



Overview assessment of implementation reports on
OSPAR Recommendation 2003/4 on
controlling the dispersal of mercury from crematoria



OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the "OSPAR Convention") was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998.

It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Union and Spain.

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998.

La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par l'Union européenne et l'Espagne.

Acknowledgement

This overview assessment was prepared by the United Kingdom as lead country.

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Executive Summary

This document provides an overview and assessment of the implementation of OSPAR Recommendation 2003/4 on controlling the dispersal of mercury from crematoria. It is based on national implementation reports from 12 of the 15 Contracting Parties which were requested to submit reports on the national measures taken, and their effectiveness, to give effect to the provisions of the Recommendation in their territories. Of the remaining three Contracting Parties, one reported that their crematoria were too small to fit removal technologies; no evidence has been received on the implementation by two Contracting Parties.

The national information reported shows that OSPAR Recommendation 2003/4 has been a significant driver in reducing mercury emissions from crematoria in the Convention Area, and that those Contracting Parties who reported have broadly implemented it. A significant number of crematoria already apply mercury removal techniques, and the number has grown since the last implementation report in 2005. Mercury abatement measures are planned, where practicable, and these should lead to further significant reductions in releases from crematoria in the Convention area.

Récapitulatif

Le présent document représente une évaluation récapitulative de la mise en œuvre de la Recommandation OSPAR 2003/4 concernant la lutte contre la dispersion du mercure émis par les crématoriums. Cette évaluation se fonde sur les rapports nationaux de mise en œuvre communiqués par douze des quinze Parties contractantes qui doivent soumettre des rapports sur les mesures nationales prises et sur leur efficacité, afin de donner effet aux dispositions de ces Recommandations dans leurs territoires. Des trois Parties contractantes restantes, l'une a notifié que ses crématoires étaient trop petites pour permettre l'instauration des technologies d'élimination ; les deux autres n'ont soumis aucun rapport de mise en œuvre.

Les rapports nationaux indiquent que la Recommandation OSPAP 2003/4 a joué un rôle important dans la réduction des émissions du mercure des crématoires dans la zone de la Convention et que les Parties contractantes qui ont soumis leur rapport ont, en général, mis en œuvre cette recommandation. Un nombre important de crématoires appliquent d'ores et déjà les techniques d'élimination, et ce, un nombre croissant depuis la dernière mise en œuvre en 2005. Les mesures de réduction du mercure sont prévues, dans la mesure du possible, et celles-ci devront entraîner d'autres réductions plus importantes des rejets des crématoires dans la zone de la Convention.

1. Introduction

1.1 OSPAR Recommendation 2003/4

Mercury has been selected and prioritised by OSPAR as chemical for priority action because of its persistence, liability to bioaccumulate and toxicity. OSPAR has taken a number of measures to reduce discharges, emissions and losses of mercury from point and diffuse sources and identified crematoria as a significant source for releases of mercury, especially from dental amalgam from human remains.

Recognising that the practice of cremation raises sensitive cultural and societal issues, and that there are different attitudes and approaches among Contracting Parties that need to be respected in addressing the problems of discharges, emissions and losses of mercury from crematoria, OSPAR Recommendation 2003/4 recommends Best Available Techniques (BAT) which could be taken at crematoria to prevent and control the dispersal of mercury to the environment.

1.2 EC legislation

The EC Mercury Strategy (COM (2005) 20 final) acknowledges crematoria as a source for mercury dispersal but so far, no control measures or monitoring apply at Community level.

1.3 Implementation reporting

1.3.1 General reporting requirements

Under Article 22 of the OSPAR Convention, Contracting Parties shall report to the Commission at regular intervals on the national measures (legal, regulatory, or other) taken by them to implement the provisions of the decisions and recommendations adopted under the OSPAR Convention and on the effectiveness of these national measures. This implementation reporting forms the basis for OSPAR to assess the compliance by Contracting Parties with the Convention and ultimately to evaluate the effectiveness of programmes and measures under the Convention.

Detailed provisions on implementation reporting and related assessments by OSPAR are laid down in OSPAR's Standard Implementation Reporting and Assessment Procedure (reference number 2003-23, update 2005). Unless stated otherwise in the OSPAR instrument concerned, the practice has been in general that an implementation report should be submitted to the appropriate OSPAR subsidiary body in the intersessional period four years after the adoption of a measure and every four years thereafter until fully implemented. Implementation reporting does not apply to Contracting Parties with reservations (or non-acceptance) on an OSPAR measure unless and until the reservation (or non-acceptance) is lifted.

1.3.2 Reporting requirements under OSPAR Recommendation 2003/4

This overview assessment of the implementation of OSPAR Recommendation 2003/4 has been prepared by the lead country United Kingdom based on national reports submitted by Contracting Parties in the 2009/2010 and 2010/2011 meeting cycles, and has been examined by the Hazardous Substances and Eutrophication Committee (HASEC) in 2011.

This is the second implementation reporting and assessment on Recommendation 2003/4. It follows a first overview report in 2006 (OSPAR publication 291/2006). The reporting format for this second reporting round has been amended through OSPAR Recommendation 2006/2 to include a request for information on social and cultural practices relating to crematoria. This information is summarised for the first time in this report.

2. Overview of compliance

All Contracting Parties were invited to submit implementation reports on OSPAR Recommendation 2003/4 by 31 August 2010. An overview of implementation reports received is included in Table 1.1.

The following Contracting Parties have submitted an implementation report in 2010/11 on this measure: Belgium, Denmark, France, Germany, Ireland, Luxembourg, the Netherlands, Norway, Spain, Sweden, Switzerland and the UK. No reports were received from Finland, Iceland and Portugal. It therefore provides a reasonable picture of implementation in the Convention Area. Table A provides a summary of those Contracting Parties who have submitted implementation reports and the means of implementation.

Table 1.1. Overview of implementation on OSPAR Recommendation 2003/4 on controlling the dispersal of mercury from crematoria

* **CPs in bold type** have supplied no evidence to date (by HASEC 2011) that this measure has been implemented

Contracting Party	Reservation	Report sent in 2010/11	MEANS OF IMPLEMENTATION		
			By legislation	Administrative action	Voluntary agreement
Belgium ¹	No	Yes	x	x	
Denmark	No	Yes	x	x	x
Finland ²	No	No			
France	No	Yes	x	x	
Germany	No	Yes	x	x	
Iceland	No	No			
Ireland ³	No	Yes		x	
Luxembourg	No	Yes	x	x	
Netherlands	No	Yes		x	
Norway	No	Yes	x		
Portugal	No	No			
Spain	No	Yes	x		
Sweden	No	Yes	x		
Switzerland	No	Yes	x		
United Kingdom	No	Yes	x	x	

¹ Belgium submitted separate implementation reports for the Flanders and Wallonia regions

² Finland provided an implementation report in 2005, informing that Finland has not implemented this Recommendation because the crematoria in Finland are so small and that mercury removal processes would be financially unfeasible” This situation is allowed for under para 3.4 of the recommendation.

³ Ireland used a non-standard implementation report

3. Overview of effectiveness

Contracting Parties were asked to estimate the load of mercury entering the environment from crematoria in their countries, if possible using the tables of the reporting format appended as Annex 2 to OSPAR Recommendation 2003/4 (as amended). All Contracting Parties fulfilled this requirement.

In reporting the estimates of mercury emitted from crematoria, Contracting Parties have used the following methodologies:

a. calculation of loads

Several methods are reported for calculating loads emitted from crematoria. The most common is to use an estimate for the amount of mercury in the fillings of each corpse and multiply this by the number of corpses incinerated. This ranges between 1 and 5 g per corpse. Some countries also apply an abatement factor to account for the amount of mercury which is removed during cremation. Several countries which have mercury measurement devices for flue gases calculate the mercury emissions directly from these measurements based on the time the crematoria is operating.

b. calculated loads of mercury emitted to the environment

Some Contracting Parties gave very clear figures for loads, whereas others were less precise. Therefore on the basis of the information provided it is not possible to provide a reliable figure for the total load of mercury emitted from the crematoria of those contracting parties who reported. Loads are higher from crematoria not applying mercury removal techniques, and a rough and provisional estimate would be between one and two tonnes per year for the whole Convention Area.

c. how loads from crematoria compare with those from other sources

Several Contracting Parties provided information on how emissions from crematoria compared with total emissions of mercury, ranging from 1.7 to 4.4%. The 2009 assessment on status and trends of marine chemical pollution (OSPAR publication 395/2009) which contributed to the OSPAR Quality Status Report 2010 for the North-East Atlantic estimated total emissions of Hg at around 40 tonnes.

Loads of mercury reaching the environment from crematoria which have been reported by Contracting Parties are summarised in the following tables at Annex 1. Table 3.1 addresses loads from crematoria which apply mercury removal techniques, and Table 3.2 addresses loads from crematoria which are not applying mercury removal techniques. Table 3.3 summarises the additional information given in the reports on calculation of loads and other relevant information on measures taken to give effect to the Recommendation.

4. Information on social and cultural practices relating to crematoria

Several countries reported on the proportion of corpses dealt with by cremation, and although burial remains popular, there appears to be a growing trend towards the use of cremation, particularly in big cities.

5. Conclusions on the state of implementation of Recommendation 2003/4

The implementation reports provide a good picture of the state of implementation of Recommendation 2003/4 in those Contracting Parties who have reported. The following broad conclusions can be drawn.

- a. most Contracting Parties have regulations which control the emissions of mercury from crematoria. These generally require crematoria to have permits dealing with polluting emissions, including mercury.
- b. a significant number of crematoria already apply mercury removal techniques, and the number has grown since the last implementation report in 2005.
- c. a number of Contracting Parties have specific mercury emission standards for new plants that have been built into national regulations.
- d. a number of Contracting Parties have set remediation programmes for existing crematoria which will lead to further reductions of mercury emissions when the remediation programmes are completed.
- e. there is still a limited amount of information on the societal and cultural practices associated with cremation, but it is becoming more widespread, particularly in big cities.

Reported estimates of loads of dispersed mercury indicate that emissions from crematoria now represent only a small percentage of the total emissions of mercury to the environment and will decrease further as control measures are implemented.

The overall conclusion is that OSPAR Recommendation 2003/4 has been a significant driver in reducing mercury emissions from crematoria in the Convention Area, and that those Contracting Parties who have reported have broadly implemented it. Mercury abatement measures are already in place, or planned where practicable, and these should lead to further significant reductions in releases from crematoria in the Convention Area.

Annex 1. Loads of mercury reaching the environment from crematoria as reported by Contracting Parties

Table 3.1. Load of dispersed mercury from crematoria applying mercury removal techniques

Contracting Party	Number of crematoria in the country which apply mercury removal techniques	Number of cremations in year of reporting	Load of mercury dispersed into environment from crematoria (kilograms of mercury)	Contracting Party Comments	Observations by Lead Country
Belgium	6 (Flanders)	28905 (2006) 29877 (2007) 31690 (2004)	25.7 26.7 27.0	Emission factor of 0.036g Hg per cremation	
Denmark	2	7223	0.433 – 0.650	Year reported is 2008	
France	In 2010, between 10 and 15 crematoria applied mercury removal techniques	around 19 500 cremations per year.	less than 6.7 kg of mercury per year	Limit value of 0.2 mg/Nm ³ was used to estimate the load of mercury. This may be an over-estimate. See table 3 for further details	
Germany	137	462103	25.4	Number of cremations estimated, based on 2004 figures	
Luxembourg	1 ?	2267 (2009) 2108 (2008) 2157 (2007)	<0.004 g/h < 0.008 g/an	Limit value : 0.1 mg/Nm ³ valeurs mesurées : <0.001 mg/Nm ³ heures d'opération : 2'000 h/an	Number of crematoria not clear.
Netherlands	38	49850	1	Year reported is 2008. The BAT technique reduces mercury emissions by 98-99.5%	
Norway	9	5500-5600	2.5 - 3	The regulations on emissions from crematoria that existed before January 2003 came into force from January 2007	
Spain	Approx. 2	?	?		
Sweden	41 (2009)	46500	7		
Switzerland	15 furnaces remediated in 2004	12106	50kg (also includes crematoria in table 1)	27 crematoria and 59 furnaces in total in Switzerland (2004)	
UK	56 as at January 2011, representing 95 000 abated cremations	413431 ¹	estimated UK emissions from crematoria in 2009 = 860kg. This figure pre-dates the impact of installation of mercury removal techniques at crematoria	Number of cremations is for 2009 (figures from Cremation Society of Great Britain) The figure of 860kg is calculated using an emission factor of 1.92g of mercury per cremation England and Wales have introduced a 'burden sharing' system for existing crematoria which specifies that 50% of cremations (using 2003 baseline figures) should be subject to mercury abatement by end-2012	

¹ This 2009 figure is for all crematoria, including those without mercury removal systems.

Table 3.2. Load of dispersed mercury from crematoria which are not applying mercury removal techniques

Contracting Party	Number of crematoria in the country not applying mercury removal techniques	Number of cremations in year of reporting	Load of mercury dispersed into environment from crematoria (kilograms of mercury)	Contracting Party Comments	Observations by Lead Country
Belgium	3 (Wallonia)	9318 (2006) 9788 (2007) 10 378 (2008) 10 281 (2009)	18.636 19.576 20.756 20.562	See table 3.3	
Denmark	29	34 565	69.130 – 103.695	Year reported is 2008	
France	between 125 and 130 crematoria	around 132 500 cremations	between 300 and 400 kg of mercury	Year reported is 2010	
Germany	16	53 968	13.5	These crematoria are equipped with less effective flue gas cleaning techniques and not considered as BAT for mercury removal.	
Ireland	3	3800	8.074	Reporting year is 2009	Other years (1990 – 2008 also reported)
Netherlands	30	29 150	40	Assumption: 100% emission of mercury in amalgam fillings	
Norway	22	8500 - 9500	40-50	The regulations on emissions from crematories that existed before 1 January 2003 will come into force from 1 January 2007	
Spain	Approx 180	?	?	Currently it is difficult to get information on this activity. See Table 3	
Sweden	27	19 500	60		
Switzerland	25 furnaces remediated by 2008	20 106	50kg (also includes crematoria in table 1)	27 crematoria and 57 furnaces in total in Switzerland (December 2008)	
UK	194	See table 1	See table 1	See table 1	

Table 3.3. Additional Information given in the report on calculation of loads and other relevant information on measures taken to give effect to the Recommendation

<p>Belgium</p>	<p>Calculation of loads. An emission factor of 0.036g/cremation was used, In Flanders, Two types of technique used: a) solid bed technique which uses absorption filters, or b0 hand injection of a sodium bicarbonate/ active charcoal absorbent.</p> <p>Wallonia has emission limit values of 0.2mg Hg/ Nm3 for existing facilities and 0.052 mg Hg/ Nm3 for new facilities</p> <p>The average of 4 measurements (corresponding to about 15 cremations) carried out in the facility on which the most detailed investigations seem to have been done leads to an emission factor of about 2 g Hg/body. Therefore it is proposed to keep this emission factor as benchmark, which lies, by the way, in the range of values mentioned in the international literature.</p> <p>About 45% of bodies are cremated: Wallonia – large installations</p>
<p>Denmark</p>	<p>Calculation of loads. Emission of mercury/deceased is 2 – 3 g mercury/deceased. This value has been used in the calculations. The efficiency for flue gas cleaning equipment capable of capturing mercury vapour used in the calculations is 97%.</p> <p>Permitting. By legislation crematories therefore must have an integrated permit. The permit includes an evaluation of the emissions to air, water, soil, waste production, noise etc. as well as a valuation and requirements of the use of BAT.</p> <p>From December 2007 all new permits for crematories shall meet binding rules and these rules include requirements for air abatement to reduce mercury emissions (and in addition this will also result in a reduction in dioxin emission).</p> <p>An agreement is reached in 2007 between The Danish EPA and the Ministry of Ecclesiastical Affairs that existing crematories establish air abatement to reduce mercury emissions from 2011.</p>
<p>Finland</p>	<p>Calculation of loads. No information given</p> <p>Summary of additional information. Finland reports that because the crematoria in Finland are so small, installation of mercury removal processes would be financially unfeasible.</p>
<p>France</p>	<p>Calculation of loads. As the emission limit value for mercury is recent (2010), we do not have any emission factors (or mean of measuring values on these crematoria). The limit value of 0.2 mg/Nm3 was therefore used to estimate the load of mercury. This hypothesis overestimates the result because some measures show that the emission values generally range from 0.05 to 0.1 mg/Nm³ (the estimation is based on an emission output of 1150 Nm³/hour and a duration of cremation of 90 minutes).</p> <p>Additional Information. A ministerial order, published on 28th January 2010, modified the emission limit values from crematoria (chimney exit) allowed in France for several pollutants, and introduced an emission limit value for mercury: 0.2 mg/Nm3. These values entered into force immediately for new installations. A period of 8 years (until 2018) was allotted for existing installations to be on compliance.</p>

<p>Germany</p>	<p>Calculation of loads. For the calculation of the mercury load from German crematoria the emission factors prepared for the report for 2004 were used for estimating the annual mercury emissions. The annual mercury load emitted of a single crematorium using mercury abatement (BAT) averages 184g mercury and a plant without those techniques has an average emission of approximately 844g Hg/a. These emission factors are considered to be still up-to-date. Thus, 137 crematoria in Germany using BAT emitted about 25.4 kg mercury and the 16 plants with less effective abatement technique emitted approx. 13.5 kg. As a result, the total annual mercury load from German crematoria is estimated to amount to approximately 39 kg.</p> <p>Additional Information. Among those 153 crematoria, 137 are using cleaning techniques, which are considered BAT according to the most effective examples quoted in OSPAR Recommendation 2003/4. Most crematoria in Germany are applying “co-flow” techniques using different adsorbing materials like Sorbalit, lime hydrate and/or various coke matrices like activated coke. Some crematoria have installed “solid-bed filters” with activated coke, liquid gas scrubbing and so-called “amalgators”, which catalytically bind mercury as amalgam.</p> <p>The remaining 16 crematoria are equipped with less effective flue gas cleaning techniques with regard to the abatement of mercury emissions. These are fabric filters partially supplemented with oxidising catalysts for the removal of dioxins and other organic compounds, which are not considered BAT.</p> <p>For the calculation of the mercury load from German crematoria the emission factors prepared for the report for 2004 were used for estimating the annual mercury emissions. These emission factors are considered to be still up-to-date. Thus, 137 crematoria in Germany using BAT emitted about 25.4 kg mercury and the 16 plants with less effective abatement technique emitted approx. 13.5 kg. As a result, the total annual mercury load from German crematoria is estimated to amount to approximately 39 kg.</p>
<p>Ireland</p>	<p>Calculation of loads. “Emission factors are taken from the UK NAEI and are based on the general approach suggested by Mills (1990) and refined by Basu <i>et al.</i> (1991). These UK estimates take data from the most recent adult dental health surveys in the UK (UK Department of Health, 2000) as well as detailed death statistics published by CSO, 2004. Calculated UK emission factors increase over the period 1990 to 2003 due to improvements in adult dental health over the period. Although the need for fillings is on the decrease, the general improvement in dental health has meant that far more adults remain dentate at the time of death so the average number of mercury amalgam fillings per cadaver has actually increased over this period.” We have assumed that the population of Ireland have similar dental health to the UK population.</p> <p>Additional Information. There are currently three crematoria in operation in Ireland and one in planning. The existing crematoria accounted for 1.7% of national emissions in 2009. Whilst there is currently no specific national legislation regarding air emissions from crematoria, application of UK BAT standards are the norm. The crematorium in planning will install Solid Bed Filter Abatement and is due for operation around June this year.</p>
<p>Netherlands</p>	<p>Calculation of loads. Calculation of loads is based on estimated number of corpses incinerated multiplied by amount of mercury in fillings of each corpse. (0.36 x 3.8 grams).</p> <p>Additional information. The regulation covering crematoria has been amended to incorporate Rec 2003/4 through an agreement with the Dutch association of crematoria and is based on a national BAT study.</p> <p>Fixed bed activated carbon filtration has been identified as BAT and results in emission levels for mercury lower than 0.01- 0.02 mg/m³, the percentage of removal of mercury ranging from 98% to 99.5%.</p> <p>The choice for activated carbon is also based on the removal efficiency for other pollutants (<i>i.e.</i> VOC, dioxins) and on the cost effectiveness of the measure. The investment costs are approximately 250 000 euro per installation (information from 2004).</p> <p>For the existing installations the NER regulates a phased-in implementation. Large installations shall install BAT by the end of 2006 and the smaller installations are allowed a more lenient time frame until the end of 2012.</p> <p>From January 2010 onward, the licensing procedure for crematoria will be changed. Emissions from crematoria will no longer be subject to individual licensing procedures, but will be regulated through general binding rules. These take full account of OSPAR Recommendation 2003/4.</p>

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<p>Norway</p>	<p>Calculation of loads. Knowledge on emissions is uncertain because of lack of reporting from crematories. The emissions are estimated by an average of 5 g mercury per corps for crematories not applying mercury removal techniques. The emissions from crematories applying mercury removal techniques are estimated by assuming that these techniques will reduce the emissions by 90 %.</p> <p>Additional information. The number of cremations varies from 14 000 to 15 000 per year (around 35 % of total corps). Norway has regulation for crematoria since 1 January 2003. For units existing before this date the regulation enter into force from 1 January 2007. The regulation is aiming at reducing <i>i.e.</i> the mercury emissions from crematoria through emission limits (above a certain activity rate).</p>
<p>Spain</p>	<p>Calculation of loads. No information.</p> <p>Additional Information. Measures of mercury emissions from crematories are not included under the E-PRTR register and so, it is difficult to get information on this activity. Currently, there is some information that will be published in the SETAC-2010 regarding estimations of mercury releases from cremations in the Basque Country. This information will be provided when available.</p> <p>It is indicated an average percentage of 30% cremations compared to burial. Although this figure can be higher in medium and big cities reaching even 60%, comparing to rural locations where burial is the main practice.</p> <p>According to recent law, crematories must be installed preferably near cemeteries. In general, the installations usually have 1 oven, which incinerate 3-4 corpses/day.</p> <p>Cremation is an increasing practice in the Spanish society, especially when considering increasing difficulties and costs of burials. There is no information about the average size of population served by crematorium. Usually there are concentrated in medium or high populated cities, serving urban areas.</p>
<p>Sweden</p>	<p>Calculation of loads. The average amount of mercury has been assessed to 3 g based on some measurements. The average removal of mercury from flue gas, when removal equipment is in place is assessed at 95%.</p>

<p>Switzerland</p>	<p>Calculation of loads. Air emissions in 2008 of Hg from crematoria are estimated at ca. 50 kg based on an overall emission factor of 1 g Hg per cremation. This figure contributes with 4.4 % to the total of Hg emitted in 2008.</p> <p>Additional information. Crematoria must fulfil the requirements of the Ordinance on Air pollution control (OAPC, 1985). Crematoria must respect the following requirements :</p> <ul style="list-style-type: none"> - emission limitations according to the OAPC (Annex 1, number 5). The requirements apply to crematoria with one or several heating furnaces. The limit value of emission for mercury is 0.2 mg/m³ for a mass flow of 1 g/hour. - emission limitations according to the state of technique <p>The requirements apply right away for new installations. For existing installations, a time limit for remediation is fixed by the executive authority. According to article 10 of OAPC :</p> <ul style="list-style-type: none"> - the standard time limit is 5 years. - shorter time limit of at least 30 days are set when : <ul style="list-style-type: none"> a. the remediation can be executed without major investments b. the emissions are more than three times the value laid down for the preventive emission limit c. the ambient air pollution levels caused by the installation alone are excessive - longer time limits up to a maximum of 10 years shall be set if : <ul style="list-style-type: none"> a. the emissions are less than one and a half times the value laid down for the preventive emission limit b. neither Letter a nor Letter c of the previous paragraph are met. <p>Measurements in existing installations reveal that the emission limit value for mercury is generally exceeded by factor 3 to 10. The cantonal authority proceeds to emission measures each three years.</p> <p>Nowadays several techniques for flue gas cleaning exist that allow the reduction of mercury emissions. These new technologies also treat dioxins and furans. Since 2000, the supervisors of crematoria have voluntarily agreed on a coordinated procedure of remediation of Swiss crematoria. A task group from the Swiss society of air protection officers (Cercl Air) has been created to elaborate a recommendation for the cantonal and communal authorities that are in charge of the execution of the OAPC. The recommendation (2003) applies to all the Swiss crematoria, whatever energy source is used (electricity, natural gas, etc.). It doesn't apply to crematoria for animals, nor the installations that incinerate only organic human waste, special waste or similar.</p>
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<p>UK</p>	<p>Calculation of loads. No new information (in 2004, the factor was 0.9 g of mercury per cremation)</p> <p>Additional information. In England and Wales, all new crematoria are required to fit mercury control equipment but those conducting fewer than 750 cremations a year have till 2012 to do this.</p> <p>In 2005 Defra and the Welsh Assembly Government established a 'burden sharing' system to reduce mercury emissions from existing crematoria. It specifies that 50% of cremations (using 2003 baseline figures) should be subject to mercury abatement by end-2012</p> <p>Under burden sharing, crematoria operators can choose whether to fit mercury abatement equipment or contribute to the costs of others doing so</p> <p>Local authorities regulate crematoria under the Environmental Permitting Regulations 2000 (EPR). Defra expects local authority EPR regulators to impose conditions in EPR permits so as to give formal effect to the decisions of each crematorium to either fit abatement or contribute financially to others.</p> <p>A Direction has been issued to Local Authorities in England and Wales directing them to include in the Environmental Permits of all Crematoria in a requirement for them to provide the following information by 31st October 2008:</p> <ul style="list-style-type: none">a) whether they intend to fit equipment to abate mercury emissions by 31 December 2012b) if abatement will be fitted,<ul style="list-style-type: none">(i) what proportion of cremations (using as a baseline the number of cremations undertaken in 2003) it is intended will be subject to the abatement measures(ii) what steps have been taken to arrange financing and the necessary procurementc) if abatement will not be fitted, what arrangements he intends to put in place to offset the cost of abatement at another crematorium in accordance with the statutory guidance on burden sharing issued in guidance note AQ1(05)*, and what steps have been taken to make such arrangements. <p>This information is to identify the actions that have already been taken within the crematoria sector to meet the 50% reduction of Mercury emissions by 2012.</p> <p>The website of the organisation running the main burden sharing scheme is http://www.cameoonline.org.uk/ .</p>
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