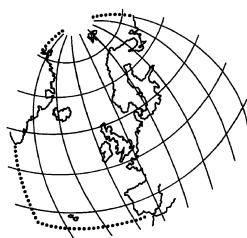


Review Statement for the OSPAR Background Documents for polychlorinated biphenyls (PCBs)



OSPAR Commission
2008

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 Community and Spain.

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 la Communauté européenne et l'Espagne.

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Introduction

OSPAR Background Documents are periodically reviewed and revised as necessary to take account of the latest information so that any additional risks to the marine environment can be highlighted, and additional measures and controls can be acknowledged.

In cases where a revision was not advised, a Review Statement supplementing the Background Document is prepared by the lead country, highlighting new developments since the adoption of the Background Document. The Review Statement will be updated, as appropriate, with information on progress on actions agreed in Background Documents.

The OSPAR Background Document on PCBs was first published in 2001 and updated in 2004 (monitoring strategy added) (OSPAR, 2004). Following a review by the OSPAR Hazardous Substances Committee in 2008, this Review Statement, prepared by Germany and Belgium who are lead countries for this chemical, was adopted.

Progress in implementing and completing agreed actions

The main OSPAR measure on PCBs is PARCOM Decision 92/3 on the phasing out of PCBs, which also requires the destruction of all identifiable PCBs. The choices of actions/measures to achieve the objective of OSPAR strategy related to PCBs are described under paragraphs 125 to 139 of the 2004 update of the OSPAR background document on PCBs (Chapter 5 – Choice for action/measures).

Paragraph 125 of the background document: Measures relating to the phasing out and environmentally safe destruction of PCBs

The measures are implemented in the EU through Directive 96/59/EC. Useful information has been published in a report by BIPRA (BIPRA, 2005). This report contains information from National PCB Inventories (see Table 4) on the amount of PCBs in large equipments that will be disposed of (calculated over the time period from 2000 to 2010 – Table 5). The BIPRA Report also holds valuable information on PCBs in demolition and construction waste, waste oils, shredder, etc.

Table 4: Inventoried amount on PCBs in remaining stocks and equipment in use from large PCB containing equipment (e.g. transformer, capacitors, hydraulic machinery) as reported by EU-Member States (source: BIPRA 2005)

Contracting Party	Liquid amount [tonnes]				Equipment amount [t]	Item of equipment	Reference and year
	All	Capacitors	Transformers	Others			
BE	7528	78	7450	(a)		32.812	National PCB Inventory 2001
DE	60						National PCB Inventory 2002
DK	50						National PCB Inventory 2004
ES	90 150				141 000		National PCB Inventory 2001
FR	33 462					545 610	National PCB Inventory 2002
LU	150						National PCB Inventory 2003
NL	0						National PCB Inventory 2000
PT	466					855	National PCB Inventory 2002
SE	0						National PCB Inventory 2000
UK	1000						National PCB Inventory 2001

^{a)} No estimation possible.

Table 5: Amount of PCBs in large equipments that will be disposed of (calculated over the time period from 2000 to 2010)

Contracting Party	Liquid PCB stocks [t]	PCB containing liquid [t/a]	Minimum estimate [kg/a]	Maximum estimate [kg/a]	Best estimate [kg/a]
BE	7528	753	376	752 800	376 588
DE	60	6	3	6.000	3.002
DK	0	0	0	0	0
ES	90 150	9015	4508	4 971 000	2 487 754
FR	33 462	3346	1673	3 346 200	1 673 937
IE	0	0.03	0	33	16
LU	150	15	32	32	32
NL	0	0	0	0	0
PT	466	47	23	46 600	23 312
SE	0	0	0	0	0
UK	1000	100	50	100 000	50 025

Paragraph 126 of the background document: Scope of the PARCOM Decision 92/3 and Directive 96/59/EC

Directive 96/59/EC (see EU PCB website below) does not cover “uncontrolled PCB applications” (= large volumes with very low concentrations of PCBs or products with a small volume of PCBs). The uncontrolled PCB applications (e.g. non-industrial wastes and “historical pollutions”) have been partially addressed as part of the implementation of the Community Strategy for Dioxins, Furans and PCBs (COM(2001) 593).

Paragraph 128 of the background document: European Community Strategy to reduce the presence of dioxins, furans and PCBs

The EC Strategy COM(2001) 593 ¹ refers to a number of studies on these compounds and a number of Directives. The Commission published in 2007 its 2nd progress report on the implementation of the Strategy ².

Paragraphs 127 and 129-133 of the background document: Possible measures under Chapter 4 of the OSPAR PCB Background Document (2004) to stop feeding the waste stream

§ 130: Directive 2002/96/EC on waste from electrical and electronic equipment (WEEE) and on the restriction of the use of certain hazardous substances in electrical and electronic equipment establishes a mandatory segregation of PCB-containing components to ensure their adequate disposal and the restriction of use of some dangerous substances in electric and electronic equipment.

As part of the LIFE-Environment Regulation, a number of techniques have been developed to adequately dispose of PCB-contaminated (electrical) equipment ³.

§§ 131 and 132: Directive 2006/12/EC on wastes constitutes the legal framework for Community policy on waste management and is of relevance also from the POPs point of view.

¹⁾ <http://ec.europa.eu/environment/waste/pcbs/index.htm>

²⁾ http://eur-lex.europa.eu/LexUriServ/site/en/com/2007/com2007_0396en01.pdf

³⁾ <http://ec.europa.eu/environment/life/project/Projects/index.cfm>; search for “PCB” in “Free Text”

§ 134: The global Stockholm Convention on POPs ⁴ entered into force on 17 May 2004 and the European Community submitted in 2007 its Implementation Plan under the Convention. The following OSPAR Contracting Parties submitted their National Implementation Plans ⁵: Denmark, Spain, France, Germany, Iceland, Norway, the Netherlands, Sweden and United Kingdom.

Regulation (EC) 850/2004 is the main legal instrument for implementing the Stockholm Convention in the EU. This regulation substitutes considerable parts of Directive 96/59/EC.

New information on the occurrence in the environment

OSPAR monitoring reports are available under the OSPAR [publications page](#).

OSPAR continues to monitor inputs to the marine environment through CAMP (Comprehensive Atmospheric Monitoring Programme) and RID (Riverine Inputs and Direct Discharges) on a voluntary basis. CAMP measures the PCB-congeners 28, 52, 101, 118, 138, 153, 180 in precipitation and in air, but the availability of data is too limited for an OSPAR assessment (OSPAR, 2007a). RID measures the PCB-congeners 28, 52, 101, 118, 138, 153, 180. OSPAR will also seek to make use of data on PCBs in the Arctic collected under the Arctic Monitoring and Assessment Programme.

In the RID report for 2005 (OSPAR, 2007b), only 4 Contracting Parties reported riverine inputs of PCBs (Table 6). The decreasing trend since 2000 is obvious.

Table 6: Lower and upper estimates of the sum of direct and riverine inputs of PCBs to the OSPAR maritime area reported by Contracting Parties in 2000 and 2005 (source: OSPAR 2005, Table 4a; RID report 2005, Tables 4.1 and 4.2)

Country reporting	Lower/upper estimate [kg] in 2000	Lower/upper estimate [kg] in 2005
Belgium	0,8 / 108	0,32 / 77
Germany	10,1 / 29	4,3 / 32
The Netherlands	121 / 123	- / -
Spain	4 / 5	0 / 238
United Kingdom	59 / 1644	0,7 / 157

OSPAR continued to measure PCBs under the CEMP (Co-ordinated Environmental Monitoring Programme) on a mandatory basis in biota (fish and mussels) and sediments for temporal trends and spatial distribution covering PCB-congeners 28, 52, 101, 118, 138, 153, 180. In the light of the assessment of CEMP data carried out in 2004/05 the coverage of PCBs by the CEMP will be reviewed, taking into account the current availability of data and the existing time series. The existing OSPAR dataset is much larger for biota than for sediments, and presently, time trend assessment is only possible for biota. The review should therefore consider whether it would be best to continue time series in biota, especially in areas with high concentrations. Less frequent surveillance monitoring or spatial surveys could be carried out in addition in sediment deposition areas (muddy sediments) like estuaries.

The large majority (49 out of 51) of statistically significant trends for PCB 153 (representative of the PCB group) in biota show decreasing concentrations. However, the rate at which concentrations of PCBs in biota are decreasing was less than that determined in a previous assessment suggesting that there may be a

⁴) The POP Convention (<http://www.pops.int/>) bans the production of PCBs but gives countries time until 2025 to take action to phase out the use of equipment containing PCBs. The recovered PCBs must be treated and eliminated by 2028.

⁵) <http://www.pops.int/documents/implementation/nips/submissions/default.htm>

residual problem. Also, PCB levels in cod at some Norwegian and some sites in the United Kingdom are increasing. (Source: OSPAR, 2006)

The difficulty in detecting significant trends results in part from the high proportion of shorter time series. Approximately 30% covered only 3–4 years. The optimum for trend detection is greater than 7 years. Another factor is the total variability of the data, which at the current environmental levels and with the current monitoring programmes and methodologies, is inconclusive as regards the detection of real trends (Figure 1).

Norway has published several reports on findings of organic pollutants in arctic animals⁶. The sum of PCB32 concentrations in the northern fulmars of the study (SFT, 2005) ranged from 4873 ng/g life weight to 9164 ng/g lw, with a mean concentration of 6657 ng/g lw. This is in the same range as previously reported sum of PCB concentrations (2372 ng/g lw to 14292 ng/g lw) in egg, fat and liver samples of northern fulmar from Jan Mayen and Canada. The PCB profile was dominated by PCB 153, 118 and 180. Most effect studies of Arctic wildlife have been carried out measuring the effect of PCB exposure. Both mean and range wet weight concentrations of the sum of PCB32 and PCB80 in the present study were well below the no-observed-effect level (NOEL) for reproductive effects in eggs of fish-eating and predatory birds.

Non-ortho PCB concentrations in the study of 2005 were two times higher than the previous reported liver concentrations in northern fulmars from Canada on a wet weight basis (2270 pg/g ww and 1060 pg/g ww, respectively) and 7-11 times higher than reported levels in Brünnich's guillemont and black-legged kittiwake from Canada.

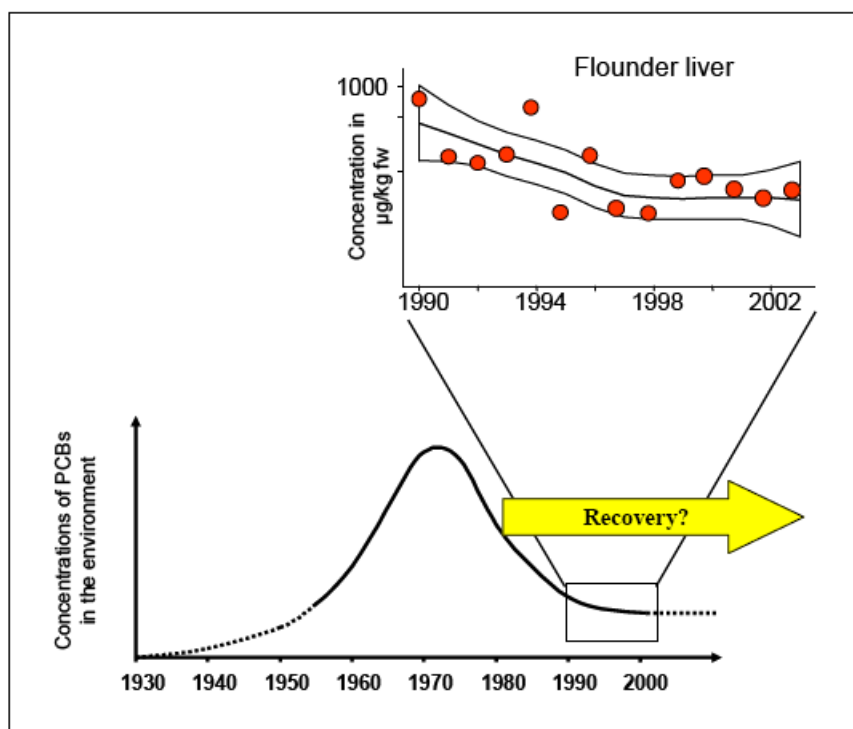


Figure 1: Total variability of long-term observations in relation to medium-term trends for PCB 153 in flounder liver. (Source: Roose 2005 in Overview on OSPAR Assessments 1998-2006)

⁶) http://www.sft.no/publikasjonerforside_10990.aspx. Search for TA-number 2058 (polar bear), 2073 (northern fulmar), and 2222 (dead seabirds).

High levels of PCBs were found in dead seabirds (SFT, 2007). The levels of PCBs in the glaucous gulls and great black-backed gulls were much higher (liver samples: 84054 – 4273992 ng/g lw; brain samples: 16680 – 711468 ng/g lw) than previously reported in free-living seabirds from the Arctic and exceeded the threshold levels for effects in birds.

In polar bears (SFT, 2004), PCBs were the major class of contaminants. Svalbard polar bears carried higher loads of higher chlorinated PCBs, nonachlor and oxychlordane compared to polar bears from Arctic regions of Alaska and Canada. These levels exceeded the lowest-adverse-observed-effect levels (LOAEL) and no-observed-effect levels (NOEL) in other mammals.

Further work needed

Directive 96/59/EC obliges Member States to decontaminate equipment or dispose of PCBs and equipment containing PCBs by 2010 and as this Directive is a key-instrument to implement part of the PARCOM Decision 92/3, Contracting Parties are invited to report to the European Commission under Directive 96/59/EC on their actions underway concerning PCBs and hazardous PCB substitutes.

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