations are not to exceed:

- (a) 50 mg/m<sup>3</sup> of combustion gas determined as daily average value;
- (b) 150 mg/m<sup>3</sup> of combustion gas of at least 95 % of all measurements determined as 10-minute average values or 100 mg/m<sup>3</sup> of combustion gas of all measurements determined as half-hourly average values taken in any 24-hour period.

### ***The Netherlands***

Requirements relating to these aspects are part of the requirements on emissions from the plants concerned. The reader is referred to the requirements in sections 4.1 and 4.2 of Annexes I and II and in sections 12(c) and 27 of Annex III of the Hazardous Waste Incineration Regulations.

In ***Portugal*** legislative measures have been adopted to comply with Article 6(5), Article 7(1) and Article 7(2) of Directive 94/67/EC via Article 11(1) – *Emission limit values*, of Decree-Law 273/98.

***Spain*** refers to Articles 7.4 and 8.1 as well as Appendix 1 of Royal Decree 1217/1997 providing detailed emission limit values. Detailed emission limits for a range of pollutants are provided in Appendix 1 of this report.

### ***Sweden***

Regulated in Sections 19 and 21 of the Swedish Regulation.

### ***United Kingdom: England and Wales***

Permits to operate processes incinerating hazardous waste require the plant to be operated to comply with the HWID's release limits to air in respect of particulates, total organic carbon, hydrogen chloride, hydrogen fluoride, sulphur dioxide, carbon monoxide, cadmium, heavy metals and dioxins.

### ***United Kingdom: Scotland***

The requirements of these articles and the limits contained therein are included as conditions with limits in the authorisations.

### ***United Kingdom: Northern Ireland & Gibraltar***

There are no permits issued for the incineration of hazardous waste.

In ***England, Scotland and Wales***, these plants are authorised under Part I of Environmental Protection Act 1990 (EPA90) or permitted under the Pollution Prevention and Control Act 1999 and regulations and directions issued by the SoS.

In ***Northern Ireland***, the relevant legislation is the Industrial Pollution Control (Prescribed Processes and Substances) (Amendment) Regulations (Northern Ireland) 1999 No 26 and the Industrial Pollution Controls (Hazardous Waste Incineration ) Direction (Northern Ireland) 1997 both made under the Industrial Pollution Control (Northern Ireland) Order 1997.

In *Gibraltar*, the relevant legislation is the Public Health Ordinance (Amendment) Ordinance 1998 which amended the Ordinance on Waste and by the Specified Hazardous Waste (Incineration Plants) Ordinance 1998.

**Table 8 Summary of responses to Question 6.(a)**

Member State	Transposed values into national law ?	Cited specific national laws ?	Given actual emission limit figures ?
<i>Austria</i>	✓	✓	✓
<i>Belgian Flanders</i>	✓	✓	X
<i>Belgian Wallonia</i>	No information	✓	X
<i>Denmark</i>	✓	X	X
<i>Finland</i>	✓	✓	X
<i>France</i>	✓	✓	X
<i>Germany</i>	✓	✓	✓
<i>Greece</i>	✓	X	X
<i>Ireland</i>	✓	X	X
<i>Italy</i>	✓	✓	X
<i>Luxembourg</i>	✓	✓	✓
<i>Netherlands</i>	✓	✓	X
<i>Portugal</i>	✓	✓	X
<i>Spain</i>	✓	✓	✓
<i>Sweden</i>	✓	✓	X
<i>United Kingdom</i>	✓	✓	X

**6.(b) What provisions made been made concerning the maximum permissible time periods for stoppages, disturbances or failures of the purification devices or the measurement devices in accordance with Article 12(2) as well as concerning the information without delay of the competent authorities in accordance with Article 12 (1), if the emission limit values laid down in Articles 6 (5), 7 (1) and 7 (2) have been exceeded?**

*All Member States responded that the necessary provisions have been made in their national laws. All Member States except Denmark and Ireland cited specific national laws. In Denmark, a breach on emission limits or on other operations with respect to requirements set initially by the relevant authority results in the imposition of a penalty. In Ireland, there is no provision for the operation of an incinerator where emissions exceed the emission limit values. Austria and Spain specified maximum permissible times for stoppages or failures in their responses. Italy, Ireland and Spain (for co-incineration plant) stated that incineration must cease following an exceedance of emission limits. Only Austria, Germany, Spain and the United Kingdom specified requirements for immediate notification of breached emission limits etc.*

#### ***Austria***

In the case of unavoidable stoppages, electrical disturbances or breakdowns of the exhaust gas scrubbing equipment (§ 15 BMUJF-VerbVO, § 11 BMWA-VerbVO) or of the measuring equipment (§ 15 para. 3 BMUJF-VerbVO) the incineration plant is allowed to continue

operations for a maximum of two hours per such event and sixty hours per year. (BMWA-VerbVO: 30 hours)

The following conditions should however also be adhered to:

- Half-hourly average value for dust of 150 mg/m<sup>3</sup>
- Compliance with the emission limit value for organic carbon.
- Compliance with the operational conditions.
- Compliance half-hourly average value for CO.

The following conditions are to be complied with in the case of limit exceedences in accordance with § 15 para. 2 BMUJF-VerbVO and § 11 para. 1BMWA-VerbVO.

- the filling of waste is to be stopped immediately, and
- the Authorities are to be informed immediately of the exceedence
- the filling can be re-started when it is confirmed that the emission limits will be complied with in further operation.
- After an emission limit exceedence the filling can not be re-started until the corresponding orders of the Authorities are complied with.

### ***Belgian Flanders***

The measures that are listed in Article 5.2.3.1.9 of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995, updated in 1999.

***Belgian Wallonia*** refers to Articles 35, 36, 46 of the AGW of the 13<sup>th</sup> April 2000 on the incineration and co-incineration of hazardous waste.

### ***Denmark***

The provisions of the Directive must be transferred to each individual permit and contravention will result in the imposition of penalties.

### ***Finland***

Actions due to exceeding of the limits and on stoppages were regulated on the government decision 842/1997, paragraphs 25 and 26.

### ***France***

The article 24 of the *arrêté ministeriel* of the 10 October 1996 specifies that the prefectural permit must set a maximum duration of stopping, disturbance or technical failure of the incineration installation, of treating or measuring the aqueous and atmospheric effluents in which the concentrations in the emissions can be higher than the set limited values. The inspection of the classified installations have to be alerted as soon as there is an excess of the limits.

### ***Germany***

It is specified in § 16 para 1 of the 17<sup>th</sup> FEPL that the operator of a works has to inform the responsible authorities immediately when measurements state that the requirements are not being fulfilled for the operation of the works or on the limitation of emissions. The operator has to take the necessary measures immediately for an orderly operation. The responsible authorities make sure through appropriate monitoring measures that the operator carries out his lawful duty for an orderly operation otherwise the works is taken out of operation.

The permission to operate further is additionally ruled / controlled in the main in the permit to operate paperwork in accordance with § 16 para 2 of the 17<sup>th</sup> FEPL. If no emissions data is

transferred directly to the monitoring authorities, it is ruled in the framework of the completed agreement between operator and authority that the entire particular occurrences are reported to the Authorities immediately. Written and oral reports complete the reporting duties.

### ***Greece***

The measure are set out in Article 10 of Joint Ministerial Decision 2487/455/1999 (Gov Journal 196/B, 8-3-1999).

### ***Ireland***

There is no provision for the operation of an incinerator where emissions exceed the emission limit values

### ***Italy***

Ministerial Decree n° 124/2000 states that if measurements show an emission limit value to be exceeded following a malfunction or plant failure, the waste supply to the plant must be suspended immediately and the competent authority alerted in accordance with any agreed procedures set out in the permit. Once the plant has been restored to full operation, the supervisory body should be notified.

### ***Luxembourg***

The provisions of Article 12 (2) and Article 12 (1) of the Directive have been taken up by Article 12.2 and Article 12.1 of the regulation of the *grand-ducal* of 6 October 1996.

### ***Netherlands***

Requirements relating to these aspects are part of the requirements on the plants concerned in the event of the limit values being exceeded. The reader is referred to the requirements in Articles 7.1 and 7.2 of Annexes I and II of the Hazardous Waste Incineration Regulations.

In ***Portugal*** legislative measures have been adopted to comply with Article 12(2) of Directive 94/67/EC via Article 14 – *Exceptional operational circumstances*, of Decree-Law 273/98.

***Spain*** refers to Articles 14 of the Royal Decree 1217/1997. If the measurements show that the emission limit values established in this Royal Decree have been exceeded, the manager will immediately inform the relevant authority. In any event, the installation may not continue to incinerate hazardous waste for longer than four hours without interruption. In addition, the accumulated duration of operation in these circumstances over one year will be less than sixty hours.

In the case of a fault, the manager will reduce or stop operation of the installation in so far as possible until it can resume normally. In the case of the co-incineration installations mentioned in Article 17, the supply of hazardous waste will be stopped.

The total particles content in the emissions must not exceed 150 mg/Nm<sup>3</sup>, expressed as a half-hourly mean value.

### ***Sweden***

Regulated in Sections 41 – 44 of the Swedish Regulation.

### ***United Kingdom: England and Wales***

Permits to operate processes incinerating hazardous waste prohibit feeding of hazardous waste included in the scope of HWID whilst emission standards are exceeded, until the EA (Environment Agency) allows resumption.

All such permits specify absolute time ceilings for stoppages/disturbances, or failure of purification or measurement devices, during which emission limits can be exceeded, in accordance with the conditions contained in HWID Article 12 (2).

Permits require the operator to inform the EA without delay if any emission limit values have been exceeded, to investigate the cause and take remedial action.

***United Kingdom: Scotland***

The requirements of these articles and the limits contained therein are included as conditions with limits in the authorisations.

***United Kingdom: Northern Ireland and Gibraltar***

There are no permits issued for the incineration of hazardous waste.

In ***England, Scotland and Wales***, these plants are authorised under Part I of Environmental Protection Act 1990 (EPA90) or permitted under the Pollution Prevention and Control Act 1999 and regulations and directions issued by the SoS.

In ***Northern Ireland***, the relevant legislation is the Industrial Pollution Control (Prescribed Processes and Substances) (Amendment) Regulations (Northern Ireland) 1999 No 26 and the Industrial Pollution Controls (Hazardous Waste Incineration ) Direction (Northern Ireland) 1997 both made under the Industrial Pollution Control (Northern Ireland) Order 1997.

In ***Gibraltar***, the relevant legislation is the Public Health Ordinance (Amendment) Ordinance 1998 which amended the Ordinance on Waste and by the Specified Hazardous Waste (Incineration Plants) Ordinance 1998.

**Table 9 Summary of responses to Question 6.(b)**

Member State	Provisions made in national law ?	Quoted specific national laws ?	Notes, details
<i>Austria</i>	✓	✓	After failure plant may operate for up to 2 hours longer. Authorities to be informed immediately of exceedances.
<i>Belgian Flanders</i>	✓	✓	-
<i>Belgian Wallonia</i>	✓	✓	-
<i>Denmark</i>	✓	✗	Provisions must be on each individual works permit
<i>Finland</i>	✓	✓	-
<i>France</i>	✓	✓	-
<i>Germany</i>	✓	✓	All data to be reported to authorities immediately
<i>Greece</i>	✓	✓	-
<i>Ireland</i>	✓	✗	Works not to be operated if emissions limits are exceeded
<i>Italy</i>	✓	✓	Incineration to cease if there is an exceedance.
<i>Luxembourg</i>	✓	✓	-
<i>Netherlands</i>	✓	✓	-
<i>Portugal</i>	✓	✓	-
<i>Spain</i>	✓	✓	Exceedances to be reported to the relevant authority. After failure, plant may operate for up to 4 ours. For co-incineration plant, haz. Waste feed must be stopped.
<i>Sweden</i>	✓	✓	-
<i>United Kingdom</i>	✓	✓	All exceedances to be reported to the Environment Agency

**6.(c) Have emission limit values for pollutants other than those laid down in Article 7 been set in national regulations?**

*Austria, Belgian Flanders, Germany, Luxembourg and Spain have additional limit values to those laid out in Article 7 for a variety of substances including mercury and NO<sub>x</sub> in national laws. Belgian Wallonia, Denmark, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal, Sweden and the United Kingdom have not set other emission values.*

For *Austria, Belgian Flanders, Germany, Luxembourg and Spain* other emission limit values for pollutants have been set in national law.

For *Belgian Wallonia, Denmark, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal, Sweden* and the *United Kingdom* no other emission values for pollutants have been set.

**6.(d) If the answer to question (c) is “Yes”, give details of the reasons and indicate for each pollutant the emission value**

*Austria, Belgian Flanders, Germany, Luxembourg and Spain have additional limit values to those laid out in Article 7 in order to ensure consistency with national laws that were in force*

*prior to adoption of the Directive. Of these Member States, Austria, Belgian Flanders, Luxembourg and Spain have set more stringent limit values for oxides of nitrogen and Germany has set stricter limits for emissions of both nitrogen oxides and mercury. Belgian Wallonia, Denmark, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal, Sweden and the United Kingdom have not set other emission values. In Germany, in addition a continual monitoring program of mercury emissions has been set up.*

### ***Austria***

There are additional limits for nitrogen oxides, ammonia and stricter limits for hydrogen fluoride because of the existing standards (LRG-K). These standards are detailed in Appendix 1 of this report.

### ***Belgian Flanders***

An emission limit for oxides of nitrogen of 400 mg/Nm<sup>3</sup> (being the mean of discontinuous measurements) is applied.

### ***Germany***

The Federal Government has undertaken a continual monitoring program of mercury emissions in the framework of the 17<sup>th</sup> FEPL. The monitoring of mercury emissions through continually operating measuring equipment will be looked upon as at the highest standard of measurement techniques. For mercury and its compounds a daily average value of 0.03 mg/m<sup>3</sup> and a half-hourly average value of 0.05 mg/m<sup>3</sup> is to be adhered to in compliance with § 5 para. 1 of the 17<sup>th</sup> FEPL. Nitrogen monoxide and nitrous oxides expressed as NO<sub>2</sub>: daily average 0.20 g/m<sup>3</sup>, half-hourly average 0.40 g/m<sup>3</sup>.

### ***Luxembourg***

Nitrogen monoxide and nitrous dioxide expressed as NO<sub>2</sub>

- daily average 200 mg/m<sup>3</sup> ;
- half-hourly average (A) 400 mg/m<sup>3</sup> (B) 250 mg/m<sup>3</sup> .

These supplementary values have been added in order to ensure consistence with limit values applicable since 1991 for municipal waste incineration installations.

### ***Spain***

NO<sub>x</sub> : 300mg/Nm<sup>3</sup> daily average value in Cataluña (Catalonia).

**Table 10 Summary of responses to Question 6.(c) &6.(d)**

Member State	Have other emission values been set?	Notes, details
<i>Austria</i>	✓	Detailed tables provided in Appendix 1
<i>Belgian Flanders</i>	✓	NO <sub>x</sub> : 400 mg/Nm <sup>3</sup>
<i>Belgian Wallonia</i>	✗	-
<i>Denmark</i>	✗	-
<i>Finland</i>	✗	-
<i>France</i>	✗	-
<i>Germany</i>	✓	Hg: DAV* = 0.03 mg/m <sup>3</sup> HHAV* = 0.05 mg/m <sup>3</sup>
<i>Greece</i>	✗	-
<i>Ireland</i>	✗	-
<i>Italy</i>	✗	-
<i>Luxembourg</i>	✓	NO <sub>2</sub> , DAV 200 mg/m <sup>3</sup> ; HHAV (A) 400 mg/m <sup>3</sup> (B) 250 mg/m <sup>3</sup> .
<i>Netherlands</i>	✗	-
<i>Portugal</i>	✗	-
<i>Spain</i>	✓	NO <sub>x</sub> , DAV 300mg/Nm <sup>3</sup>
<i>Sweden</i>	✗	-
<i>United Kingdom</i>	✗	-

\* DAV = daily average value. HHAV = half-hourly average value.

**6.(e) What provisions have been made for the determination of appropriate emission limit values or guide values in accordance with Article 7 (4)?**

*Austria, Belgian Flanders and Wallonia, Denmark, France, Germany, Greece, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom (England and Wales, and Scotland) have made provisions for the determination of appropriate emission limit values or guide values in accordance with Article 7(4). All these Member States except the United Kingdom, which refers tonational technical guidance, refer to applicable national law. Austria deviates slightly form the Directive by setting fixed values for cement works calculated with respect to the mixing rules. In Italy, values are based on the principle of weighted average between the volume of waste and the total volume incinerated from one side and the associated emission limits for the other side. Finland and Ireland have made no special provisions for the co-incineration of hazardous waste. In the United Kingdom (Northern Ireland and Gibraltar) no provisions are referenced.*

***Austria***

Determination of emission limit values for co-incineration are in accordance with §§ 9 & 10 and section 2 of the BMUJF-VerbVO as well as §§ 8, 12 and 16 and section 4 of the BMWA-VerbVO. Deviations in comparison with 94/67/EC: Fixed values were set for cement works calculated with respect to the mixing rules, which also provided at that time for the forthcoming Commission's suggestion on Directive 2000/76/EC for fixed values for cement works. Specific emission limit values are given in the detailed Austrian response in Appendix 1 of this report (Details in Appendix 1).

***Belgian Flanders***

The measures that are listed in Article 5.2.3.1.5(4) of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995, updated in 1999.

**Belgian Wallonia** refers to Articles 42 and 43 of the AGW of the 13<sup>th</sup> April 2000 on the incineration and co-incineration of hazardous waste.

### **Denmark**

The formula from Annex II to the Directive is part of the Danish Order. The approval must contain information on the smallest and largest mass flows for the waste, the lowest and highest calorific values and the highest content of polluting substances, e.g. PCB, PCP, chlorine, fluorine, sulphur and heavy metals.

The total emission limit (C) must always be calculated so that the emission is limited as much as possible. The values are given in each environmental approval.

### **Finland**

The government decision on hazardous waste incineration (842/1997) contains no specific requirements for co-incineration.

### **France**

The applicable limit values to the installations of co-incineration are detailed in the article 43 of the *arrêté ministeriel* of the 10<sup>th</sup> October 1996.

For hydrogen chloride, hydrogen fluoride, heavy metals, dioxins and furans for which the emissions are essentially coming from the incineration of waste, the *arrêté ministeriel* fixes the same limit values of emissions as those imposed on the specialised incinerators.

### **Germany**

Reference is made to the § 5 para. 3 of the 17<sup>th</sup> FEPL for the co-incineration of wastes. The details of the specific requirements for co-incineration plant are provided in Appendix 1.

### **Greece**

Under Joint Ministerial Decision 2487/455/1999 (Gov. Journal 196/B, 8-3-1999) (Article 5B (2a)), the values are determined in the environmental terms approval.

### **Ireland**

Not applicable. No permits for the co-incineration of hazardous waste have been issued to date.

### **Italy**

The method for determining the emissions contribution of co-incinerated hazardous waste is described in Appendix 2, sub-appendix 1, subparagraph A of Ministerial Decree n° 124/2000. It is based on the principle of weighted average between the volume of waste and the total volume incinerated in view of the emission limits for the various pollutants set out in the decree and the emission limits in force under national laws for conventional fuels.

### **Luxembourg**

Provisions of Article 7 (4) of the Directive have been taken up by Article 7.4 of the regulation of the *grand-ducal* of 6 October 1996.

***The Netherlands***

Requirements relating to these aspects are part of the requirements on the plants concerned in respect of emission requirements and measurement and recording requirements. The reader is referred to the requirements in sections 4.1, 4.3, 4.4 and 5.7 of Annex II of the Hazardous Waste Incineration Regulations.

In ***Portugal*** legislative measures have been adopted to comply with Article 7(4) of Directive 94/67/EC via Article 11(6) – *Emission limit values*, of Decree-Law 273/98.

***Spain***

Reference is made to Annex 2 of the Royal Decree 1217/1997, which contains a formula for calculating appropriate emission limit values for co-incineration.

***Sweden***

The calculation model in Annex 2 to the Directive has been implemented through Annex 2 to the Swedish Regulation. The latter forms the basis for calculations in connection with co-incineration.

***United Kingdom: England and Wales***

National internal EA technical guidance has been issued to all site inspectors on how to undertake the co-incineration calculations that are specified by HWID Annex II.

***United Kingdom: Scotland***

The methodology outlined in Annex II has been used in conjunction with process limits for one plant.

***United Kingdom: Northern Ireland Gibraltar***

The situation does not arise, there is no co-incineration.

**Table 11 Summary of responses to Question 6.(e)**

Member State	Have provisions for co-incineration been made?	Reference to MS national Law?	Details
<i>Austria</i>	✓	✓	Fixed emissions values set for cement works.
<i>Belgian Flanders</i>	✓	✓	-
<i>Belgian Wallonia</i>	✓	✓	-
<i>Denmark</i>	✓	✓	Min and max figures for weight, calorific value and pollutant content to be given
<i>Finland</i>	✗	✓	No specific requirements on co-incineration
<i>France</i>	✓	✓	Same values as for incinerators for special wastes
<i>Germany</i>	✓	✓	Reference to combustion heat performances and CO content
<i>Greece</i>	✓	✓	-
<i>Ireland</i>	✗	✗	No permits for co-incineration have been granted
<i>Italy</i>	✓	✓	Weighted average based on total volume incinerated and associated emission limits
<i>Luxembourg</i>	✓	✓	-
<i>Netherlands</i>	✓	✓	-
<i>Portugal</i>	✓	✓	-
<i>Spain</i>	✓	✓	Formula given for calculation of limits
<i>Sweden</i>	✓	✓	-
<i>United Kingdom</i>	✓	✗	Guidance notes been provided to operators for calculating conditions.

**7. What measures in general have been taken to minimise the wastewater discharges in accordance with Article 8?**

*All Member States have put measures in place to reduce wastewater. However, only Austria, Denmark, Finland, Germany, Greece, Ireland and Italy specifically refer to requirements for minimisation of wastewater discharges in their responses. These Member States impose specific requirements on the construction and operation of incineration plant in order to avoid toxic substances entering the ground or groundwater. For instance, in Germany wastewater is to be collected and discharged.*

***Austria***

Regulations were taken in § 17 BMUJF-VerbVO concerning the equipping of the incineration plant in order to avoid toxic substances getting into the earth, ground- and surface waters. Wastewater is to be collected, treated and discharged as necessary, in accordance with the water regulations.

***Belgian Flanders***

The measures that are set out in Chapter 4.2 of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995, updated in 1999. This chapter deals with the control of surface water contamination.

**Belgian Wallonia** refers to Articles 17, 18 and 19 of the AGW of the 13<sup>th</sup> April 2000 on the incineration and co-incineration of hazardous waste.

### **Denmark**

According to the regulations in the Environmental Protection Act, the drainage of wastewater from companies requires a permit from the competent authority (the county council or municipal board). Before issuing such a permit, the authority must ensure that the company uses the best available technology and that the environmental quality requirements are being complied with.

Directive 76/464/EEC has been implemented in Danish law through an Order. According to this Order, the emission of certain hazardous substances must be limited as much as possible through the use of the best available technology and it should also be ensured that the quality requirements for the affected water areas can be fulfilled. The county council must set adequate conditions for the emissions.

### **Finland**

Issues related to the permit from authority with jurisdiction, general requirements for minimisation of harmful consequences and to water discharges are regulated in government decision (842/1997) paragraphs 16-18. With Law on Protection of the Environment (86/2000) coming to force the Water Court permit referred to in paragraph 6 has been replaced with environmental permit from 1 March 2000.

### **France**

The chapter III of the *arrêté ministériel* of the 10<sup>th</sup> October 1996 concerning the pollution prevention of the water defines among others the applicable emission limit values and the emission monitoring programme which have to be implemented.

### **Germany**

After § 7 of the Household Water Law a permit for the discharging of wastewaters is required from the responsible authorities. A permit after § 7 of the Household Water Law may only be given when the toxic substance content is kept as low as is possible by compliance with the best techniques and procedures available. This is to be recorded in the official water document.

It is set for incineration plants that wastewaters from the exhaust gas scrubbing system have to be handled so that the legal wastewater requirements are fulfilled, particularly in heavy metal reduction. Requirements are also set which take note of the permissible toxic substance concentrations and toxic substance limits to the best of the available technology, in accordance with annex 47 of the Wastewater-Framework-Administrative Regulations.

In addition, § 3 para. 6 of the 17th FEPL requires that incineration works, in particular those that incinerate hazardous waste requiring monitoring are to be constructed and operated so that toxic substances can not enter the ground or groundwater. A sufficient storage capacity has to be provided for polluted waters that have come from electrical disturbances, in combating fires, also including rainwater that has fallen on the works site and water in the waste storage plant. It is sufficient when the fallen water can be checked and treated as necessary before discharge.

### **Greece**

Joint Ministerial Decision 2487/455/1999 (Gov. Journal 196/B, 8-3-1999) (article 6 91) and (2)) stipulates that measures concerning this be included both in the environmental terms

approval and the disposal permit (incineration). In addition, the waste is managed in accordance with Joint Ministerial Decision 19396/1546 (Gov. Journal 604B, 18-7-1997) which lays down measures and terms for the management of hazardous waste and is aimed primarily at preventing and reducing the production and harmful potential of such waste (Article 5 (1))

### ***Ireland***

Volumetric emission limit values are stipulated in each IPC licence and as requirement of the Environmental Management Programme required under each licence that the licensee address the minimisation of effluent from incineration activities

### ***Italy***

Management of wastewater discharges from hazardous waste incineration plants is governed by Appendix 1, subparagraph O and by Appendix 2, sub-appendix 2, subparagraph L of Ministerial Decree n° 124/2000. In general, water discharge from off-gas washing should be as low as possible and must comply with the water protection legislation in force (Legislative Decree n° 152/99, and subsequent amendments).

### ***Luxembourg***

Provisions of Article 8 of the Directive have been taken up by Article 8 of the regulation of the *grand-ducal* of 6 October 1996.

### ***The Netherlands***

Requirements relating to these aspects are part of the requirements on the plants concerned in respect of discharges of wastewater. The reader is referred to the applicability of the permit requirement of the Wastewater Contamination Act (Article 1(b) of the Hazardous Waste Incineration Regulations) requirements in Articles 7 and 8 and the requirements in sections 2.1(f) and 5.7 of Annex I of the Hazardous Waste Incineration Regulations.

In ***Portugal*** legislative measures have been adopted to comply with Article 8 of Directive 94/67/EC via Article 16 – *Liquid effluents*, of Decree-Law 273/98.

### ***Spain***

Reference is made to Article 9 of the Royal Decree 1217/1997 which requires incineration installations to be designed and will operate in such a way as to prevent the release of polluting substances into the ground and water. There must also be storage capacity for rainwater run-off coming from the land where the incineration installation is situated, or for polluted water coming from overflows or fire-fighting operations. This storage capacity will be sufficient to ensure that this water can be tested and treated before being discharged, if necessary.

### ***Sweden***

The requirement is laid down in Sections 25 – 26 of the Swedish Regulation.

### ***United Kingdom: England and Wales***

Planned wastewater discharges from such processes are subject to specific aqueous emission limits. Permits to operate processes incinerating hazardous waste require prevention of release of pollutants to soil and groundwater.

### ***United Kingdom: Scotland***

Permits for plants either (a) contain conditions to enact all the requirements of Article 8 or (b) are designed so that there are no relevant wastes discharged from the process.

***United Kingdom: Northern Ireland and Gibraltar***

Not applicable, no permits have been issued for incineration of this waste.

In ***England, Scotland and Wales***, these plants are authorised under Part I of Environmental Protection Act 1990 (EPA90) or permitted under the Pollution Prevention and Control Act 1999 and regulations and directions issued by the SoS.

In ***Northern Ireland***, the relevant legislation is the Industrial Pollution Control (Prescribed Processes and Substances) (Amendment) Regulations (Northern Ireland) 1999 No 26 and the Industrial Pollution Controls (Hazardous Waste Incineration ) Direction (Northern Ireland) 1997 both made under the Industrial Pollution Control (Northern Ireland) Order 1997.

In ***Gibraltar***, the relevant legislation is the Public Health Ordinance (Amendment) Ordinance 1998 which amended the Ordinance on Waste and by the Specified Hazardous Waste (Incineration Plants) Ordinance 1998.

**Table 12 Summary of responses to Question 7**

Member State	Measures to reduce wastewater discharges?	Reference to national law?	Notes, details
<i>Austria</i>	✓	✓	Wastewater to be collected, treated and discharged as necessary
<i>Belgian Flanders</i>	✓	✓	-
<i>Belgian Wallonia</i>	✓	✓	-
<i>Denmark</i>	✓	✓	Permit required from the competent authority
<i>Finland</i>	✓	✓	-
<i>France</i>	✓	✓	-
<i>Germany</i>	✓	✓	Permit for discharging waste-waters is required from the responsible authorities
<i>Greece</i>	✓	✓	-
<i>Ireland</i>	✓	✓	Volume limits covered under each IPC licence for the incineration works.
<i>Italy</i>	✓	✓	Discharges to be kept to a minimum
<i>Luxembourg</i>	✓	✓	-
<i>Netherlands</i>	✓	✓	-
<i>Portugal</i>	✓	✓	-
<i>Spain</i>	✓	✓	-
<i>Sweden</i>	✓	✓	-
<i>United Kingdom</i>	✓	✓	Specific limits set.

**8.(a) What measures in general have been taken in accordance with Article 9 to ensure compliance with Directives 75/442/EEC and 91/689/EEC?**

*All responding Member States have ensured measures are in place to deal with solid wastes from incineration plants and all cite applicable national legislation. Austria, Denmark, France, Germany, Ireland, Spain and the United Kingdom confirm specific measures for the handling, storage an/or disposal of ashes. These Member States specify that details of the physical and chemical characteristics of waste produced by the plant are required. All these*

*Member States specify that the transport and storage of wastes originating in incineration are to be conducted in closed containers in order to avoid any releases. In Denmark, there is an incentive through the waste tax to keep quantities of waste sent to landfills as low as possible.*

### ***Austria***

Directive 75/442/EC: the general principle of § 1, para. 2 Z 3 AWG is applicable in particular with respect to the utilisation and disposal of residues: "*Wastes which are not usable are to be treated according to their properties with biological, thermal or physico-chemical procedures. Solid residues are to be stored as conditioned and stable as possible (Waste disposal).*"

A ban on mixing of wastes is standardised in § 17, para. 1a AWG.

Directive 91/689/EC: the Directive on dangerous wastes has been transposed into the "Fixed Order on dangerous wastes", BGBl II 1997/227 idF BGBl II 2001/178. In accordance with section 1 in this Order the group of ashes, slag and dust from thermal waste handling and from combustion plants has been proven to be dangerous waste and comes under the regime for dangerous wastes.

### ***Belgian Flanders***

The measures that are listed in Article 5.2.3.1.7 and Article 5.2.3.1.3(4) of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995, updated in 1999.

***Belgian Wallonia*** refers to Articles 13, 14, 15 and 16 of the AGW of 13<sup>th</sup> April 2000 on the incineration and co-incineration of hazardous wastes.

### ***Denmark***

As noted in the reply to question II.1.a, the application must contain information on waste. This means for example that the application must state the volumes that are utilised and the volumes that are sent for disposal. In addition, there is an incentive through the waste tax to keep the quantities of waste sent to landfills as low as possible.

### ***Finland***

Handling of the waste originating from the plant is regulated in government decision (842/1997) paragraph 19.

### ***France***

The chapter IV of the *arrêté ministériel* of the 10<sup>th</sup> October 1996, concerning the management and the treatment of the waste arising from the incinerator, defines among others the conditions of characterisation, the quantification, the storage and the elimination of the produced residuals.

### ***Germany***

The Federal Government has set in § 7 para. 1 of the 17<sup>th</sup> FEPL that slags, filter- and boiler dust as well as reaction products and other wastes from the exhaust gas treatment are to be avoided or otherwise to be used orderly and without damage. If avoidance or use is technically impossible or unreasonable they are to be removed as waste without damage to the well being of the general public. It is set in § 7 para. 3 that the content of organic and soluble

substances in the wastes and other substances are to be minimised, so far as the fulfilment of the duties in para. 1 are necessary. In accordance with § 7, transport and storage systems for toxic and dust-forming wastes are to be set up and operated in a way such that no significant or relevant diffuse emissions can escape. This is valid in particular with respect to necessary maintenance and repair work on worn out parts of plant. Dry filter- and boiler particulates as well as reaction products of the exhaust gas treatment and extracted, dry slags are to be transported in closed containers or to be temporarily stored. In accordance with § 7 para. 5 the physical and chemical characteristics of the incineration residues and their toxic impurity content have to be evaluated through suitable analysis before the process for use or removal of the residues is fixed, in particular slags and filter- and boiler dust.

### ***Greece***

The environmental terms require incinerators to be equipped with anti-pollution means and pollutants recorders and provide for checks by the competent authorities. The measures specified in Joint Ministerial Decision 19396/1546 (Gov. Journal 604/B, 18-7-1997), which lays down measures and terms for the management of hazardous waste, are also applicable.

### ***Ireland***

The conditions in each IPC licence specifies that disposal must be in accordance with appropriate legislation. In addition any disposal method or contractor to be used must be agreed with the Agency as specified in the conditions and also the schedules of the licence.

### ***Italy***

Ministerial Decree n° 124/2000 also sets out the procedures for the management of incineration residues, particularly in Appendix 1, subparagraph P. Appendix 2, sub-appendix 2, subparagraph M covers co-incineration waste. Combustion residues are managed pursuant to Legislative Decree n° 22/97, which governs waste recovery and/or disposal.

### ***Luxembourg***

Provisions of Article 9 of the Directive have been taken up by Article 9 of the regulation of the *grand-ducal* of 6 October 1996.

### ***The Netherlands***

Requirements relating to these aspects are part of the requirements on the plants concerned in respect of residues. The reader is referred to the requirements in sections 2.1, 8.1, 8.2 and 8.3 of Annexes I and II of the Hazardous Waste Incineration Regulations.

In ***Portugal*** legislative measures have been adopted to comply with Article 9 of Directive 94/67/EC via Article 17 – *Management of the residues produced*, of Decree-Law 273/98.

### ***Spain***

Reference is made to Article 10 of the Royal Decree 1217/1997. Waste resulting from the operation of the incineration installation will be recycled or eliminated in accordance with the provisions of legislation concerning toxic and hazardous waste, for which purpose the relevant authorities may demand the prior treatment of such waste. This waste will be kept separately until it is decided whether to recycle or eliminate it.

### ***Sweden***

These questions should be addressed to the parties that are evaluated during the permit assessment. The instructions that are presented in Article 9 have been introduced in Sections 27 – 30 of the Swedish Regulation.

***United Kingdom: England and Wales***

Permits to operate processes incinerating hazardous waste require that;

- incinerator residues are recovered or disposed of in accordance with the Waste Framework and Hazardous Waste Directives;
- transport and intermediate storage of dust residues must be in closed containers;
- prior to determining disposal or recovery routes, tests of physical and chemical characteristics and pollution potential of residues are carried out, particularly analysis of the soluble fraction and heavy metals content (as applicable) for grate ash; boiler ash; fly ash; dry scrubber residues; water treatment residues; and any other residues.

Departure from the following practices has not been permitted without justification:

- pre-treatment of residues;
- recovery of heat generated by incineration; and
- keeping residues separate pending assessment of recovery or disposal.

***United Kingdom: Scotland***

In one co-incineration plant there is no residue; the authorisations of two others contain specific conditions to require disposal and handling of residues in accordance with Article 9 and the Special Waste Regulations and the final plant disposes of sludge in accordance with requirements of Special Waste Regulations.

***United Kingdom: Northern Ireland Gibraltar***

Not applicable, no permits have been issued for incineration of this waste.

**Table 13 Summary of responses to Question 8.(a)**

Member State	Measures taken to ensure correct waste ash disposal?	Reference to national Law?	Notes, details
<i>Austria</i>	✓	✓	Unusable wastes to be treated accordingly, solid residues to be stored safely.
<i>Belgian Flanders</i>	✓	✓	-
<i>Belgian Wallonia</i>	✓	✓	-
<i>Denmark</i>	✓	✓	Licence must have info on waste volumes re-used and disposed.
<i>Finland</i>	✓	✓	-
<i>France</i>	✓	✓	Characterisation, quantification, storage and elimination of waste
<i>Germany</i>	✓	✓	Characterisation, quantification, storage has to be stated
<i>Greece</i>	✓	✓	-
<i>Ireland</i>	✓	✓	Waste disposal covered under each IPC licence for the incineration works.
<i>Italy</i>	✓	✓	-
<i>Luxembourg</i>	✓	✓	-
<i>Netherlands</i>	✓	✓	-
<i>Portugal</i>	✓	✓	-
<i>Spain</i>	✓	✓	-
<i>Sweden</i>	✓	✓	-
<i>United Kingdom</i>	✓	✓	Detail on disposal and storage of ashes.

**8.(b) Where this information is available indicate whether the heat produced by incineration is recovered, the type of recovery and the efficiencies.**

*All Member States except France, Luxembourg and Portugal stated that they use the heat recovered in their incineration plants to generate electricity or for heating. Luxembourg has no hazardous waste incineration plants. France and Portugal provided no response to this question. Belgian Wallonia referenced law but provided no other information. Germany, Greece, Ireland and Italy stated that the information was not available. The highest level of efficiency is achieved in Sweden at approximately 90%.*

***Austria***

At the dangerous wastes incineration plant operated in Vienna the produced heat is used (CHP); the efficiency of the plant is >70%.

***Belgian Flanders***

Four companies are licensed for hazardous waste incineration and each recovers between 70% and 80% of the heat released. Details of actual efficiencies are provided in the detailed Belgian response given in.

**Belgian Wallonia** refers to Articles 13, 14, 15 and 16 of the AGW of the 13<sup>th</sup> April 2000 on the incineration and co-incineration of hazardous waste.

### **Denmark**

According to the Danish Heat Supply Act, a plant that incinerates hazardous waste must be included as a heat source in the heating plans that the municipal boards are obliged to prepare. The heat production of the incineration plant is therefore included in the supply of heat. In a number of cases, electricity is also supplied to the general distribution network.

In 2000, Kommunekemi supplied the municipality of Nyborg with 133,900 MWh of heat and 10,500 MWh of electricity.

### **Finland**

Heat is recovered in the Ekokem Oy Ab incineration plant. The hot flue gases from the combustion are utilised in a waste heat boiler with capacity of 18,6 MW and pressure at 32 bar. The heat produced will be used to generate electricity to be used in the plant area and district heat to the city district heat network. Part of the steam produced in the boiler will be utilised for different processes within the plant. Additional energy to the district heat network will be extracted from the drum cooling water.

### **France**

No response.

### **Germany**

It has been set by the Federal Government (in § 8 of the 17<sup>th</sup> FEPL) that heat generated from works (after § 1 para. 1 of the 17<sup>th</sup> FEPL) which is not delivered to a third party is to be used in the operator's plant, insofar as this is technically possible and reasonable according to the type and location of the works as well as being in agreement with the duties of § 5 para. 1 no. 1-3 of the FEPL. Where an electrical potential of more than 0.5 MW is achievable from the resulting heat from incineration, which is not delivered to a third party or is not used in the operator's plant, then electrical energy is to be produced. No adequate information is available on the type of heat usage in single works and the associated efficiencies.

### **Greece**

No information is available.

### **Ireland**

Heat recovery by a heat recovery boiler for the production of steam for on-site use is available on recently built incinerators. Efficiency figures are not available at this time.

### **Italy**

The data concerned is not available.

### **Luxembourg**

Not applicable.

### **The Netherlands**

The administration of permits at the competent authorities is not geared to the supply of the data requested. Efficiencies at AVR-DTO are 19.8% for electricity and 14.6% for steam. At AVR-Roosterovens, efficiencies are 21.6% for electricity and 27% for steam.

***Portugal***

No response to the question was provided.

***Spain***

For incinerators of a capacity of 30,000 t/year, the produced heat is reclaimed to generate electricity, with an excess of 12,500 MWh. For incinerators of a capacity of 10,000 t/year, the heat is reclaimed to produce 5-6 t/hour of steam of 30 bars, used for self-consumption (within the plant). In co-incineration plant the combustion heat coming from the waste is reclaimed as alternative combustible into an oven of clinker fabrication.

***Sweden***

The energy is recycled with the exception of Akzo Nobel and Hydro Polymers. As steam boilers are used, the efficiency is as for normal fuel, normally approximately 90%. No calculations have been made to determine the energy loss resulting from the increased excess air necessary to fulfil the requirement in the Directive. The most important plant in the country for qualified hazardous waste, Sakab, a high-temperature rotary furnace, is fitted with a steam boiler whose steam is used for electricity production in a back pressure turbine, for local heating purposes in the plant and for district heating deliveries to residences in the nearby municipalities of Kula, Hallsberg and Örebro. For co-incineration in cement production, there is no direct equivalent of boiler efficiency, so a comparison must be made between different cement furnaces and their energy consumption per unit output. There is also nothing to indicate that such comparisons would show a significant difference between waste fuel and regular fuel.

***United Kingdom: England and Wales***

In general, hazardous waste incinerators do not recover heat. Some co-incineration plants use hazardous waste as a substitute fuel.

***United Kingdom: Scotland***

At the co-incineration plant the burning of the waste is a prime energy source for the process and the heat generated is used in cement making. In essence the waste replaces other fuel (coal) that would otherwise have to be burned. In the other three plants none of the heat produced by incineration is recovered.

***United Kingdom: Northern Ireland***

Not applicable as no permits have been issued for incineration of this waste.

**Table 14 Summary of responses to Question 8.(b)**

Member State	Heat recovered?	No. of plant	Type of recovery	Efficiency %	Notes, details
<i>Austria</i>	✓	1	CHP	70	-
<i>Belgian Flanders</i>	✓	4	Plant 1. Heat	70	Split 30/70 into steam/electricity to destroy wastewater
			Plant 2. Heat	79	
			Plant 3. Reclaimed as 16 bar steam	80	Delivered to nearby factory
			4. Heat reclaimed	70	Used in the incineration plant
<i>Belgian Wallonia</i>	No information provided				
<i>Denmark</i>	✓	1	Heat and electricity	-	Kommunekemi supplied 133,900 MWh heat & 10,500 MWh electricity
<i>Finland</i>	✓	1	Heat and electricity	-	Ekokem Oy Ab 18,6 MW
<i>France</i>	-	-	-	-	No MS response
<i>Germany</i>	✓	NA	NA	NA	Information not available
<i>Greece</i>	✓	NA	NA	NA	Information not available
<i>Ireland</i>	✓	NA	Heat recovery boilers	NA	Information not available
<i>Italy</i>	✓	-	-	-	-
<i>Luxembourg</i>	NA	-	-	-	
<i>Netherlands</i>	✓	2	1. AVR-DTO	19.8 & 14.6	for electricity & steam
			2. AVR-Roosterovens	21.6 & 27	for electricity & steam
<i>Portugal</i>	-	-	-	-	No MS response
<i>Spain</i>	✓	3	Electricity and steam	-	12,500MWh generated in one incinerator
<i>Sweden</i>	✓	1	Electricity production	90	Others exist
<i>United Kingdom</i>	✓	1	Heat	-	Used in cement making as a substitute for conventional fuels, e.g. coal

**9. What measures in general have been taken to ensure compliance with the measurement requirements in accordance with Article 10 including the requirements of Annex III?**

*All Member States have implemented measures for compliance with the measurement requirements and all except Denmark, Greece, and Ireland have referenced national legislation. Austria and Germany have also given further detail on conditions and reporting schedules. In Austria, further requirements include start-up and close-down measurements, measurement location are to be fixed and measurement sites have to comply with defined requirements. In Germany, values of emissions are to be controlled and measured either continually and/or through single measurements.*

***Austria.***

More detailed regulations are given in §§ 11 and 12 and sections 3 and 4 of the BMUJF-VerbVO, in § 10 as well as sections 2 and 3 of the BMWA-VerbVO with respect to the requirements on measurements.

The measurements are carried out according to the standard measuring techniques; references are given in section 4 BMUJF-VerbVO and section 2 BMWA-VerbVO. The measurement results and the operational conditions during the measuring are to be described/recorded.

The following regulations about the procedure for measurements as well as about measurement sites and equipment are fully laid out in the BMUJF-VerbVO.

- the start-up and close-down phases are to be included in the measurements (§ 11, para. 6 BMUJF-VerbVO).
- The measurement locations are to be fixed on the basis of the opinion of an authorised external expert or expert institute of the authority (Definition in § 3 Z 20 BMUJF-VerbVO), so that a representative and absolutely technical emissions measurement is guaranteed (§ 12 Abs. 2 BMUJF-VerbVO).
- The measurement sites have to comply with defined requirements (§ 12, para. 1 BMUJF-VerbVO).
- The measuring equipment and analysis systems have to comply with ÖNORMEN M 9410 to M 9412 or similar ISO- or EN-Standards and should be calibrated every three years by an authorised/qualified expert, see above (§ 12 para. 3 & 4 BMUJF-VerbVO).
- Reference oxygen: the Authorities can fix in single cases a differing reference oxygen content, when the wastes are incinerated in oxygen-enriched atmospheres (§ 11 para. 7 BMUJF-VerbVO).
- When the actual measured oxygen content is higher for toxic substances for which exhaust gas scrubbing systems exist the oxygen content is to be converted to the reference oxygen content. In the opposite case the conversion is not permitted. (§ 11 para. 8 BMUJF-VerbVO).

***Belgian Flanders***

The measures that are listed in Article 5.2.3.2.6 of the Flemish Government Decree governing general and sectoral provisions on environmental health of 1 June 1995, updated in 1999.

***Belgian Wallonia*** refers to Article 20, 21, 22 and Annex IV of the AGW of the 13<sup>th</sup> April 2000 on the incineration and co-incineration of hazardous waste.

***Denmark***

The measurement requirements are part of the conditions laid down in an environmental approval and contravention will result in the imposition of penalties.

***Finland***

Measurement of emissions as well as the measurement methods are regulated in government decision (842/1997) paragraphs 20 and 21, and measurement techniques in appendix II of this decision.

***France***

The article of the *arrêté ministériel* of the 10<sup>th</sup> October 1996 defines the conditions of measurements. The note to the regional directors of the industry, the research and

development of the 29 December 1999 specifies the uncertainties and the interval of confidence at 95% for the measures realised in the context of the self-monitoring of the specialised incinerator installations and installation of co-incineration's of some of the special industrial waste.

### ***Germany***

In compliance with the emission limit values, the Federal Government has determined that these values will be controlled and measured either continually and / or through single measurements, in accordance with §§ 11 - 15 of the 17<sup>th</sup> FEPL. Thus measuring procedures and equipment will be put into use to comply with the requirements of the § 10 of the 17<sup>th</sup> FEPL. A permit from a publicly known office from the highest responsible state (Land) authority for calibration is required for the orderly installation of continuous monitoring equipment.

The operator of measuring equipment to be used for the continual monitoring of emissions must let it be calibrated and once-yearly checked for functional capability by a publicly known office from the highest responsible state (Land) authority. The calibration is to be repeated after a considerable alteration to the works, and in any case after three years. The reports on the results of the calibration and the checking of the functional capability are to be supplied to the responsible authorities within eight weeks.

### ***Greece***

Requirements concerning this are stated in the environmental terms approvals.

### ***Ireland***

Each IPC licence includes conditions requiring that the measurements and monitoring as specified in the Directive are carried out. The sampling and measurement procedures are specified in the licences.

### ***Italy***

Information on sampling, analysis and evaluation methods for atmospheric emissions is contained in Appendix 1, subparagraph C of Ministerial Decree n° 124/2000 (incineration). The same information for co-incineration is contained in Appendix 2, sub-appendix 2, subparagraph A of the same decree. The methods are also described in the earlier Ministerial Decree of 21/12/1995, which lays down the *'discipline and methods of testing atmospheric emissions from industrial plants'*.

### ***Luxembourg***

Provisions of Article 10 of the Directive have been taken up by Article 10 of the regulation of the *grand-ducal* of 6 October 1996.

### ***The Netherlands***

The obligations in respect of measurement requirements as set out in Article 10 of the Directive are part of the requirements on the plants concerned. The reader is referred to the requirements in Articles 4 and 5 of the Hazardous Waste Incineration Regulations, as well as the requirements in sections 2.1, 2.3 and 4.1 of Annex I and in sections 2.1, 2.2 and 4.1 of Annex II and section 29 of Annex II of the Hazardous Waste Incineration Regulations.

In ***Portugal*** legislative measures have been adopted to comply with Article 10 of Directive 94/67/EC via Article 15 – *Measurement techniques*, of Decree-Law 273/98.

***Spain***

Reference is made to Articles 11, 12, 13 and Annex 3 of the Royal Decree 1217/1997 which details measurement requirements.

***Sweden***

The measurement requirements have been implemented in Sections 31 - 40 of the Swedish Regulation on the incineration of hazardous waste. Measurements form part of the control programme necessary to demonstrate that the relevant requirements have been fulfilled.

***United Kingdom: England and Wales***

Permits to operate processes incinerating hazardous waste specify:

- measurement requirements in order to monitor in accordance with Article 11 the parameters, conditions and mass concentrations of the pollutants relevant to the incineration process;
- sampling and measurement procedures to satisfy the obligations imposed for periodical measurements of each air pollutant and the location of the sampling or measurement points; and
- requirements for periodical measurements in accordance with Annex III.

Permits have only been granted if the EA considers that the proposed measurement techniques comply with Annex III.

Such permits require that:

- measurements for the determination of concentrations of air pollutants in gas-carrying ducts are carried out representatively;
- installation and the functioning of the automated monitoring equipment is subject to control and to an annual surveillance test;
- sampling and analysis of all pollutants including dioxins and furans as well as reference measurement methods to calibrate automated measurement systems is done as given by CEN-standards; and
- the values of the 95% confidence intervals do not exceed the percentages in Annex III, point 4.

***United Kingdom: Scotland***

The permit specifies the monitoring which must be undertaken and this is as laid down in the Article.

***United Kingdom: Northern Ireland Gibraltar***

Not applicable, no permits have been issued for incineration of this waste.

In ***England, Scotland and Wales***, these plants are authorised under Part I of Environmental Protection Act 1990 (EPA90) or permitted under the Pollution Prevention and Control Act 1999 and regulations and directions issued by the SoS.

In ***Northern Ireland***, the relevant legislation is the Industrial Pollution Control (Prescribed Processes and Substances) (Amendment) Regulations (Northern Ireland) 1999 No 26 and the Industrial Pollution Controls (Hazardous Waste Incineration ) Direction (Northern Ireland) 1997 both made under the Industrial Pollution Control (Northern Ireland) Order 1997.

In *Gibraltar*, the relevant legislation is the Public Health Ordinance (Amendment) Ordinance 1998 which amended the Ordinance on Waste and by the Specified Hazardous Waste (Incineration Plants) Ordinance 1998.

**Table 15 Summary of responses to Question 9**

Member State	Measurement requirements complied with ?	Reference to national law ?	Details
<i>Austria</i>	✓	✓	Info on reference O <sub>2</sub> content of incineration
<i>Belgian Flanders</i>	✓	✓	-
<i>Belgian Wallonia</i>	✓	✓	-
<i>Denmark</i>	✓	✗	-
<i>Finland</i>	✓	✓	-
<i>France</i>	✓	✓	-
<i>Germany</i>	✓	✓	Info on calibration and reporting duties
<i>Greece</i>	✓	✗	-
<i>Ireland</i>	✓	✗	Under IPC licences
<i>Italy</i>	✓	✓	-
<i>Luxembourg</i>	✓	✓	-
<i>Netherlands</i>	✓	✓	-
<i>Portugal</i>	✓	✓	-
<i>Spain</i>	✓	✓	-
<i>Sweden</i>	✓	✓	-
<i>United Kingdom</i>	✓	✓	Calibrated to CEN standards.

**10. With regard to Article 13(2), indicate the number of notifications of complete shut down of installations received including the capacity of incineration, the number of hours and the period of operation.**

*Only France, Spain and the United Kingdom, Scotland notified the relevant authority of a possible shutdown. For Austria, Belgian Flanders and Wallonia, Finland, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and the United Kingdom (excluding Scotland) there have been no reported shutdowns. Similarly in Denmark and Sweden the exemption rule in accordance with Article 13.2 has not been applied.*

In *France* about ten installations, representing a total capacity of the order of 90,000 tonnes per year, used the possibility to notify the prefect that the installation would not be operating more than 20,000 hours per year for a period of a maximum of 5 years, before its definitive stopping.

### *Spain*

The number of notifications of complete shut down of installations received in accordance with Article 13 (2) was four. These four were furnaces for incineration of hospital waste. The capacity of incineration of three of these furnaces was 40 t/year, 10 t/year and 10 t/year respectively. All these installations have ceased their activities.

### *United Kingdom: Scotland*

One plant of capacity of approximately 2440 tonnes per annum gave notification. In the event the unit was never operated past the date specified in this Article. It has since been demolished.

**Table 16 Summary of responses to Question 10**

<b>Member State</b>	<b>No. of notifications</b>	<b>Capacity (tonnes per year)</b>	<b>No. of hours/period of operation</b>
<i>Austria</i>	0	N/A	-
<i>Belgian Flanders</i>	0	N/A	-
<i>Belgian Wallonia</i>	0	N/A	-
<i>Denmark</i>	0	N/A	-
<i>Finland</i>	0	N/A	-
<i>France</i>	10	90,000	20,000 hrs pa/ max. five years
<i>Germany</i>	0	N/A	-
<i>Greece</i>	0	N/A	-
<i>Ireland</i>	0	N/A	-
<i>Italy</i>	0	N/A	-
<i>Luxembourg</i>	0	N/A	-
<i>Netherlands</i>	0	N/A	-
<i>Portugal</i>	0	N/A	-
<i>Spain</i>	4	40, 10, 10 and unspecified	Not specified
<i>Sweden</i>	0	N/A	-
<i>United Kingdom Scotland</i>	1	2440	Closed before 31 Dec. 1996

# Appendix 1

## Detailed Member State Responses (English translation)

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### CONTENTS

Austria  
Belgium Flanders  
Belgium Wallonia  
Denmark  
Finland  
France  
Germany  
Greece  
Ireland  
Italy  
Luxembourg  
Netherlands  
Portugal  
Spain  
Sweden  
United Kingdom

