

CONVENTION ON THE PROTECTION OF THE MARINE
ENVIRONMENT OF THE BALTIC SEA AREA

HELSINKI COMMISSION - Baltic Marine HELCOM 16/17
Environment Protection Commission

Annex 12

16th Meeting
Helsinki, 14-17 March 1995

HELCOM RECOMMENDATION 16/8

Adopted 15 March 1995
having regard to Article 13, Paragraph b)
of the Helsinki Convention

**LIMITATION OF EMISSIONS INTO ATMOSPHERE AND DISCHARGES INTO WATER FROM INCINERATION OF
HOUSEHOLD WASTE**

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to take all appropriate measures to control and minimize land-based pollution of the marine environment of the Baltic Sea Area,

RECALLING ALSO that according to Paragraph 2 of Article 2 of the Helsinki Convention land-based pollution includes also airborne pollution,

RECALLING ALSO that according to Paragraph 8 of Article 6 of the Helsinki Convention, the Contracting Parties shall endeavour to use best practical means in order to minimize airborne pollution of the Baltic Sea by noxious substances,

RECALLING ALSO the Ministerial Declaration of the ninth meeting of the Helsinki Commission,

RECALLING ALSO the Baltic Sea Declaration of 1990,

RECOGNIZING the importance of reducing the emissions into atmosphere and discharges into water from municipal waste incineration by

(i) minimizing the hazards to human health and to the environment from toxic, persistent and bioaccumulative substances by the application of best environmental practice and best available technology;

(ii) developing processes and techniques for the collection and treatment of atmospheric emissions,

RECOMMENDS to the Governments of the Contracting Parties to the Helsinki Convention that the application of best environmental practice and best available technology to waste minimization, handling and incineration should include the actions described in Appendix,

RECOMMENDS ALSO that

1. Atmospheric emissions from waste incineration may, for new plants (starting operation after 1 January 1996) should not exceed the following levels at 9 per cent CO₂ (or 11 per cent O₂):

HC150 mg/m³ (ndg), monthly mean value

Hg0.05 mg/m³ (ndg), inspection value for new plants

Dust30 mg/m³ (ndg), weekly mean value

CO100 mg/m³ (ndg), monthly mean value, for plants with a capacity over 25 000 tonnes/year

200 mg/m³ (ndg), monthly mean value, for plants with a capacity less than 25 000 tonnes/year,

2. Atmospheric emissions of dioxins (TCDD-equivalents according to the International (ITEF) Model) should as a guidance value not exceed 0.1 ng/m³(ndg) for new plants.

Internationally accepted standards should be used for dioxin sampling and analysis.

3. Aqueous discharges after wet condensation systems or flue gas scrubbers may, for new plants not exceed the following levels on a yearly basis:

Cd	15 mg/tonne incinerated waste
Hg	15 mg/tonne incinerated waste
Pb	30 mg/tonne incinerated waste
Co	150 mg/tonne incinerated waste
Cu	150 mg/tonne incinerated waste
Cr	150 mg/tonne incinerated waste
Ni	150 mg/tonne incinerated waste
Zn	300 mg/tonne incinerated waste

pH-level in discharged water may not be below 7.0,

DECIDES that the specific actions described in the Appendix should be kept updated and be revised when appropriate by the Technological Committee,

DECIDES ALSO that this Recommendation, in the light of EU regulations for this sector, be re-examined in 1999 regarding requirements and limit values, for new as well as for existing plants.

RECOMMENDS FURTHER that the Contracting Parties report to the Commission every three years starting 2000.

Appendix

Application of best environmental practice (BEP) and best available technology (BAT) to waste minimization, handling and incineration should include the following actions:

A. Waste minimization and recycling

Introduction of general policies aiming at an overall minimization of total mass of domestic waste and recycling of materials whenever possible. Such policies would reduce emissions and discharges by reducing the total amount of waste that has to be handled and disposed of. Less production of fresh raw materials might also reduce the environmental load.

Recyclable material in household waste are e.g. scrap metals, newsprints, cardboard paper, glass, aluminium cans and tin cans;

B. Dangerous materials

Introduction of general policies aiming at an overall reduction or total elimination of heavy metals, halogenated substances and toxic compounds in consumer goods, packaging etc. for mass consumption. Product control measures are effective way of keeping environmentally dangerous substances out of the domestic waste stream and thus reducing overall emissions from waste incineration;

C. Waste collection and separation

Introduction of general waste collection and separation schemes as a means of controlling the quality of the waste fed to the incinerators. Recyclables, hazardous waste and similar dangerous materials as well as non-combustibles should not enter incinerators for household waste, in order to reduce the overall emissions.

Collection schemes should include source separation of recyclables and hazardous products such as batteries containing Hg or Ni/Cd, used motor oils, solvents, paints mercury-containing switches and thermometers, pharmaceuticals, lead accumulators, chlorinated plastics, etc.;

D. Open-air incineration

Open-air incineration of household waste should not be allowed, not even in small scale, because such incineration gives rise to very high specific pollution loads.

Routines at landfill sites for domestic waste should be carried out in such a way that unintentional fires can be avoided to a very high extent. One single accident may produce more pollution than emission from one whole year's operation in a good full-size incinerator;

E. The waste incineration process

The incineration process should fulfill the following requirements:

-recovery of heat for production of hot water for district heating systems, steam for electricity generation etc., thus eliminating the need for usage of other fuels for the energy production,

-controlled combustion temperature, minimum 850°C in the incinerator. When starting and stopping the process or whenever the temperature falls below 850°C, auxiliary fuels should be used,

-controlled air supply,

-instrumentation for continuous monitoring of the combustion process as a means of efficient operation of the incinerator. The instrumentation should include monitors for carbon monoxide, carbon dioxide or oxygen, nitrogen oxides, opacity or dust in the flue gases as well as combustion temperature,

-efficient cooling of the flue gases and frequent particle removal (soot blowing), minimizing the residence time for the flue gases in the temperature interval of 600°C-200°C,

-fabric filters or equally efficient arrestment systems for removal of dust from the flue gases,

-efficient arrestment systems for removal of acids, organics and organohalogens, e.g. dioxins, from the flue gases. Dry or semi-dry lime systems as well as wet systems could be applicable,

-treatment of condensates and liquid remainders from the flue gas purification by chemical precipitation with lime, sulphide and polymer. Sedimentation, sand filtration and filtration with activated carbon,

-handling of slag and fly-ash in closed or wet systems to avoid spreading of dust and secondary pollution. Fly-ash disposal in dry landfills to avoid leaching. Pretreatment by solidification should be carried out if the concentration of leachable Pb or Cd is high,

-training of staff to secure skilled operation of the incinerator at all times.

**REPORTING FORMAT FOR HELCOM RECOMMENDATION 16/8
CONCERNING LIMITATION OF EMISSIONS INTO ATMOSPHERE AND
DISCHARGES INTO WATER FROM INCINERATION OF HOUSEHOLD WASTE**

1. Country

2. Number of new plants (operation started after 1 January 1996) and the annual amount of waste incinerated in each plant

3. Number of new plants complying with the Recommendations including available emission data on

a) HCl emissions

b) Hg emissions

c) dust emissions

d) CO emissions

e) dioxin emissions

f) metals discharges