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**EXECUTIVE BODY FOR THE CONVENTION ON LONG-RANGE
TRANSBOUNDARY AIR POLLUTION**

Working Group on Strategies and Review

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Geneva, 1–5 September 2008
Item 4 of the provisional agenda

**OPTIONS FOR REVISING THE PROTOCOL ON
PERSISTENT ORGANIC POLLUTANTS**

Note by the secretariat

1. The present document has been prepared by the secretariat and the Chair of the Working Group on Strategies and Review in consultation with the Co-Chairs of the Task Force on Persistent Organic Pollutants (POPs) at the request of the Working Group at its forty-first session¹. It lists draft proposals for revising the Protocol on POPs, with a view to providing a basis for negotiating possible amendments to the Protocol². In addition, it presents in its annex the possible amendments to article 14, along with a paragraph for inclusion in the covering decision, proposed by the ad hoc group of legal experts.

¹ ECE/EB.AIR/WG.5/90, para. 20 (c).

² The document refers to the appropriate article and paragraph numbers of the Protocol and its annexes. New text that is proposed to be inserted into the Protocol is presented within square brackets.

2. The present document builds on and revises the document ECE/EB.AIR/WG.5/2008/4 that the Working Group considered at its forty-first session (WGSR-41; 14–17 April 2008). It reproduces those proposals from the above document on which the Working Group could not yet reach a consensus at this session. In addition, it lists the amendment proposals and positions that the delegations put forward during this session. It does not contain the proposals that the Working Group already agreed on and which it decided to forward to the Parties to the Protocol at the twenty-sixth session of the Executive Body. For the decisions of the Working Group, delegations are invited to consult the report on its forty-first session (ECE/EB.AIR/WG.5/2008/90, para. 20).

3. The proposals drawn from the document ECE/EB.AIR/WG.5/2008/4 were based on the outcomes of the review of the sufficiency and effectiveness of the Protocol obligations (EB.AIR/WG.5/2004/1 and EB.AIR/WG.5/2005/1) as well as on the exploration of the management options for the seven “new” substances accepted as POPs by the Parties to the Protocol³ (ECE/EB.AIR/WG.5/2007/14). Furthermore, they reflected the review of the best available techniques (BAT) and the proposed changes to the emission limit values (ELVs) by the Task Force on POPs (EB.AIR/WG.5/2004/1 and EB.AIR/WG.5/2005/1, paras. 27–37)⁴.

4. The Working Group is invited to consider and agree on the proposed amendments and forward them to the Parties to the Protocol at the twenty-sixth session of the Executive Body. In addition, the Working Group may wish to consider the proposed amendments to annexes IV and V to the Protocol prepared by an ad hoc group of technical experts in parallel to and in between the Working Group’s forty-first and forty-second sessions. These proposals are presented in an informal document (available on the Convention website).

I. PROPOSED AMENDMENTS TO ANNEX I

5. Parties may wish to consider the below proposals for listing substances in annex I. These proposals, based on the management options suggested by the Task Force on POPs (ECE/EB.AIR/WG.5/2007/14, paras. 6–103), were presented to the Working Group at its forty-first session (ECE/EB.AIR/WG.5/2008/4, chapter I). In addition, Parties are invited to consider the positions and proposals put forward by the delegations during the WGSR-41.

³ Hexachlorobutadiene (HCBd), octabromodiphenyl ether (OctaBDE), pentachlorobenzene (PeCB), pentabromodiphenyl ether (PentaBDE), perfluorooctane sulfonates (PFOS), polychlorinated naphthalenes (PCN), and short-chained chlorinated paraffins (SCCP).

⁴ For more details, see: <http://www.unece.org/env/popsxg/3rdmeeting.htm>, individual chapters of sufficiency and effectiveness review 2 (e) BAT for major stationary sources: <http://www.unece.org/env/popsxg/2005/e%20BAT%20for%20major%20stationary%20sources%202.pdf>.

- (a) List **PFOS** with exemptions for production for those critical uses identified in annex II;

Definitions of PFOS proposed at WGSR-41

- (i) **European Union (EU):** PFOS including the 96 congeners (Perfluorooctane sulfonates C₈F₁₇SO₂X (X=OH, metal salt, halide, amide or other derivatives including polymers) [in concentration higher than 0,005 per cent by mass];
- (ii) **United States:** PFOS (Perfluorooctane sulfonic acid C₈F₁₇SO₂X (X=OH, CAS No. 1763-23-1);
- (iii) **Decision POPRC-3/5 of the Persistent Organic Pollutants Review Committee under the UNEP⁵ Stockholm Convention:** “Perfluorooctane sulfonic acid (CAS No. 1763-23-1), its salts and perfluorooctane sulfonyl fluoride (CAS No. 307-35-7)”.

Proposals on the implementation requirements for PFOS made at WGSR- 41

- (i) **Norway:** None except for use as specified in Annex II and stockpiles of fire-fighting foam containing more than 0,005 % PFOS by weight to be identified, collected and destroyed;
- (ii) **EU:** First proposal: None except for following uses:
- a. Photo resists or anti reflective coatings for photolithography processes;
 - b. Photographic coatings applied to films,
 - c. Papers, or printing plates;
 - d. Mist suppressants for non-decorative hard chromium (VI) plating and wetting agents for use in controlled electroplating systems;
 - e. Hydraulic fluids for aviation;
 - f. Fire-fighting foams that have been placed on the market before the ban can be used until [2011];
- Second proposal: Add qualification: “Restricted uses of PFOS shall be reassessed no later than two years after the entry into force of the Protocol”;

⁵ United Nations Environment Programme.

- (iii) **United States:** None except for following uses:
- a. As an intermediate to produce chemical substances for semiconductor manufacturing, photographic coatings and hydraulic fluids for aviation;
 - b. As a component of an etchant used in the plating process to produce electronic devices;

(b) List **C-PentaBDE**^{6,7,8} to eliminate its production and use with an exemption for use in military airplanes; or alternatively, list TetraBDE and PentaBDE congeners individually to eliminate the production and use of commercial mixtures containing these congeners at concentrations greater than 0.1 per cent by weight⁹;

Proposals on C-PentaBDE and its implementation requirements made at WGSR-41:

- (i) **Canada:** List C-PentaBDE or alternatively, list TetraBDE and PentaBDE and hexaBDE congeners individually to eliminate the production and use of commercial mixtures containing these congeners at concentrations greater than 0.1 per cent by weight;

⁶ Commercial PentaBDE and commercial OctaBDE contain polybrominated diphenyl ethers with varying degrees of bromination, typically consisting of penta- to deca-bromodiphenyl ether isomers (ECE/EB.AIR/WG.5/2007/14).

⁷ Alternatively the following definition could be considered: “2,2', 4,4'- tetrabromodiphenyl ether (BDE-47, CAS No. 40088-47-9) and 2,2',4,4',5-pentabromodiphenyl ether (BDE-99, CAS No. 32534-81-9) and other tetra- and pentabromodiphenyl ethers present in commercial pentabromodiphenyl ether, using BDE-47 and BDE-99 as markers for enforcement purposes.” according to the Decision POPRC-3/1 of the Persistent Organic Pollutants Review Committee, set up under the UNEP Stockholm Convention on POPs.

⁸ According to information submitted by the Bromine Science and Environmental Forum: “The most scientifically sound, enforceable and practical option would listing those specific Tetra, Penta and HexaBDE isomers present in the commercial products that have been evaluated (BDEs, 47, 85, 99, 100, 153, 154). These 6 BDEs account for more than 99 per cent of the BDE mass found in historic c-pentaBDE and also account for the Br6 BDEs found in c-OctaBDE”.

⁹ Another option would be a stepwise phase-out with limited derogations for specific uses and a reassessment of the allowed uses in the light of technical progress and additional knowledge. In addition, releases from waste from products and/or articles containing c-PentaBDE could be addressed through provisions on waste handling and waste treatment in annexes V and VIII. Special attention should be given to reducing emissions by adding recycling and shredder plants to annex VIII, with guidance on BAT/BEP (best environmental practices) in annex V (ECE/EB.AIR/WG.5/2007/14, paras. 28 and 29).

(ii) **EU:** List tetraBDE, pentaBDE, hexaBDE, heptaBDE (and octaBDE and nonaBDE) congeners individually to eliminate the production and use of mixtures containing more than 0.1% by weight;

(iii) **Norway:** (Implementation requirements) “Use: none. Parties must take appropriate measures to ensure that recycling processes of articles manufactured or in use by the implementation date, do not result in recovered material containing 0.1 % or more of C-pentaBDE by weight.”

(c) List **C-OctaBDE**, to eliminate its production and use; or alternatively, list PentaBDE and HexaBDE congeners individually to eliminate the production and use of commercial mixtures containing the congeners at concentrations greater than 0.1% by weight;

Proposals on C-OctaBDE made at WGSR-41

(i) **Canada:** List C-OctaBDE or alternatively list TetraBDE, PentaBDE and HexaBDE congeners individually to eliminate the production and use of commercial mixtures containing the congeners at concentrations greater than 0.1% by weight;

(ii) **Norway:** (Implementation requirements) “Use: none. Parties must take appropriate measures to ensure that recycling processes of articles manufactured or in use by the implementation date, do not result in recovered material containing 0.1 % or more of penta/octa by weight”;

(iii) **EU:** List congeners: tetraBDE, pentaBDE, hexaBDE and heptaBDE and octaBDE and nonaBDE individually to eliminate the production and use in mixtures containing more than 0.1% by weight.

(d) List SCCPs, to eliminate production and use; or alternatively, list SCCPs in annex II and specify allowed uses and related conditions in the implementation requirements¹⁰;

¹⁰ These options could be related to specific conditions for a stepwise phase-out such as limited derogations for specific uses and a reassessment of the allowed uses in the light of technical progress and additional knowledge. In addition, waste handling and treatment options for products and articles containing SCCP could be addressed in annexes V and VIII with guidance on BAT/BEP in annex V.

Proposals on listing HCH made at the WGSR-41

- (e) **EU:** List **HCH** (CAS: 608-73-1) to eliminate its production and use, without exemptions;
- (i) **United States:** “Eliminate its production and use with the exception of uses for ‘public health purposes and veterinary topical insecticide’, in case there are no other alternatives”;
- (f) List PCB¹¹, to eliminate use, as specified in annex II;
- (g) **DDT**¹²: update the specific uses exemptions (Note by the secretariat: advice to be provided by the World Health Organization (WHO)).

II. PROPOSED AMENDMENTS TO ANNEX II

6. On the basis of the sufficiency and effectiveness review (EB.AIR/WG.5/2005/1 paras. 17 –23 and EB.AIR/WG.5/2004/1, annex I), Parties may wish to consider the following proposals relating to annex II:

- (a) Delete the specific uses of technical **HCH**, and restrict the use of lindane to the following uses only [1. seed treatment and 2. public health and veterinary topical insecticide.] (Delete other uses of lindane);

Proposals on lindane made at WGSR-41

- (i) **Norway:** Delete all restricted uses of lindane in annex II and list HCH in annex I without exemptions;

¹¹ **Proposals for defining PCBs (provided after WGSR-41):**

(i) Definition in line with directive 96/59/EEC: “For countries **within the geographical scope of EMEP**, PCBs include: Polychlorinated biphenyls; Polychlorinated terphenyls (PCT); Ugilecs (Monomethyl-tetrachlorodiphenyl methane, Monomethyl-dichloro-diphenyl methane, Monomethyl-dibromo-diphenyl methane; and any mixture containing any of the abovementioned substances in a total of more than 0,005 % by weight”;

(ii) **Canada:**

- a. “Parties that are not members of the European Union define PCBs in accordance with their national legislative frameworks”; or alternatively
- b. “ Parties define PCBs in accordance with their national legislative frameworks”

¹² In line with the request from the Working Group at its forty-first session, WHO has been invited to provide advice on the proposed elimination of DDT production in countries that are Parties to the Protocol in time for the forty-second session of the Working Group.

- (ii) **EU:** HCH (CAS: 608-73-1) should be listed in annex I without exemptions.
- (b) Concerning the conditions for specific use of **PCB**¹³;
- (i) After paragraph (a), add a new paragraph (b) that reads: [“The elimination of the use of identifiable PCBs in equipment (i.e. transformers, capacitors or other receptacles containing residual liquid stocks) containing PCBs in volumes greater than 0.05 dm³ and having a concentration of 0.005 per cent PCBs or greater, as soon as possible, but no later than 31 December 2015, or 31 December 2020 for countries with economies in transition”];
- (ii) Change current paragraph (b) into paragraph (c);
- (iii) Change current paragraph (c) into paragraph (d); and add reference to paragraph (b);
- (iv) Add new paragraph (e) that reads: [“Ensure that equipment containing polychlorinated biphenyls, as described in subparagraphs (a) and (b), shall not be exported or imported except for the purpose of environmentally sound waste management];
- (v) Add new paragraph (f) that reads [“Endeavour to identify other articles containing more than 0.005 per cent polychlorinated biphenyls (e.g. cable-sheaths, cured caulk and painted objects) and manage them in accordance with paragraph 3 of Article 3”];
- (vi) Add new paragraph (g) that reads: [“Promote the following measures to reduce exposures and risk to control the use of polychlorinated biphenyls:
- (i) Use only in intact and non-leaking equipment and only in areas where the risk from environmental release can be minimized and quickly remedied;
- (ii) Not use in equipment in areas associated with the production or processing of food or feed;

¹³ In line with provisions in annex A, part II of the Stockholm Convention on POPs.

(iii) When used in populated areas, including schools and hospitals, all reasonable measures to protect from electrical failure which could result in a fire, and regular inspection of equipment for leaks”];

Proposals on conditions for specific use of PCB made at WGSR-41

- (i) **Norway:** “Parties shall make determined efforts designed to lead to:
- (a) The elimination of the use of identifiable PCBs in equipment (i.e. transformers, capacitors or other receptacles containing residual liquid stocks) containing PCBs in volumes greater than 5 dm³ and having a concentration of 0,05 % PCBs or greater, as soon as possible, but no later than 31 December [2010], or 31 December [2015] [2025] for countries with economies in transition;
- (b) (i) The elimination of the use of identifiable PCBs in equipment (i.e. transformers, capacitors or other receptacles containing residual liquid stocks) containing PCBs in volumes greater than 0,05 dm³ and having a concentration of 0,005 % PCBs or greater, as soon as possible, but no later than 31 December [2015], or 31 December [2020] [2025] for countries with economies in transition; or alternatively;
- (b) (ii)¹⁴: Parties shall endeavour to identify and remove from use equipment (e.g. transformers, capacitors or other receptacles containing liquid stocks) containing greater than 0,005 percent PCBs and volumes greater than 0,05 dm³, as soon as possible, but no later than 31 December [2015], or 31 December [2020] for countries with economies in transition;
- (c) The destruction of or decontamination in an environmentally sound manner of all liquid PCBs referred to in subparagraphs (a) and (b) and other liquid PCBs containing more than 0,005 % PCBs not in equipment, as soon as possible but no later than 31 December 2015, or 31 December 2020 for countries with economies in transition;
- (d) The decontamination or disposal of equipment referred to in subparagraphs (a) and (b) in an environmentally sound manner;

¹⁴ The language in (b)(ii) is drawn from the Stockholm Convention on POPs, annex A, part II.

Parties shall:

(e) Ensure that equipment containing polychlorinated biphenyls, as described in subparagraphs a) and b), shall not be exported or imported except for the purpose of environmentally sound waste management;

(f) Endeavour to identify other articles containing more than 0,005 per cent polychlorinated biphenyls (e.g. cable-sheaths, cured caulk and painted objects) and manage them in accordance with paragraph 3 of Article 3;

(g) Promote the following measures to reduce exposures and risk to control the use of polychlorinated biphenyls:

(i) Use only in intact and non-leaking equipment and only in areas where the risk from environmental release can be minimised and quickly remedied;

(ii) Not use in equipment in areas associated with the production or processing of food or feed;

(iii) When used in populated areas, including schools and hospitals, all reasonable measures to protect from electrical failure which could result in a fire, and regular inspection of equipment for leaks”;

(ii) **Canada:** 6(a) The elimination of the use of identifiable PCBs in equipment (i.e. transformers, capacitors or other receptacles containing residual liquid stocks) containing PCBs in volumes greater than 5 dm³ and having a concentration of 0,05 % PCBs or greater, as soon as possible, but no later than 31 December 2025 for all countries;

(c) For **PFOS**, specify the following uses: “1. For semiconductor manufacturing; 2. As photographic coatings; 3. For chromium plating; 4. As hydraulic fluids for aviation”;

(d) For **c-PentaBDE**, specify the following uses: [“1. Specific uses in military aircrafts; 2. Use of imported articles”] and include the following condition: [“The restricted use of imported articles with C-PentaBDE shall be reassessed¹⁵”];

¹⁵ Annex II could specify a time frame or “a trigger” for the reassessment.

(e) For **SCCP**, specify the following uses: “1. Dam sealants and conveyor belts for underground mining; 2. Non-emissive applications i.e. as a plasticizer in paints, coatings and sealants and as a flame retardant in rubber, textiles and plastics”;

Proposal on implementation requirements for SCCP made at WGSR 41

(i) **United States** (alternative to use 2) “Non-emissive applications i.e. as a plasticizer or flame retardant in paints, inks, coatings and sealants and as a rubber, textiles and plastics and insulation fiber”.

III. PROPOSED AMENDMENTS TO ANNEX III

7. Parties may wish to consider the following proposals for amending annex III:

(a) Specify the reference year for PCBs, PCN, PeCB and HCBd as follows: [“2000; or an alternative year from 1995 to 2005 inclusive, specified by a Party upon ratification, acceptance, approval or accession”];

(b) Add a footnote referring to PCBs that reads: [“c/ Polychlorinated biphenyls emitted as unintentional by-product”].

Proposals made at WGSR 41

(i) **EU**: For PCN, PeCB and HCBd the emission inventory should be established on a voluntary basis, in derogation to article 9, paragraph 1 (b), to the Protocol, which provides for obligatory reporting of emissions.

IV. PROPOSED AMENDMENTS TO ANNEX IV

8. Parties may wish to consider the informal document on proposed amendments to the annexes IV and V to the Protocol on POPs prepared by an ad hoc group of technical experts in parallel to and in between the forty-first and forty second sessions of the Working Group on Strategies and Review (available on the website).

9. Parties may wish to consider the **proposal by the ad hoc group on technical experts** to replace the text in paragraph 6: “Emissions of different congeners of PCDD/F are given in toxicity equivalents (TE) in comparison to 2,3,7,8-TCDD using the system proposed by the NATO Committee on the Challenges of Modern Society (NATO-CCMS) in 1988” by the following new text: [“The toxicity of polychlorinated dibenzo-p-dioxins and dibenzofurans is

expressed using the concept of toxic equivalency which measures the relative dioxin-like toxic activity of different congeners of polychlorinated dibenzo-p-dioxins and dibenzofurans and coplanar polychlorinated biphenyls in comparison to 2,3,7,8-tetrachlorodibenzo-p-dioxin. The toxic equivalent factor values to be used for the purposes of this Convention shall be consistent with accepted international standards, commencing with the World Health Organization 2003 mammalian toxic equivalent factor values for polychlorinated dibenzo-p-dioxins and dibenzofurans and coplanar polychlorinated biphenyls. Concentrations are expressed in toxic equivalents”.]

10. Parties may wish to consider the following **proposals discussed by the ad hoc technical group** for amending annex IV, paragraph 7:

- (a) Decrease the emission limit value for medical solid waste from [0.5] to [0.1] ng TE/m³;
- (b) Decrease the emission limit value for hazardous solid waste from 0.2 to 0.1 ng TE/m³.
- (c) Introduce new emission limit values for additional emission source categories as follows:
 - (i) [“Electric Arc Furnace (for steel manufacturing): Existing facilities: 0.5 ng TE/m³; New facilities: 0.1 ng TE/m³”]; [0.4] For secondary production of copper, new facilities.
 - (ii) [“Non-hazardous industrial waste (burning more than 1 ton per hour): 0.1 ng TE/m³”]

11. Parties may wish to consider the **proposal by the EU** to introduce new ELVs for additional emission source categories as follows:

- (a) “Furnaces for secondary production of copper, aluminium, lead or zinc: Existing facilities: [0,5] ng TE/m³, new facilities: [0.4] ng TE/m³”
- (b) “Sinter plants: Existing facilities: [0.5] ng TE/m³, new facilities: [0.4] ng/m³”.

V. PROPOSED AMENDMENTS TO ANNEX VII

12. As a result of the phase out of leaded petrol in most parts of the UNECE region, petrol-fuelled vehicles are no longer a relevant source of PCDD/PCDF¹⁶. Furthermore, diesel-powered engines that are formally a main source of fine particulates with PAH¹⁷ as a major component are subject to stricter controls for PM under regulations outside of the Protocol¹⁸.

VI. PROPOSED AMENDMENTS TO ANNEX VIII

13. Parties may wish to consider the following proposals to amend annex VIII:

(a) Amend the description of the category in the list of categories as follows:

- (i) At the end of the description of category 1, insert [“or of non-hazardous industrial waste.”];
- (ii) At the end of the description of category 3, insert: [“primary production of magnesium”]; chlorine based methods.
- (iii) At the end of the list, insert a new category 13 with a description reading: [“Large volume production of chlorinated hydrocarbons”];
- (iv) Insert a new category 14 with a description reading: [“Installations for recycling or shredding of municipal and industrial waste”].

14. Parties may wish to consider the following proposal by the EU: “Instead of the inclusion of “primary production of magnesium” and the new category 13 “large volume production of chlorinated hydrocarbons”, insert “specific chemical production processes” as a new point 7 bis and “other thermal processes used in metallurgic industry” as a new point 5 bis.

VII. PROPOSED AMENDMENTS TO ANNEX V

15. Parties may wish to consider the informal document on proposed amendments to the annexes IV and V to the Protocol on POPs prepared by an ad hoc group of technical experts in

¹⁶ PCDDs – polychlorinated dibenzodioxins; PCDFs – polychlorinated [dibenzofurans](#).

¹⁷ Polycyclic aromatic hydrocarbons.

¹⁸ For more details see the paragraphs 33 to 37 of document EB.AIR/WG.5/2005/1.

parallel to and in between the forty-first and forty second sessions of the Working Group on Strategies and Review. The informal document is available on the internet.

16. Parties may wish to consider the following proposal by the European Union¹⁹: “Releases from products and/or articles containing substances listed in annex I or II when they become waste²⁰, should be addressed in annexes V and VIII, specifically emission from recycling plants, as proposed in document 2008/4”.

17. Following the possible introduction of new substances in annex III, it may become necessary to introduce additional control techniques into annex V. The following elements could be considered by technical experts in their work:

(a) At the end of annex V, insert three new chapters VI, VII and VIII, with new paragraphs 77 to 82 reading:

(i) [“VI. CONTROL TECHNIQUES FOR THE REDUCTION OF HCB EMISSIONS

(A) A. Production of secondary aluminium

77. BAT is to replace hexachloroethane as a degassing agent by degassing agents not containing chlorine, e.g. argon or nitrogen.”

(ii) VII. CONTROL TECHNIQUES FOR THE REDUCTION OF EMISSIONS OF BROMINATED OR CHLORINATED FLAME RETARDANTS OR PFOS

78. Penta BDE, OctaBDE (or “commercial”) and short-chained chlorinated paraffins (SCCPs) have been used as flame retardants in many products, such as electronic apparatus (e.g. business machines, personal computers), furniture and car interiors and other equipment. After service, these products are processed as waste or shredded before

¹⁹ The EU has concern about POP emissions from waste management techniques processing products and articles containing POPs (e.g. cars, computers, furniture). These waste management techniques include, for example, shredding and recycling.

²⁰ According to Article 3, paragraph 3, for substances listed in Annex I or II of the Protocol on POPs: “Each Party should develop appropriate strategies for identifying articles still in use and wastes containing such substances, and shall take appropriate measures to ensure that such wastes and such articles, upon becoming wastes, are destroyed or disposed of in an environmentally sound manner”.

recycling, incineration or landfilling. To reduce emissions of brominated and chlorinated flame retardants, emissions have to be controlled and reduced.

(A) Recycling or shredding municipal and industrial waste

79. BAT is to perform dismantling, crushing, shredding and sieving operations in areas fitted with extractive vent systems linked to abatement equipment when handling materials that can generate emission to air; BAT is to treat the exhaust air with a dust filter and/or a regenerative post-combustion for a residue-free combustion. An upstream pre-coat filter (activated carbon and lime mixture) to collect the adhesive components can also be used.

80. BAT is to perform washing processes considering the washed components that may be present in the items to be washed (e.g. solvents) and to treat the washings in the same way as the waste from which they were derived. The resulting wastewater can be treated in a wastewater treatment plant or re-used in the installation”.

(iii) VIII. CONTROL TECHNIQUES FOR THE REDUCTION OF HEXACHLOROBUTADIENE EMISSIONS

A. Non-ferrous metals production; Primary production of magnesium

81. Information on BAT for removal of hydrocarbons in primary production of magnesium is summarized in table 10.

Table 10: BAT for removal of hydrocarbons in production of magnesium

Pollutant	Emissions associated with the use of BAT	Techniques that can be used to reach these levels	Comments
Dioxins and hydrocarbons from the chlorination and electrolysis in the Mg production	Total destruction efficiency > 99.9%	Multi-stage scrubbers connected with a wet EP and an afterburner and injection of activated carbon	Dioxin emissions are < 10 µg/t TEQ for the MgCl ₂ brine dehydration process instead of 53 µg/t TEQ for the process which needs a chlorination step. The MgCl ₂ brine dehydration process is therefore regarded as BAT for new plants.
<p>Note: collected emissions only. Associated emissions are given as daily averages based on continuous monitoring during the operating period. In cases where continuous monitoring is not practicable the value will be the average over the sampling period. For the abatement system used, the characteristics of the gas and dust will be taken into account in the design of the system and the correct operating temperature used.</p>			

B. Production of chlorinated hydrocarbons

82. BAT to reduce emissions of HCBD from production of chlorinated hydrocarbons is based on treatment of off-gas to reduce HCBD concentrations and on reduction of fugitive emissions. Abatement techniques to reduce HCBD in off-gas can be based on adsorption, e.g. use of activated carbon, or absorption, e.g. use of wet scrubbers or cryogenic condensation by cooling the off-gas to very low temperatures.”].

Annex

**PROPOSED AMENDMENTS TO ARTICLE 14 TO THE PROTOCOL
BY THE AD HOC GROUP OF LEGAL EXPERTS²¹**

A. Text for inclusion in the covering decision

Any Party that was not already a Party on *[insert date of adoption of amendment to article 14]* should declare in its instrument of ratification, acceptance, approval or accession if it does not intend to be bound by the procedure set out in Article 14, paragraph 5bis as regards the amendment of annexes I-IV, VI and VII.

B. Amendments to Article 14

Article 14

AMENDMENTS

1. Any Party may propose amendments to the present Protocol.
2. Proposed amendments shall be submitted in writing to the Executive Secretary of the Commission, who shall communicate them to all Parties. The Parties meeting within the Executive Body shall discuss the proposed amendments at its next session, provided that the proposals have been circulated by the Executive Secretary to the Parties at least 90 days in advance.
3. Amendments to the present Protocol and, [subject to paragraphs 5bis and 5ter below,] to annexes I to IV, VI and VIII, shall be adopted by consensus of the Parties present at a session of the Executive Body, and shall enter into force for the Parties which have accepted them on the ninetieth day after the date on which two thirds of th[os]e [that were] Parties [at the time of their adoption] have deposited with the Depositary their instruments of acceptance thereof. Amendments shall enter into force for any other Party on the ninetieth day after the date on which that Party has deposited its instrument of acceptance thereof.
4. Amendments to annexes V and VII shall be adopted by consensus of the Parties present at a session of the Executive Body. On the expiry of 90 days from the date of its communication to all Parties by the Executive Secretary of the Commission, an amendment to any such annex shall become effective for those Parties which have not submitted to the Depositary a notification in accordance with the provisions of paragraph 5 below, provided that at least sixteen Parties have not submitted such a notification.

²¹ Proposed new text is presented between presented within square brackets.

5. Any Party that is unable to approve an amendment to annex V or VII shall so notify the Depositary in writing within 90 days from the date of the communication of its adoption. The Depositary shall without delay notify all Parties of any such notification received. A Party may at any time substitute an acceptance for its previous notification and, upon deposit of an instrument of acceptance with the Depositary, the amendment to such an annex shall become effective for that Party.

5. 5bis. (a) Amendments to annexes I-IV, VI and VIII shall be adopted by consensus of the Parties present at a session of the Executive Body. On the expiry of one year from the date of its communication to all Parties by the Executive Secretary of the Commission, an amendment to any such annex shall become effective for those Parties which have not submitted to the Depositary a notification in accordance with the provisions of subparagraph (b) below.

(b) Any Party that is unable to approve an amendment to annexes I-IV, VI and VIII shall so notify the Depositary in writing within one year from the date of the communication of its adoption. The Depositary shall without delay notify all Parties of any such notification received. A Party may at any time substitute an acceptance for its previous notification and, upon deposit of an instrument of acceptance with the Depositary, the amendment to such an annex shall become effective for that Party.

(c) Any amendment to annexes I-IV, VI and VIII shall not enter into force if an aggregate number of 16 or more Parties have either:

(i) Submitted a notification in accordance with the provisions of subparagraph (b) above; or

(ii) Not accepted the procedure set out in this paragraph and not yet deposited an instrument of acceptance in accordance with the provisions of paragraph 3 above.

5ter. For those Parties having accepted it, the procedure set out in paragraph 5bis above supersedes the procedure set out in paragraph 3 above in respect of amendments to annexes I-IV, VI and VII.]

6. In the case of a proposal to amend annexes I, II, or III by adding a substance to the present Protocol:

(a) The proposer shall provide the Executive Body with the information specified in Executive Body decision 1998/2, including any amendments thereto; and

(b) The Parties shall evaluate the proposal in accordance with the procedures set forth in Executive Body decision 1998/2, including any amendments thereto.

7. Any decision to amend Executive Body decision 1998/2 shall be taken by consensus of the Parties meeting within the Executive Body and shall take effect 60 days after the date of adoption.

Article 16

RATIFICATION, ACCEPTANCE, APPROVAL AND ACCESSION

1. The present Protocol shall be subject to ratification, acceptance or approval by Signatories.

2. The present Protocol shall be open for accession as from 21 December 1998 by the States and organizations that meet the requirements of article 15, paragraph 1.
