

**EuroPCB: inventory PCB  
enforcement in member states.**

**Part II: Fiches  
Results for each member state.**

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# 1. Fiche Austria

## A. Legislation

### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

*The Halogen Ordinance (Federal Gazette: BGBl nr 210/1993).*

This Ordinance contains a ban on PCBs and PCTs. From 24<sup>th</sup> of March of 1993 it is forbidden to place on the market equipment containing PCBs or to produce, place on the market and use PCBs or substances and preparations containing PCBs.

*Waste Management Law 2002 (AWG 2002, BGBA 1 102/2002)*

PCB containing waste (PCB content > 30ppm) has to be incinerated or disposed of equivalently. The detachment of PCB contaminated components for reuse purposes is not allowed (§16 (2)).

### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*The Halogen Ordinance*

- the use of electrical equipment containing more than 500 ppm PCBs with exception of transformers is allowed until the end of December 1996
- the use of transformers containing more than 500 ppm PCBs is allowed until the end of December 1999
- the use of transformers containing less than 500 ppm PCBs is allowed until they are placed out of operation; transformers are allowed to be refilled only with liquids, which do not contain PCBs.

*The Waste Management Law 2002*

Special Treatment obligations of waste with content of more than 30ppm PCB.

In general: by 31<sup>st</sup> of December 2002, all PCBs and all equipment containing > 500 ppm PCBs included in the inventory have to be decontaminated or disposed under the terms of the Directive. This deadline is based on the fact of maximum two years storage on own site and maximum one year storage on site waste facility.

### 3. Limits correspondence with Directive

The limit in Austria for qualifying an object PCB contaminated is 30 ppm PCB. Those objects (more than 1 dm<sup>3</sup> and if the concentration of PCB > 30ppm; less than 1 dm<sup>3</sup> but close together with other equipment leading to more than 2 litres of this fluid) had to be notified to the Ministry of Environment, Youth and Family (now Ministry of Agriculture, Forestry, Environment and Water Management).

### 4. Subsidiary regulation

Austria did not have a subsidiary regulation. The owner has to pay the costs for disposal.

## B. Executive

### 1. Inventory on PCB containing equipment

An inventory on PCB containing equipment took place at 31<sup>st</sup> of December 1996. PCB containing electrical equipment had to be notified to the Ministry. The inventory pursuant article 4 of the Directive has been sent to the Commission. The available information at the commission pointed out a result data of about 50 pieces of equipment (21 transformers, 22 capacitors and 4 other type of equipment)<sup>1</sup>.

According to the Austrian authority keeping up-to-date the inventory list is not necessary because by 31<sup>st</sup> of December 2002, all PCBs and all equipment containing PCBs have to be decontaminated or disposed under the terms of the Directive.

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<sup>1</sup> Correspondence research EC Commission, Mr. M. Pohlmann

## **2. Plan and other executive measures**

The *Halogen Ordinance* and the *Waste Management Law 1990* introduced a plan on the decontamination and disposal of equipment containing PCBs into Austrian law. This plan has been set out in the Federal Waste Management Plan 2001.

According to this plan any equipment containing PCBs that already was on the market on 24<sup>th</sup> March 1993 that has an apparent PCB concentration of more than 30 ppm must be labelled and notified to the Federal Minister of Agriculture and Forestry, Environment and Water Management. This Ministry has kept records on all the notified equipment subject to this obligation since 31<sup>st</sup> of December 1996.

On 24 March 1993, a phased plan for a gradual ban on the use of all the equipment to be labelled, entered into force in accordance with Art. 8 (1) to (4) of the *Halogen Ordinance*:

According to article 17 (3) of the *Waste Management Law*, hazardous waste may be stored by the owner for a maximum period of 24 months. Wastes must not be placed into intermediate storage at the treatment operator's for more than one year before treatment is performed. This means that the maximum period from the end of operation to decontamination or disposal is three years.

## **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

Objects (more than 1 dm<sup>3</sup> and if the concentration of PCB > 30ppm; less than 1 dm<sup>3</sup> but close together with other equipment leading to more than 2 litres of this fluid) had to be notified to the Ministry of Environment, Youth and Family (now Ministry of Agriculture, Forestry, Environment and Water Management). For smaller objects no special measures are available.

## **4. Removal Companies/disposing facilities**

Any person who treats hazardous waste requires permission by competent authority.

## **5. Responsible authorities?**

- Landeshauptmann in Länder.
- Austrian Federal Minister of Agriculture, Forestry, Environment and Water Management.

## **C. Results**

### **1. Quantity PCB removed and left**

The quantity PCB contaminated material removed has been reported to the Commission. As of 31<sup>st</sup> of December 2002 all equipment with > 500 ppm PCB should be disposed. The remaining quantity of objects (30<x<500 ppm) is not known.

### **2. Quantities PCB disposed by treatment facilities**

The transfer of 3.735.082 kg PCB- and PCT containing equipment were declared from 1993 to 2002 to a person authorised to collect or treat this waste. This amount covers the PCB-equipment recorded as hazardous waste.

## 2. Fiche Belgium

Belgium has three regions: the Flemish region, the Brussels-Capital region and the Walloon region. Each region is quite autonomous so we present both national and regional situation.

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

*The Royal Decision of 9<sup>th</sup> of July 1986*

forbids the production and trading of PCB's and PCB-containing equipment. Article 2 of this Decision forbids the use of PCBs for new applications. Use of limited quantities of PCBs is allowed for normal maintenance or refilling of equipment dating from before 31<sup>st</sup> of July 1986.

For the Flemish region:

According to "VLAREA", used PCB must be treated (biological, physical-chemical, incineration, or exceptionally deep underground dumping) to become environmentally harmless. Reuse is not a legal option anymore.

For the Brussels-Capital region:

The reuse of PCB is restricted by the *Royal Decision of 9th July 1986 for Belgium* and by the *Decree of the Brussels- Capital government of 4<sup>th</sup> of March 1999 (Besluit van de Brusselse Hoofdstedelijke Regering betreffende de planning van de verwijdering van PCB's en PCT's van 4 maart 1999)*.

For the Walloon region:

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

For the Flemish region:

The Directive was converted into:

- The *Flemish Regulation of 5<sup>th</sup> of December 2003* with regard to the *Prevention and Management of Waste (VLAREA)*.
- The *Elimination Plan for PCB containing equipment and the therein existing PCBs as based on the Decree Flemish Government of the 17<sup>th</sup> of March 2000 (Besluit van de Vlaamse Regering van 17 maart 2000 houdende vaststelling van het verwijderingsplan voor PCB-houdende apparaten en de daarin aanwezige PCB's)*.

In general, all PCB containing equipment (>500 ppm) and the PCBs within, existing in the Flemish region should be eliminated (disposed or decontaminated) before the end of 2005. Under certain conditions, disposing/decontamination may take place before 31<sup>st</sup> of December 2010. Equipment with a PCB concentration between 50 and 500 may be used until end of lifetime.

For the Brussels-Capital region:

The Directive was converted into:

- The *Decree of the Brussels- Capital government of 4<sup>th</sup> of March 1999*.  
This Decree limits the PCB-concentration as fixed in the Directive.
- The *Ministerial Decision to establish a Plan for disposal and decontamination of PCBs and PCTs of 20<sup>th</sup> of December 1999. (Ministerieel Besluit tot vaststelling van een gewestelijk plan voor de verwijdering en de reiniging van PCB's en PCT's van 20 december 1999)*.  
Almost all equipment containing PCBs (>50 ppm) and > 1 dm<sup>3</sup> should be eliminated for 31<sup>th</sup> December 2005, except the ones who got a dispensation. Those should all be eliminated for 2007. The plan follows a certain scheme based on the equipment's date of fabrication.
- The *Decision of the Brussels-Capital gouvernement of 9<sup>th</sup> of September 1999 (Besluit van de Brusselse Hoofdstedelijke Regering tot vaststelling van de uitbatingsvoorwaarden voor statische transformatoren met een nominaal vermogen van 250 kVA tot 1000 kVA" van 9 september 1999)*.  
The Decree was brought out to control the transformers and capacitors on the terrain and so, to protect the soil and water from any leaking equipment.

For the Walloon region:

The Directive was converted into:

- *The Decree of the Walloon Government of 22<sup>th</sup> May 1999 (Arrêté du Gouvernement wallon relatif à l'élimination des polychlorobiphényles et des polychloroterphényles (M.B. 22<sup>th</sup> of May 1999) adapted by Decree of 13<sup>th</sup> of December 2001.*

### **3. Limits correspondence with Directive**

For the Flemish and Brussels- Capital regions:

Yes, we use the PCB limits as fixed in the Directive 96/59 (0,005 % and between 0,05 and 0,005%; see "VLAREA" articles 5.5.8.2.§2, 5.5.8.4.§1.3°, 5.5.8.5.§2, 5.5.8.7.).

### **4. Subsidiary regulation**

For the Flemish region:

Owners of PCB-containing equipment qualify for subsidy if the equipment is disposed of at least one year before the legal deadline. Till 29<sup>th</sup> of October 2004, subsidies were given to companies who replaced transformations. (12 % for modal and large companies, 20 % for small companies) These subsidies are handed out by the Belgian Federal Public Service of Economic Affairs. Not many holders did apply for this regulation. It was not actively used in the disposing policy of the government.

For the Brussels-Capital region:

The enterprises could ask for financial help to the 'Ministerie van het Brussels Hoofdstedelijk Gewest Bestuur Economie en Werkgelegenheid' for all changes made to protect the environment or to adapt their installation to the new standards of the European Commission. They can also qualify for subsidy if the equipment is disposed of at least one year before the legal deadline by the Belgian federal government of Economic Affairs.

## **B. Executive**

### **1. Inventory on PCB containing equipment**

Article 4 of the *Royal Decree of 9<sup>th</sup> of July 1986* makes it compulsory for owners of PCBs and PCB containing equipment to notify relevant technical data concerning this equipment. Article 5 makes it compulsory to notify any action carried out with regard to this equipment.

For the Flemish region:

The inventory took place from 1986 and is kept up-to date until now. OVAM keeps thus an inventory based on the data obtained from *Royal Decree of 9<sup>th</sup> of July 1986*, and those from "Elimination Plan for PCB containing equipment and the therein existing PCBs". OVAM does active research by making written and on-the-field enquiries.

Several appointed civil servants of the Flemish Environment Inspection Section pay particular attention to PCB containing equipment in the field, and the information gathered, is centralized at OVAM.

For the Brussels-Capital region:

The Institute got from the Federal Government a list with the owners of PCB containing equipment. This list was not updated. Every owner has to report his PCB containing equipment by filling in a questionnaire. A folder about PCBs en PCTs was published in 1999. The inventory took place in 1999. Besides the inventory the Institute employs 4 persons who control all PCB equipment and, with every demand of environmental permit, the high voltage cabin is checked up. With the investigation on side new PCB containing equipment is discovered every week.

### **2. Plan and other executive measures**

For the Flemish region:

This is the "Elimination Plan for PCB containing equipment and the therein existing PCBs" (*Decree Flemish Government 17<sup>th</sup> of March 2000*). In general, all PCB containing equipment and the PCB's within should be eliminated by the end of 2005.



For the Brussels-Capital region:

The *Ministerial Decision to establish a Plan for disposal and decontamination of PCBs and PCTs of 20<sup>th</sup> of December 1999* formal lays down the provisions.

### **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

For the Flemish region:

Small PCB containing equipment (less than 1 litre PCB) must be removed at the end of their life span. Electric, electronic and other devices that possibly contain PCBs must be disassembled selectively. Parts that contain PCBs must be removed to properly licensed facilities. In case of doubt presence of PCBs should be assumed. At the renewal of the street lighting, all existing capacitors must be assumed PCB containing and removed as such. A scheme of removal is included in the legislation which regulates the elimination of PCB containing equipment and the PCBs within.

For the Brussels-Capital region:

A study was done to know in which applications/equipments small PCB was to find. All electric, electronic and domestic devices, considered as waste, are collected and disassembled selectively. Parts that contain PCBs must be removed to properly licensed facilities. The disposal of small PCB equipment is regulated in the *Decree of the Brussels- Capital government of 4<sup>th</sup> of March 1999*.

### **4. Removal Companies/disposing facilities**

For the Flemish region:

Companies must have a permit according to the *Decree of the Flemish Government of 6<sup>th</sup> of February 1991* bearing to the Decree of the Flemish Regulation with regard to the environmental permit ("VLAREM I"). The exploitation is submitted to compliance of legal requirements. There is one company, who is licensed for the dismantling of PCB containing equipment, and two incineration plants, licensed for the incineration of PCBs and PCB containing waste.

For the Brussels-Capital region:

Companies who deal with removal of PCBs have an agreement. The institute has a list of licensed companies to remove PCB. The disposal takes place by Incineration or export to incineration centres.

### **5. Responsible authorities**

For the Flemish region:

Art. 54 of the *Decree of 2th of July 1981* with regard to prevention and management of wastes stipulates which authorities are competent for its implementation and for its implementing orders (like "VLAREA"). It is art. 9.1 of "VLAREA" which concretizes the enforcement authorities. These are e.g. appointed civil servants of the Flemish Environment Inspection Section, of the Public Waste Agency of Flanders ("OVAM"), OVAM is therefore responsible for the handling and prevention of waste. Among other things, OVAM is responsible for the elimination policy of PCB-containing waste in Flanders.

In Brussels this is BIM/IBGE (the Brussels Institute for Management of the Environment) and in the southern part of Belgium, Wallonia, OWD (the Wallonian Office of Waste).

## **C. Results**

### **1. Quantity PCB removed and left**

For the Flemish region:

Since the scheme of elimination became operational, over 17.000 PCB containing appliances were removed.

Inventory of PCB containing equipment (number):

	Inventoried	Eliminated	Remaining
Transformers	14.504	11.800	2.704
Capacitors	5.645	5.341	304
Other appliances	174	161	13

Over 85% of all listed equipment has been removed.

For the Brussels-Capital region:

More than 3.000 PCB containing equipment have been eliminated since the legislation is applicable.

## **2. Quantities PCB disposed by treatment facilities**

For the Flemish region:

Over 85% of all listed equipment is removed: not all data of these appliances is available, so extrapolation of existing data has to be made: Roughly 7.000 to 8.000 tons of PCBs originating from inventoried equipment in Flanders have been removed.

An approximate total amount of 19.205 tons of PCB liquid and PCB polluted materials has been removed in the Indaver plant in Antwerp, which is the main incineration facility in Flanders. Of this total about 4.830 tons originated from outside Belgium, and about 14.375 tons came from Flemish equipment and equipment that was dismantled in a Flemish facility but isn't necessarily originating from Flemish region. The dismantling facility delivers the oil from the treated appliances to Indaver, where this oil is considered Flemish.

For the Brussels-Capital region:

More than 3.000 PCB-containing equipments have been eliminated since the legislation is applicable.

More than 80% of all inventoried PCB-containing equipment is already eliminated. We do not know all de data about each equipment (mass, volume). So an extrapolation has to be made. About 2,000 tons of PCB has been removed from the Brussels-Capital region.

### **3. Fiche Cyprus**

#### **A. Legislation**

##### **1. Measures to forbid production and trading of PCBs (including restricting the reuse of PCB)**

No production of PCBs takes or ever took place in Cyprus.

##### *Regulatory Act 292/2002*

Regarding trading, Directive 76/769/EEC has been fully transposed in the Cyprus legislation with this Act. All timescales used are those stated in this Directive<sup>2</sup>. The reuse and topping up of transformers is prohibited under Article 10 of the *Regulatory Act 36/2002*.

##### **2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010**

##### *Regulatory Act 636/2002*

This Act has fully transposed the Directive and has come into effect in December 2002. All obligations of the Directive have been included in this Act. Owners of this equipment are responsible to the Minister of Agriculture, Natural Resources and Environment. Cyprus uses the dates to phase out as set in the Directive, that is before end of 2010 (for equipment with PCB levels above 500 ppm). Concerning equipment with 50-500 ppm PCBs, Cyprus keep to the criteria till end of life.

##### **3. Limits correspondence with Directive**

The limits set in the Directive are used in the *Regulatory Act 636/2002*.

##### **4. Subsidiary regulation**

No.

#### **B. Executive**

##### **1. Inventory on PCB containing equipment**

Cyprus has been alert since 1987 of PCB containing electrical equipment. From 1990 onwards all the electrical transformers of the Electricity Authority of Cyprus, which is the largest owner of electrical transformers in Cyprus, were checked by the chemical laboratory of the Geological Survey Department (GSD) for their PCB content. All the transformers that were found to contain any PCBs were collected in a suitably modified enclosure where they were decontaminated, until they contained less than 2ppm PCBs. All these transformers were allowed to stand for three months after decontamination was completed and re-checked by gas chromatography and confirmed to contain no PCBs.

##### *Inventory Methodology*

The inventory was prepared by consultants who have been employed to this purpose. The number and types of facilities and private enterprises to be investigated were discussed during an initial meeting with GSD, Geoinvest and SWECO. It was agreed that the Study initially would focus on high-tension consumers and consumers with high electricity consumption base. A questionnaire was sent out to over 660 facilities and enterprises.

The GSD has been responsible for carrying out the follow-up activities and sampling of equipment under the supervision of SWECO. Therefore a training program was set up for training two technicians at the GSD by SWECO. The GSD personnel continued the follow-up investigations of the questionnaires after completion of the SWECO training programme in November 2001. A database has also been developed, where all data have been recorded.

Currently the database comprises comprehensive and detailed information regarding all oil-containing equipment in Cyprus and contamination levels.

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<sup>2</sup> The Directive forbids trading and use, with exceptional deadline as 31<sup>st</sup> of December 1979

Information is easily accessible and can be coupled to a Geographic Information System (GIS). The database is up-dated continuously in accordance with the provisions of the Directive.

The inventory has been completed in May 2003.

#### Results of the inventory:

Quantitative analyses were carried out for 149 samples from transformers in the GSD laboratory and the results were recorded in the database.

Out of those 149 analysed transformers, only one proved to have a PCB-content above 500 ppm. Another 40 transformers contained 50-500 ppm of PCBs. In some facilities only one of several transformers of the same brand and age were sampled. A rough estimate of the additional number of transformers that may contain PCBs above 50 ppm is about 80. The average weight of the transformer is 2400 kg. These numbers are concerning non-electricity authority transformers.

#### **2. Plan and other executive measures**

According to the Article 5(3) of the *Regulatory Act*, owners of equipment containing PCBs, should, within a month of any change in the status of the equipment, notify the Minister.

#### **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

Under article 9(1) (b) of the *Regulatory Act*, the Minister prepares a national plan for the collection and management of the equipment not covered by the inventory. The plan is not ready yet. It is anticipated that it will be completed towards mid-2006.

#### **4. Removal Companies/disposing facilities**

Companies who want to remove their PCB equipment have to be licensed under the *Solid and Hazardous Waste Law (No. 215/2002)*.

As yet there are no companies in Cyprus, licensed to dispose PCBs. When the Electricity Authority of Cyprus decontaminated all their PCB containing transformers they commissioned a Belgian/Italian consortium.

There are no incinerators in Cyprus that can be used for PCB incineration. There are two cement kilns that can be modified for PCB incineration. There are no salt mines in Cyprus and no other permanent storage facilities. Only temporary facilities can be envisaged for storage of PCB containing electrical equipment before they are exported to a country that has incinerator facilities.

#### **5. Responsible authorities**

The competent authority for the PCB management plan is the Ministry of Agriculture Natural Resources and Environment, Environmental Service.

The Chief Inspector and Inspectors specified in the Solids and Hazardous Waste Law are appointed as enforcement authorities.

## **C. Results**

#### **1. Quantity PCB removed and left**

The Electricity Authority of Cyprus, which is the largest owner of electrical transformers in Cyprus, has decontaminated their PCB contaminated transformers. All transformers of the electricity authority are now PCB free. The Electricity Authority has carried out an extensive decontamination plan and does not own any more transformers that contain PCBs.

Other companies (industry, hotels, hospitals etc) own 121 transformers contaminated with PCBs (>50 ppm). No information is available about the *total* number of transformers in use by these companies. Cyprus notes however, that only 41 transformers have been identified as having more than 50 ppm (one more than 500 ppm). The number of 121 is an estimate in order to assess the possible cost of decontamination.

#### **2. Quantities PCB disposed by treatment facilities**

No disposal facilities are available in Cyprus.

## 4. Fiche Czech Republic

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

PCBs have not been produced since 1984. They are neither imported nor exported by the Czech Republic ((banned by *Act No. 356/2003 Coll. (old Act. No. 157/1998 Coll.)*), on chemical substances and chemical preparations and by the *Act on Waste, No. 185/2001 Coll.*).

*Notice No. 302/1998 of the Ministry of Environment and its Annex No. 9.:*

further conditions are defined for professional competency, the procedure for its determination, the procedure for determining health competency, the procedure for granting and revoking authorisation, a list of selected dangerous substances and preparations, whose import and export is allowed only with the approval of the Ministry of Environment, the content of the application for import and export and the method and details of documentation and notification of dangerous chemical substances and preparations<sup>3</sup>. *Notice No. 302/1998* was replaced by *Notice No. 220/2004 Coll.*, setting notification conditions of hazardous chemical substances and their inventory obligations.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*The Act on Waste (No. 185/2001 Coll.)* and amendments of some other Acts.

The Act was adopted by Parliament on 15<sup>th</sup> of May 2001. It sets up the definition of PCBs (polychlorinated biphenyls, polychlorinated terphenyls, monomethyl-tetrachlorodiphenyl methane, monomethyl-dichlorodiphenyl methane, monomethyl-dibromodiphenyl methane and any mixtures containing any of the above substances with a concentration in excess of 50 ppm) and the concentration limit 50 mg/kg. It also sets up the term of equipment containing PCB<sup>4</sup>. It regulates the handling of waste containing special substances, like PCBs.

Owners of waste and equipment containing PCBs must ensure their disposal as soon as possible, but not later than in 2010. There is an exception for transformers containing from 50 – 500 ppm PCBs: their disposal can be at the end of the lifetime of these transformers. Disposal is only possible in facilities designed for such purposes. The Act says that a decree will regulate several requirements concerning PCBs<sup>5</sup>. As a result, *The Decree of the Ministry of Environment No. 384/2001 Coll. on managing of PCBs* came into force on 1<sup>st</sup> of January 2002. This Decree regulates the use of special dangerous waste (PCB) including the protection of the public and the environment. It regulates the

- technical requirements, including measures - laboratory methods, set in its Annex
- methods of determining the total PCB concentration
- details of the method proving non-existence of PCB
- details of PCB inventory list set in its Annex
- labelling method for the PCB-containing and decontaminated equipment<sup>6</sup>.

The purpose of documentation of *Notice No. 384/2001* was the initiation of the inventory of equipments that (possibly) contain PCBs according to the Directive. Its provisions last until the validity of the *Act on Waste, (Act No. 185/200)*, and it implements regulations, which more consistently transpose the inventory demands on devices containing PCBs<sup>7</sup>.

*Government Regulation No. 197/2003 Coll.*, on the Waste Management Plan of the Czech Republic sets the main aims in the Czech Republic (for 10 years)<sup>8</sup>. The effects of this regulation is explained below.

#### 3. Limits correspondence with Directive

Yes, 50 ppm.

<sup>3</sup> Proposal of the National Implementation Plan for Implementation of the Stockholm Convention in the Czech Republic, Page 10

<sup>4</sup> Ministry of the Environment of the Czech Republic, 12th Workshop of the BCRC in Prague, March 15-17, 2004 , Sheet 10

<sup>5</sup> Municipal Waste Management in Accession Countries, Eurostat, European Commission, 2002, page 10

<sup>6</sup> Ministry of the Environment of the Czech Republic, 12th Workshop of the BCRC in Prague, March 15-17, 2004 Sheet 10

<sup>7</sup> Proposal of the National Implementation Plan for Implementation of the Stockholm Convention in the Czech Republic, Page 10

<sup>8</sup> Ministry of the Environment of the Czech Republic, 12th Workshop of the BCRC in Prague, March 15-17, 2004 , Sheet 10

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

The Centre for Waste Management (CeHO) in Prague carried out a checklist for inventory and making national inventory according to the decree on managing PCBs<sup>9</sup>.

##### Results of the inventory:

The National Inventory of PCBs in the period 1.1.2002- 31.8.2004 has lead to the following results<sup>10</sup>:

	Equipment/waste containing PCBs		Equipment/waste that may contain PCBs	
	amount of pieces	Quantity operational liquid (ton)	amount of pieces	quantity operational liquid (ton)
Total	20833	494	9077	3564
Transformers	136	294	1561	2380
Capacitors	10446	135	2715	29
Small capacitors (< 5dm3)	10245	45	65	0,1

#### 2. Plan and other executive measures

*Government Regulation No. 197/2003 Coll., on the Waste Management Plan of the Czech Republic.*

Paragraph 3.3.1

- provides for completion and evaluation of inventories of equipments containing PCBs in amounts greater than 5 dm<sup>3</sup> and establish conditions for decontamination of PCB equipments with contents greater than 50 mg/kg PCB;
- prepares plans for decontamination or disposal of the PCB equipments in the National inventory;
- prepares a methodology for the collection and subsequent disposal of PCBs equipments not subject to the National inventory;
- prepares a proposal for issuing passports for sites in the Czech Republic contaminated with PCBs<sup>11</sup>.

The implementation program for preparing plans for decontamination/disposal of equipment containing PCBs through the Czech National Inventory has been finalized in March 2004. It contains technical conditions of decontamination of transformers, of concentration and collection of PCB waste.

It also has a list of companies authorized to gather up, collect, purchase, sort, transport or storage PCB waste. Techniques and technologies for decontamination will be developed as well as pilot projects<sup>12</sup>.

Another plan which is in process is the National Implementation Plan of the Stockholm Convention.

#### 3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)

*Government Regulation No. 197/2003 Coll., on the Waste Management Plan* prescribes in paragraph 3.3.1 the preparing of plans for decontamination or disposal of the PCB equipments in the National inventory. Concrete measurements are not known.

It is optional for companies to include the "small" equipments to the inventory. Results are shown in the figure above (small capacitors (< 5dm<sup>3</sup>)). These equipments are step-by-step disposed (incinerated) in the only hazardous waste incineration plant in the Czech Republic.

#### 4. Removal Companies/disposing facilities

*The Act on Waste (No. 185/2001 Coll.)* does not allow the export of waste unless disposal within the Czech Republic should be impracticable<sup>13</sup>. The Czech Republic has sufficient technological capacity

<sup>9</sup> Ministry of the Environment of the Czech Republic, 12th Workshop of the BCRC in Prague, March 15-17, 2004, Sheet 12

<sup>10</sup> Ministry of the Environment of the Czech Republic, 12th Workshop of the BCRC in Prague, March 15-17, 2004, Sheet 14 and 15

<sup>11</sup> Ministry of the Environment of the Czech Republic, 12th Workshop of the BCRC in Prague, March 15-17, 2004, Sheet 11

<sup>12</sup> Ministry of the Environment of the Czech Republic, 12th Workshop of the BCRC in Prague, March 15-17, 2004, Sheet 17

<sup>13</sup> Hazardous and Industrial Waste Management in Accession Countries, Eurostat, European Commission, 2004, page 15

for the disposal of PCB residues, all POPs-contaminated waste and contaminated soils, sediments and sludge. For the liquidation of wastes containing POPs, it is possible to take advantage of the hazardous waste incinerator in Ostrava Town for their combustion. Presently, the incinerators accept and burn capacitors with no limitation of volume and size. They are destroyed upon transfer to the incinerator without pre-processing (no crushing).

The incinerator is not equipped for the combustion of transformers. It basically deals with pre-processing of the waste before combustion, for example demounting, crushing, grinding, etc.

The *Decision of the Ministry of Environment of June 29th, 2000* granted the incinerator authorisation for collection, buyout, and removal of hazardous waste containing PCBs.

Certain types of wastes containing PCBs (used oils with a limited PCB content of up to 50 mg/kg) may be incinerated in cement factories.

The summary of incinerator in Ostrava Town disposal possibilities of PCBs<sup>14</sup> :

- hazardous waste incineration plant
- a capacity 10,000 tonnes/year (it supposes to be increased up to 18,000 tonnes /year).
- limitation for acceptance of PCB wastes is chlorine about 12 kg/hour , that is 150 tonnes pure PCB or 1000 tonnes of capacitors containing Delor (pure PCB)/year
- Oil, capacitors, soil, sludge, construction waste containing PCB,
- No incineration capacity for transformers containing PCB yet.

## 5. Responsible authorities

The Ministry of the Environment is fully responsible for the process of decontamination/disposal of PCBs, PCB wastes and equipments containing PCB and fulfilling of all obligations of the Directive. Dispose or decontaminate waste containing PCBs is a national target in the National Implementation Plan of Stockholm Convention (NIP) for all the Ministries and responsible state organizations and private sector as well.

The deadline is the same as set in the Directive. Final version of the NIP will be approved by Government of the Czech Republic at the end of 2005.

The Czech Environment Inspection is fully responsible for inspection and checking the waste management practices and techniques in companies that were authorized to decontaminate, storage, collect or disposing of PCBs.

## C. Results

### 1. Quantity PCB removed and left

The National Inventory of PCBs in the period 1<sup>st</sup> of January 2002 till the 31<sup>st</sup> of August 2004 has resulted in a quantity of about 494 tonnes PCB liquid with more than 50 ppm PCB and 3564 tonnes that may contain PCB liquid (still waiting for laboratory analyses)<sup>15</sup>

### 2. Quantities PCB disposed by treatment facilities

Export of PCB waste in tonnes<sup>16</sup>

Year	1998	1999	2000	2001	2002
Code 130301 PCB insulating oil	8	53	18		
Code 160201 PCB equipment	118	228	212	96	87

Since the end of 2002 there has been no export of PCB wastes. In case there is no capacity for disposal or decontamination of transformers in close future, the CR supposes to authorize companies for export of transformers abroad (Germany, France, the Netherlands, Finland).

<sup>14</sup> Ministry of the Environment of the Czech Republic, 12th Workshop of the BCRC in Prague, March 15-17, 2004 , Sheet 20

<sup>15</sup> Other sources have indicated that the estimated amount of equipment / wastes with a PCB content of more than 50 ppm was up to 65.000 tonnes (Municipal Waste Management in Accession Countries, Eurostat, European Commission, 202 page 8) or several tens of kilotons (Proposal of the National Implementation Plan for Implementation of the Stockholm Convention in the Czech Republic, page 12). These numbers may include other PCB waste.

<sup>16</sup> Ministry of the Environment of the Czech Republic, 12th Workshop of the BCRC in Prague, March 15-17, 2004 , Sheet 21

## 5. Fiche Denmark

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

Production of PCBs in Denmark has never taken place<sup>17</sup>. Since the mid 1970's the use of PCB has been restricted.

In 1977 the so-called open applications of PCB was banned, such as the uses in paints, sealant, carbonless paper etc.

In 1986 this was followed by a total ban of the sale of PCB and PCB containing products in Denmark<sup>18</sup>.

Reuse of PCB is banned. It is only allowed to dispose PCB in one of the D operation according to the Directive.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

Existing equipment could be used in a transition period (ending in 1995) for the most important equipment types. In the new *Regulations of December 1998 (Statutory Order no. 925)*, deadlines on the disposal or decontamination of existing equipment with PCB have been posed. For transformers and large capacitors, the deadline was 1<sup>st</sup> of January 2000.

The majority of small PCB capacitors in fluorescent light ballasts etc. is deemed to have been disposed of in the regular solid waste streams, ending up in landfills and waste incineration plants.

On 1<sup>st</sup> of December 1999 a new *Statutory Order on treatment of waste of electric and electronic products* came into force. This Order has brought along that the municipalities today are active in informing the public that all waste of electronic and electric equipment has to be collected separately. Consequently it must be expected that any PCB containing components of fluorescent lamps and electronics that may arise from now on will be treated separately.

#### 3. Limits correspondence with Directive

Denmark only use the 0,005% limit as the limit between when waste has to be disposed of as PCB containing waste or not.

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

Questionnaires have been sent to 1310 companies with potential PCB containing equipment. As the result was that only a few companies had this equipment it was easy to follow up on the proper removal of it. The inventory took place from 1997 to 1999.

##### The result of the inventory:

The result of the inventory shows that PCB containing equipment is no longer in use in the power distribution network. In total 23 consumer of electric answered that they were holders of PCB containing equipment or equipment that my hold PCB. All 23 have subsequent to the inventory disposed of the equipment to Kommunekemi. As the result was that only a few companies had this equipment, it was easy to follow up on the proper removal of it.

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<sup>17</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 6

<sup>18</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 13, referred to PCB I apparater I Danmark. Arbejdsrapport fra Miljøstyrelsen nr. 15 2000. Kakob Maag og Carsten Lassen, COWI, May 2000



The total PCB volume identified by the inventory is 3.3. ton. Of these a single enterprise holding both PCB containing transformers and capacitors accounted for 2.5 ton<sup>19</sup>.

## 2. Plan and other executive measures

No plan as the inventory list is empty.

## 3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)

Some are covered by the *PCB Statutory Order* (limit on less than 1 kg) and the less than 1 kg is covered by a *Statutory Order on electronic waste (1999)*.

## 4. Removal Companies/disposing facilities

Only Kommunekemi has a license to dispose PCB.

## 5. Responsible authorities

The municipalities have the responsibility for the enforcement of all waste regulation.

# C. Results

## 1. Quantity PCB removed and left

In 1983 the total accumulated use of PCB in DK was estimated to 1100 to 2000 tons, of which approx. 50 % was used in electrical equipment. The rest was among others used in paint, joint filler and self copying paper.

Application	Estimated added up consumption (tonnes)1950-1983) <sup>20</sup>
Large capacitors	450-750
Small capacitors (fluorescent light ballast)	175-325
High voltage transformers	30-100
Capacitors etc in electronics	? 3
Sum	655-1175

A substance flow analyses of PCB in electronic equipment indicates that only very small amounts of PCB is present in electrical equipment now (few tons) and there exist regulations for the disposal of such equipment.<sup>21</sup> PCB containing equipment is no longer in use in the power distribution network, PCB may still be in use in capacitors in ballasts of fluorescent lamps and in white goods older than 20 years. Scarce info concerning the content of PCB in electronic however indicates, that PCB is out of the turnover of electronics today<sup>22</sup>.

All originally PCB contaminated equipment which has been inventoried has been disposed.

It cannot be excluded that a small amount of PCB-containing large capacitors and maybe a few PCB-containing transformers are still in use by enterprises. It would be practical impossible to further identify this equipment.

## 2. Quantities PCB disposed by treatment facilities

In Denmark only Kommunekemi has a license to dispose PCB. There is no information available on the quantity of PCB containing waste which has been incinerated.

<sup>19</sup> Summary and conclusions investigations COWI Consulting Engineers and Planners for the Danish Environmental Protection Agency

<sup>20</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 13, referred to PCB I apparater I Danmark. Arbejdsrapport fra Miljøstyrelsen nr. 15 2000. Kakob Maag og Carsten Lassen, COWI, May 2000.

<sup>21</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 13

<sup>22</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 10

## 6. Fiche Estonia

### A. Legislation

#### 1. Measures to forbid production and trading of PCBs (including restricting the reuse of PCB)

The *Chemicals Act of the 6<sup>th</sup> of May 1998* provides the framework for the measures concerning PCBs. The use of PCB was banned by *Governmental Regulation No. 99, March 1999* on adoption of the listing of products posing threat to environment as waste for which production, import and export, sale and use is prohibited.

The *Regulation of Minister of Environment No. 71, July 1999* concerns the treatment of wastes containing PCB and PCT<sup>23</sup>.

*The Waste Act (RT 2004, 9, 52)* provides the general requirements for preventing waste generation and the health and environmental hazards arising there from, for organising waste management with the objective to reduce the harmfulness and quantity of waste, and liability for violation of the established requirements. § 27 forbids production, trading and import.

According to *Regulation No. 25 of 22 April 2004* of the Minister of Environment, there can not be any reuse of PCBs in Estonia.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*Regulation No. 25 of 22 April 2004 of the Minister of the Environment* contains requirements for collection and disposal of PCB waste and requirements for decontamination or disposal of equipment containing PCBs, in order to achieve complete and final elimination of PCBs to avoid the risks arising from PCBs to human health and environment.

The Regulation contains the following division:

§1 definitions etc;

§2 PCB containing equipment inventory and labeling;

§3 disposal of PCB containing equipment.

According to *Regulation No. 158 of 29 April 2004* of the Government, owners of PCB containing equipment etc must dispose as soon as possible but not later than 31<sup>st</sup> of December 2010. Also, companies must also inform the Ministry of the Environment Information Centre.

#### 3. Limits correspondence with Directive

The limit in Estonia is 50 ppm (0.005 %).

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

There was an inventory in 2001. The method was worked out by co-operation between Danish Ministry of the Environment and Estonian Ministry of the Environment, to implement the Directive. Questionnaires have been sent to potential companies of PCB containing equipment: energy producer, with big energy consumption companies, economically inactive companies, military district etc.

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<sup>23</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 7

#### The result of the inventory:

The result of the inventory in 2001 was 75,6 ton of PCB containing oil. New data will be available around 1st of July 2005.

The gathered data will be kept up-to-date (in case companies remove the PCBs) by the *Regulation No. 25 par. 2 (3) of 22 April 2004*. If the owner of the PCB equipment is changed, then the new owner must inform Environment Information Centre about owners change. This regulation insist and it is owners responsibility to inform about changes concerning "PCB area".

#### **2. Plan and other executive measures**

Estonia does not have a PCB plan.

#### **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

PCB containing equipment must be taken to the hazardous waste collection site.

#### **4. Removal Companies/disposing facilities**

The following companies may remove PCB containing equipment (They have a Hazardous waste license and a Waste permit):

- EcoPro As.
- AS Epler & Lorenz.
- AS Masp.

No disposal facilities in Estonia exist. The PCB containing waste has been transported to Finland to Ekokem.

#### **5. Responsible authorities**

Government.

### **C. Results**

#### **1. Quantity PCB removed and left**

In 2001 it was estimated that in total 250-500 tons PCB containing capacitors are in use, which corresponds to approximately 100-150 tons of PCB containing oil. Further roughly 20000 transformers are in use, which corresponds to approximately 10000 tons of PCB containing oil. Assuming an average content of 1.5 mg PCB/kg the transformers would in total contain approximately 15 kg PCB. Unknown amounts of small capacitors in fluorescent lamps electric appliances etc, and applied varnish, paint and lubricant might be still in use<sup>24</sup>.

The amount of PCB containing equipment that has been removed is 94,6 ton of which approximately 35 ton is PCB oil. An updated report at his point is available in July 2005.

#### **2. Quantities PCB disposed by treatment facilities**

No disposal facilities in Estonia exist.

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<sup>24</sup>Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 10

## 7. Fiche Finland

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

*Council of State Decision 1071/1989, restricting import and use of PCB and PCT*

The manufacture, import, placing on the market and supply of PCBs and products containing PCB is prohibited since 1<sup>st</sup> of January 1990. Existing PCB containing transformers and capacitors (> 1 kVA) were to be taken out of use by the end of 1994.

*Government Decree 735/2002 on certain persistent organic substances*

Production and use of substance and preparations containing substance is prohibited. Also the export and import for placing on the market of substances, preparations and products containing or treated with the substance is prohibited. These provisions do not apply to laboratory-scale research or use as a reference standard. Waste containing PCBs must be disposed of in such a way that waste does not exhibit the characteristics of persistent organic substances.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*Government Decree 735/2002 on certain persistent organic substances*

Production and use of substance and preparations containing persistent organic substance is prohibited. Also the export and import for placing on the market of substances, preparations and products containing or treated with the substance is prohibited. These provisions do not apply to laboratory-scale research or are used as a reference standard. Waste containing PCBs must be disposed of in such a way that waste does not exhibit the characteristics of persistent organic substances.

*Council of State Decision 711/1998 on phasing out of PCB's and PCB containing equipment and on handling PCB containing waste* implements the Directive. The use of equipment containing more than 5 dm<sup>3</sup> of PCB's is prohibited as from 31<sup>st</sup> of December 1999. The burning of PCB containing waste must be performed as required by *Council Decision 842/1997*. The separation of PCB from PCB-containing waste for reuse is forbidden. Also other provisions relating to the information to be given to authorities is given. (In this Decision PCB means polychlorinated biphenyls and terphenyls, monomethyl tetrachloro di-phenyl methane, monomethyl dichloro diphenyl methane, monomethyl dibromo diphenyl methane and any preparation with more than 0.005 % of those substances).

#### 3. Limits correspondence with Directive

The limit of PCB in Finland is 50 ppm.

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

In 1983 it was estimated that about 3 million small capacitors had been produced and imported to Finland until 1979 (when the use of PCB-capacitors ceased) with a total amount of PCB estimated to 300 tons. The lifetime of these electric appliances is about 20 years. Hence, most of these capacitors have been taken out of use by now<sup>25</sup>. The report to the Commission mentioned the existence of 250 transformers (630 ton) and 110.000 large capacitors (4500 ton).

In 1999 an inventory of equipment with PCB volumes of more than 5 dm<sup>3</sup> was done. The result of the inventory was:

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<sup>25</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002.

- <5 askarel transformer, all these have been destroyed at 31<sup>st</sup> of December 1999
- <120 large capacitors of which 95% has been destroyed at 31<sup>st</sup> of December 1999

## **2. Plan and other executive measures**

An administrative program to intensify the collection and treatment of waste from devices containing PCB was decided on by the Ministry of Environment in 1999, implementing the State *Decision No. 711/1998*<sup>26</sup>.

## **3. Measures for small PCB containing equipment (smaller than 5 dm3 volume PCB)**

The administrative program to intensify the collection and treatment of waste from devices containing PCB also includes measures for small PCB containing equipment (<5 dm3 volume PCBs). Small equipment is subject to separate collection and disposal at the end of its useful life through separate collection of waste from electronic equipment and through hazardous waste collection.

## **4. Removal Companies/disposing facilities**

The removal capacity of Ekokem, the only disposal facility in Finland, is approximately 30 000 ton/year. However, it should be noted that the treatment capacity depends on what kind of waste is treated (e.g. liquid, solid, oily etc.). For certain types of waste the capacity may be even higher. PCBs are not exported from Finland.<sup>27</sup>

## **5. Responsible authorities**

# **C. Results**

## **1. Quantity PCB removed and left**

Existing PCB containing transformers and capacitors (> 1 kVA) should be taken out of use by the end of 1994. An inventory in 1999 resulted in a small amount of PCB contaminated equipment (1 ton PCB). This equipment has been disposed.

## **2. Quantities PCB disposed by treatment facilities**

In total, 20.000 tons (including imported waste) of PCB containing waste have been disposed of in Finland (by Ekokem, the only disposal facility in Finland) between 1984-2005. In the period 1993-2004 about 10.600 tons has been imported. Data of previous import were not available. The maximum quantity of Finnish PCB waste that has been disposed should then be 9.400 ton. There have been exports of PCB waste from Finland only in 1999 (the exported quantity was 86 ton).

<sup>26</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002, page 13

<sup>27</sup> <http://www.chem.unep.ch/pops/pops-gs/fi/f1pcb.pdf>

## 8. Fiche France

The content of this fiche is based on the PLAN NATIONAL DE DECONTAMINATION ET D'ELIMINATION DES APPAREILS CONTENANT DES PCB ET PCT of 26<sup>th</sup> of February 2003, the Paper for the CLEEN conference (a translation of Summary sheet of the French National Scheme) and added information sent in response to the questionnaire.

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

PCBs/PCTs have been produced since 1930. The production stopped in the 80's. The open use of PCBs like printing inks and adhesives was prohibited in 1979. Sale and purchase of PCBs or equipment containing PCBs and placing on the market such as new equipments are prohibited according to the *2nd of February 1987 Decree (Décret n° 87-59 du 2 février 1987 relatif à la mise sur le marché, à l'utilisation et à l'élimination des polychlorobiphényles et polychloroterphényles)*.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

The *18<sup>th</sup> of January 2001 Decree* modified the *2<sup>nd</sup> of February 1987 Decree* and implements the Directive. Disposal must have taken place before 31<sup>st</sup> of December 2010. This Decree foresees a scheme for disposal of PCBs with inventories based on declarations of owners of equipment containing PCBs.

To implement this scheme, the Ministry in charge (Ecology and Sustainable Development) is assisted by a National Commission created by the *Ordinance of 23rd of October 2001 and 28th of January 2001*. This Commission has made a national plan for decontamination and elimination of PCB containing equipment. The *Ordinance of 26th of February 2003* approved 'le plan national de décontamination et d'élimination des appareils contenant des PCB ou PCT'.

Use of components, equipments and materials containing more than 30 litres of PCB or PCT products is subject to declaration according heading N° 1180-1 of the French nomenclature of classified installations (French national legislation on classified installations – Environment Act)

#### 3. Limits correspondence with Directive

Yes, 50 ppm.

#### 4. Subsidiary regulation

No

### B. Executive

#### 1. Inventory on PCB containing equipment

Based on data given by all departments, the French Agency for Environment and Energy (ADEME) has realised a national inventory in 2002.

##### The result of the inventory:

508.076 transformers, 3537 capacitors, and 13321 other equipment (total 545.610 equipments). The quantity was 33.462 ton (see page 27 of the Plan).

#### 2. Plan and other executive measures

Since 1975 an obligation exists to label equipment insulated by PCBs. Many of the equipment are labelled with the clear indication of the nature of the insulator or electric together with technical features of the equipment. If information does not appear clearly on the equipment and if it is likely to contain PCBs, they should be considered as equipment containing them.

Conditions of use of equipment containing or likely containing PCBs (set out in the *18th of January 2001 Decree*):

- Every owner that has not notified its equipments must do it without delay to the administration before 25 April 2001.
- Every owner of equipment containing PCBs must respect the disposal and decontaminations calendar of the national scheme.
- Every owner must label the notified equipments containing PCBs and the decontaminated equipments.
- Every owner of waste containing PCBs has the obligation to give them for treatment by an accredited disposal company or in an authorized plant by another Member State of the EU. It is prohibited to mix waste containing PCBs with other waste or substances before giving them to the accredited company. Every owner has the obligation to check under his own responsibility that maintenance, follow-up, removal of equipment is made by competent companies.
- Every owner has the obligation when transporting their waste, to use a company that is declared to the administration according ADR rules.

Anyone who would not decontaminate or dispose of equipment containing a volume of PCBs higher than 5 dm<sup>3</sup>, in contradiction with the PCB national scheme, will be punished with a fine of 1500 euro.

#### *Plan*

The Minister has created a National Commission to prepare a national elimination programme.

This Plan contains the following conditions:

1. general conditions applying to all other owners: The plans of the holders of equipment must be sent to the Commission.
2. specific individual schemes of owner or more than 300 equipments validated by PCBs national commission. New schemes can be proposed to the national commission.
3. specific individual schemes of owner of less than 300 equipment validated by PCBs national commission.

The whole scheme with both specific and general conditions allows spreading along 8 years the burden of decontamination and disposal of large number of equipments and their replacement. Transformers containing between 50 and 500 ppm of PCBs will be disposed at the end of their use, therefore general conditions and date of 31<sup>st</sup> of December 2010 cannot be applied to them.

#### **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

The Directive on WEEE is applicable on equipment with less than 5 dm<sup>3</sup> volume PCB. This equipment is not submitted to notification procedure. No other particular measures for equipment < 50 ppm.

#### **4. Removal Companies/disposing facilities**

Every owner of waste containing PCBs has the obligation to give them for treatment to an accredited disposal company or in an authorized plant by another Member State of the EU. It is prohibited to mix waste containing PCBs with other waste or substances before giving them to the accredited company. Every owner has the obligation to check under his own responsibility that maintenance, follow-up, removal of equipment is made by competent companies.

A number of companies may handle PCB contaminated equipment:

- Incineration (2 companies): Arkema and Tredi. The capacity is 15.000 ton / year.
- Decontamination (9 companies) : Aprochim, Areva, CLIMATELEC, Daffos & Baudasse, GEP-TREDI, TRANSFO SERVICES, SEA MARCONI FRANCE SARL, Tredi and TRANSFO EST. The capacity is about 33.000 ton / year.

#### **5. Responsible authorities**

The 'Préfet' (service de l'inspection des installations classées) is the representative of the State at the local level.

## C. Results

### 1. Quantity PCB removed and left

Between 1996 and 2003 the yearly quantity eliminated of waste produced in France has only been quite constant (between 17 000 and 24 000 tonnes). In this period we observed a shift from incineration to decontamination.

Up to now a considerable quantity of PCB containing equipment has been removed and disposed.

#### Quantity of PCB containing equipment disposed in French treatment facilities (in ton): waste produced in France only

	1996	1997	1998	1999	2000	2001	2002	2003
<b>Incineration</b>	6 493	5 839	5 734	5 670	4 509	4 861	4 575	4 728
<b>Decontamination</b>	11497	11990	13447	15254	13801	12 690	15 603	18 535
<b>Total</b>	17990	17829	19181	20294	18310	17 551	20 178	23 263

The inventory in 2002 has pointed out there are still 545.610 equipments with a total quantity of 33.462 ton PCB to be decontaminated or disposed.

### 2. Quantities PCB disposed by treatment facilities

The table below shows the quantity of waste that has been disposed by (French) treatment facilities.

#### Quantity PCB containing equipment removed (in ton) waste both produced in France and other countries

	1996	1997	1998	1999	2000	2001	2002	2003
<b>Incineration</b>	12 164	8 533	9 284	8 265	7 355	7 861	6 455	7 280
<b>Decontamination</b>	13 636	13 363	15 864	16 808	15 542	14 069	16 883	19 123
<b>Total</b>	25 800	21 896	25 148	25 073	22 897	21 930	23 338	26 403

The table below shows the quantity of waste produced abroad that has been disposed by French treatment facilities.

#### Quantity of PCB containing equipment disposed in French treatment facilities (in ton) waste produced abroad only

	1996	1997	1998	1999	2000	2001	2002	2003
<b>Incineration</b>	5 671	2 694	3 550	2 595	2 846	3 000	1 880	2 552
<b>Decontamination</b>	2 139	1 373	2 417	1 554	1 741	1 379	1 280	588
<b>Total</b>	7 810	4 067	5 967	4 149	4 587	4 379	3 160	3 140



## 9. Fiche Germany

### A. Legislation

#### 1. Measures to forbid production and trading of PCBs (including restricting the reuse of PCB)

Concerning restricting the use of PCBs, several measures were taken:

1972: use of PCB is banned in open systems.

1978: also use of PCB is banned in closed systems, (*Executive Order to the Federal Emission Control Act of 1978*: the restriction of PCB/PCT and VC).

1983: the production of PCB was terminated completely.

1984: ban on application in electric equipment<sup>28</sup>.

1987: restriction of PCBs in waste oils with a limit of 20 ppm (*Executive Order to the Federal Waste Act of 1987*).

1988: the import of PCB containing hydraulic fluids for use in coal mining was terminated<sup>29</sup>.

1989: prohibition of any new use since 1989: a total ban.

(*Executive Order of 18<sup>th</sup> of July 1989*: ban of PCB with rules on limited use of PCB containing appliances until end of 1999).

(*Federal Communication of a uniform analytical method for PCB and PCT detection*, 6<sup>th</sup> of December 1989).

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's for 2010

The implementation of the Directive has taken place by the *PCB Waste Ordinance from 26th of June 2000 (Die Verordnung über die Entsorgung polychlorierter Biphenyle, polychlorierter Terphenyle sowie halogenierter Monomethyldipenylmethane und zur Änderung chemikalienrechtlicher Vorschriften, BGBl teil 1)*. According to this Ordinance:

- from this moment, PCB containing equipment with more than 50 mg/kg must be decontaminated or disposed. In exceptional cases, the last date is 2010.
- other wastes with a PCB content > 50 ppm (for example the mantle of cable) have to be disposed and may not be recycled.
- equipment with PCB as dielectric material (small capacitors) with less than 100 ml use is allowed until end of lifetime. With a content of 100 ml till 1 litre the use must be ended at the end of 2010.
- The regulation also contains rules for the decontamination / disposal of the PCB waste.

German regulation before 2000 already required that PCB containing equipment with more than 1 litre should be disposed before 1993 and PCB containing equipment smaller than 1 litre should be disposed before 1999.

The *PCB Waste Ordinance* is linked with the *Chemicals Prohibition Ordinance (Chemikalienverbotsverordnung)* and the *Ordinance on Hazardous Substance (Gefahrstoffverordnung)*. According to the first Ordinance, applications with PCB must not be in use by the year 2000. No requests for exceptional continuation of the use of this equipment have been received by the Lander administration and also in a query to important users, no PCB containing equipment in use has been found<sup>30</sup>. The second order is about a labelling duty for PCB containing materials<sup>31</sup>.

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<sup>28</sup> Correspondence research EC Commission, Mr. M. Pohlmann.

<sup>29</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001<sup>29</sup>

<sup>30</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002

<sup>31</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 7

The *Waste Wood Ordinance* includes requirements pertaining to separation, a ban on land filling of waste wood, and limits on the content e.g. of PCB. The Ordinance has entered into force on 1<sup>st</sup> of March 2003. Waste wood contaminated with PCB must be disposed of in accordance with this Ordinance<sup>32</sup>.

### 3. Limits correspondence with Directive

Yes, 0,005 %<sup>33</sup>.

### 4. Subsidiary regulation

No.

## B. Executive

### 1. Inventory on PCB containing equipment

Yes, in 1998.

#### The result of the inventory:

The result of the inventory was about 1600 ton PCB: about 600 ton in transformers (12000 ton) and 960 ton capacitors (2600 ton). By the end of 1999 the PCB out of the transformers has been disposed. Due to the classification as special waste it can be assumed that the PCBs in public and commercial institutions or as well as in industrial waste are disposed of properly. This applies particularly for PCB transformers because there is a labelling obligation for these in connection with the *Hazardous Substances Ordinance*. This is why the disposal of transformers and large capacitors does not represent a significant source of PCB emissions in Germany<sup>34</sup>.

*Until the use in open applications was banned in the early 1970s, approximately 25.000 ton PCBs went into applications like sealants and paint in Germany. According to the German Federal Health Office, the total quantity of sealing material containing PCBs used in the construction sector was approx. 20.000 tons. In this context, sealants produced on the basis of polysulphide polymer (trade name Thiokol) are particularly relevant. In measurements conducted by the German Federal Environmental Agency at the beginning of the 90's PCB concentrations of 5 - 210 g/kg were found.*

With a service life of the relevant products of 15- 25 years, most of these open applications would already have been forwarded to waste treatment by the year 1994. The inventory in 1998 pointed out that about 2.250 ton PCB is still present in building products (sealant and grouting). It can be assumed that certain applications, for example in construction materials, were designed for longer periods of use (40 years for some paints and sealing materials). Consequently, sealing materials probably represent the most important still relevant source of emissions from open applications during the 90's.

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Also cables isolated with PVC may play a role, cf. report "Study to facilitate the implementation of certain waste related provisions of the Regulation on Persistent Organic Pollutants (POPs)" recently performed by BiPRO for the European Commission.

In order to comply with the provisions of Directive a new questionnaire has been sent out to the 'Länder' administrations to establish an inventory of PCB/PCT containing material. The questionnaire was answered in 2001, added by "an inventory and a disposal plan of PCB-equipment". The most important results are, that more than 99 percent has already been disposed<sup>35</sup>.

<sup>32</sup> Press release 16-6-2004, [http://www.bmu.de/english/waste\\_management/pm/3617.php](http://www.bmu.de/english/waste_management/pm/3617.php)

<sup>33</sup> Verordnung über die Entsorgung polychlorierter Biphenyle, polychlorierter Terphenyle und halogener Monomethyldiphenylmethane.

<sup>34</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002, page 20 : UBA (1999): Bestandsaufnahme PCB-enthaltender Geräte in Deutschland - Aktualisierung der Studien von 1990 und 1993. Hartmann, J., Klug, Susanne, Moschke, Hans Jürgen; GfBU - Gesellschaft für Betriebsberatung, Sicherheits- und Umweltfragen, Report Number: 29935331<sup>1</sup>

<sup>35</sup> press release of June 2004, Ministry for Environment

## 2. Plan and other executive measures

### 3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)

According to *the PCB Waste Ordinance* equipment with PCB as dielectric material (small capacitors) with less than 100 ml use is allowed until end of lifetime. With a content of 100 ml till 1 litre the use must be ended at the end of 2010.

### 4. Removal Companies/disposing facilities

Disposal capacity:

16 incineration plants (total capacity 52.000 ton/year).

1 decontamination plant (5.000 ton/year).

3 under ground storage in which 85.000 ton has been stored (Herfa Neurode, Zielitz, Borth)<sup>36</sup>.

### 5. Responsible authorities

The Federal Länder.

## C. Results

### 1. Quantity PCB removed and left

*Based on the study of UBA 1999<sup>37</sup> and the documents in the file of EC commission we conclude:*

*Originally quantity of PCB containing equipment in former West Germany, 1988: up to 286.000 ton former GDR, 1991: up to 25.000 ton.*

*Approximately 274 000 ton of this quantity have been disposed of by 1998 so at that time 37000 ton PCB containing material and equipment still remained in Germany.*

*At 1<sup>st</sup> January 2001 381 equipments with 395 ton PCB leaved to be disposed of January 2003: only 60 ton PCB liquid<sup>38</sup>.*

In Germany the phase-out of the use of PCBs is now almost complete. Five Federal Länder have already registered complete disposal. In two Länder, a total of six pieces of equipment are still in use with exception permits. Only a few pieces of equipment containing PCBs and small amounts of liquids containing PCBs remain to be disposed of. The environmentally sound disposal of this remaining amount is guaranteed, since the capacities far exceed the remaining volumes. Around 10 years ago more than 300,000 tonnes of equipment and liquids containing PCBs required disposal. More than 99% of this has already been disposed of. Only two transformers will require disposal by the target year of 2010<sup>39</sup>.

### 2. Quantities PCB disposed by treatment facilities

No information available.

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<sup>36</sup> Correspondence research EC Commission, Mr. M.Pohlmann

<sup>37</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002.

<sup>38</sup> Correspondence research EC Commission, Mr.M. Pohlmann

<sup>39</sup> Press release 16-6-2004, [http://www.bmu.de/english/chemical\\_safety/pm/6138.php](http://www.bmu.de/english/chemical_safety/pm/6138.php)

## 10. Fiche Greece

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

The *Senior Chemical Council's Decision 1310/86 (FEK 605/B/23-09-1986)*. It is produced by the General Chemical State Laboratory. It prohibits the trade of devices containing PCBs.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*Joint Ministerial Decision 7589/731/2000 (FEK 514/B)*

Setting of measures and conditions for the PCB/PCT management.

*Joint Ministerial Decision 18083/1098E.103/2003 (FEK 603/B)*

Plans for the disposal /decontamination of PCB-containing equipment - General guidelines for the collection and subsequent disposal of PCB-containing equipment and waste, in line with article 7 of *JMD 7589/731/2000 (B' 514)*.

The date that PCBs has to be disposed or decontaminated is 2010, as it is set in the Directive.

#### 3. Limits correspondence with Directive

Yes, 50 ppm PCB.

#### 4. Subsidiary regulation

There is no subsidiary regulation.

### B. Executive

#### 1. Inventory on PCB containing equipment

Yes. After the issue of Directive 96/59/EC, data on PCB has been sent to the European Commission in 2001 and 2002, but, due to the lack of all necessary data, there is a new effort in process, for compiling a new inventory, in line with the provisions of *JMD 18083/1098E.103/2003*. The data sent in 2002 was as follows:

Operating Transformers: 470.

Operating Capacitors: 14,210.

Stored equipment: 1,200.

Some earlier investigations have been executed. With the first reports on PCBs dated since 1987 and 1989, the quantities of liquid PCB have been estimated to be 479 tons in 1991, distributed as it is demonstrated in the table below with their major part being possessed by the Public Power Corporation (PPC).

Number of Devices containing PCBs in Greece in 1991		
	TRANSFORMERS	CAPACITORS
Operating equipment	367	14,197
Auxiliary equipment	49	774
Useless equipment	3	434
<b>TOTAL</b>	<b>419</b>	<b>15,405</b>

#### 2. Plan and other executive measures

*JMD 18083/1098E.103/2003* sets guidelines for the preparation of such plans by PCB holders (article 5). The holders are obliged to draw up their own plans and notify them to the competent prefectural authority. These authorities must send the compiled relevant information to YPEHODE.

YPEHODE addressed to all the Prefectures of the country, as competent authorities for the permitting and auditing of waste management activities, in order to collect through them the necessary data. Analytical guidance for the inventory compiling is provided in *JMD 18083/1098E.103/2003*. The companies, authorized for the removal of PCBs, are obliged to inform YPEHODE (and the Prefectures involved) regularly about the exports of PCB waste /equipment.

### **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

According to article 2 par. 8 of *JMD 18083/1098E.103/2003*, the small PCB-containing equipment mentioned above is subject to separate collection and disposal at the end of its useful life.

### **4. Removal Companies/disposing facilities**

Usually those companies are the same companies that obtain hazardous waste management permits. Specifically for the “decontamination of PCB-containing transformers” (Article 6 *par A.2 of JMD 7589/731/2000*) a company must obtain also a decontamination permit.

The following companies are licensed to remove PCBs:

- Cinar, Athens
- Arvis Zimmerman, Athens
- Envirochem, Piraeus
- Intergeo, Thessaloniki
- Lobbe Tzillalis, Metamorfoosi
- Suc Hellas N. Smirni
- Environmental Protection Engineering, Piraeus
- Polyeco S.A., Thess, Aspropyrgos.

In Greece there are not any disposal facilities for PCB/PCT. This equipment / waste are exported to other EU countries for final disposal.

### **5. Responsible authorities**

The Ministry of Environment, Physical Planning and Public Works (YPEHODE), as defined in Article 6 par. B of *JMD 7589/731/2000*.

## **C. Results**

### **1. Quantity PCB removed and left**

The latest official data refer to exports of “waste containing or contaminated with PCBs” (equipment and other waste) in year 2003 and are as follows:

- Amount exported: 958.627 metric tons<sup>40</sup>;
- Countries of destination: France, Belgium, Finland and Germany;
- Method of PCB oil management: D10, D12.

Data before 2003 have been provided to the European Commission and is included in the Greek Reports on the implementation of Regulation (EEC) 259/93.

In the time period 1991-1998 a total quantity of 794 ton waste containing or contaminated with PCBs (equipment and other waste) has been exported to other EU countries for final disposal.

### **1. Quantities PCB disposed by treatment facilities**

Not relevant, because in Greece there are not any disposal facilities for PCB/PCT.

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<sup>40</sup>.Includes equipment (mostly) and some other waste containing or contaminated with PCB (contaminated material, soil etc).

## 11. Fiche Hungary

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

In Hungary the No 41/2000 (XII. 20.) EüM-KöM joint decree has been in effect since the 1<sup>st</sup> of January, 2000. According to Annex 1 of the decree, preparations containing more than 0,005 % w/w PCB belong to the group of substances „prohibited to use”.

According to the EU legislation, the *Ministerial Order 5/2001* prohibits the separation of PCBs from other substances for the purpose of reusing the PCBs and the topping up of transformers with PCBs.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

The *Ministerial Order 5/2001. (II.23. KöM)* came into force in 2001 and regulates the PCBs and contains obligation to ensure that PCB containing equipments will be disposed before 2010.

#### 3. Limits correspondence with Directive

Yes.

#### 4. Subsidiary regulation

Hungary has no subsidiary regulation to stimulate companies to dispose PCB containing equipments. Waste Management plans can be considered as indirect tool.

### B. Executive

#### 1. Inventory on PCB containing equipment

According to the *Ministerial Order 5/2001* the first report was to be submitted before 31<sup>st</sup> of March 2002. After that reports have to be submitted to the environmental inspectorates yearly.

The last revision of the inventory took place in September 2004. It was carried out by self-reporting system and with help of questionnaires sent by environmental inspectorates. The detailed register has been maintained by inspectorates on the base of EWC codes. The summary of the data at national level is on-going.

#### 2. Plan and other executive measures

- The National Waste Management Plan declares that program for PCB, as special waste flow has to be established. This program will be set up in 2005.
- The Regional Waste Management Plans also contain plans for cleaning or disposal of PCB containing equipment but these plans are not detailed sufficiently.
- According to the *Act XLIII of 2000 on Waste Management* the producer of hazardous waste, shall draw up a waste management plan for a period of a minimum of three years, and shall refer to the prevention of hazardous waste generation, the reduction of volume and hazardous nature of such waste, and its recovery or disposal. According to this the holder of PCB shall prepare a Waste Management plan containing time-schedule for the decontamination and/or disposal of inventoried equipment and the PCBs contained.
- In addition, Hungary joined the Rotterdam Convention in September 2004, which was declared by the Governmental Order No 266/2004. (IX.23.). According to Annex III of the Convention, PCBs fall into the Prior Informed Consent Procedure(PIC) .The No 304/2003/EC Regulation, regulating PIC Procedure in the EU, is binding for Hungary as an EU Member States.

#### 3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)

Hungary has not prepared additional plan for the collection and removal of small PCB containing equipment. The Waste Management Plans mentioned above should contain these details.

#### 4. Removal Companies/disposing facilities?

Treatment of hazardous waste (as PCB) may only be carried out according to the provisions laid down in a separate legal rule (*Government Decree 98/2001 on the Conditions for Carrying Out Activities Related to Hazardous Waste (VI. 15 Korm )*) on hazardous waste, and only with the permit of the regional environmental inspectorate. This covers collection, gathering, transportation, pre processing, storage, recovery and disposal of waste. Permits are also required for imports and exports of hazardous waste. They are issued by the Chief Inspectorate.

Hungary supports the incineration of PCBs, and has sufficient capacity for incineration of PCBs.

#### 5. Responsible authorities

In waste management issues the inspectorate for environmental protection shall exercise the jurisdiction of the authority of first instance.

The environmental protection authority shall regularly check that legal rules and official provisions on waste management are complied with<sup>41</sup>.

Tasks of the Designated National Authority in relation to PIC Procedure are fulfilled by NCPH-NICS, with the exception of pesticides and fertilizers

### C. Result

#### 1. Quantity PCB removed and left

The detailed data are registered by regional inspectorates. The Ministry has the summary of the inventories.

Registered equipment:	Dielectric fluids
1.435 db transformers	176 125 dm <sup>3</sup> in transformers
14.585 db capacitors	62 426 dm <sup>3</sup> in capacitors

The quantities of PCBs that have been removed and disposed are registered database on the base of EWC code. 24.445 kg were incinerated in 2002.

#### 2. Quantities PCB disposed by treatment facilities

In 2002 24.445 kg PCB waste has been incinerated.

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<sup>41</sup> Hazardous and Industrial Waste Management in Accession Countries, Eurostat, European Commission, 2004, page 16

## 12. Fiche Ireland

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

According to the *European Communities (Dangerous Substances and Dangerous Preparations) (Marketing and Use) Regulations, 1987 (S.I. No. 204 of 1987)*, PCBs may not be used except the use of equipment, plant and fluids referred to in a points (a) to (e) which are in service on 30<sup>th</sup> of June, 1986.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

The *Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163 of 1998)* transpose into Irish law provisions of the Directive.

Equipment containing more than 5 dm<sup>3</sup> must be disposed or decontaminated not later than the end of 2010. Article 13(2) of the *Regulations* states that "any equipment of a type which is likely to contain PCBs shall be considered as containing PCBs unless it is reasonable to assume the contrary".

#### 3. Limits correspondence with Directive

Yes, 50 ppm.

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

Article 15 of the *Waste Management (Hazardous Waste) Regulations, 1998*, requires holders of PCBs, used PCBs or contaminated equipment containing more than 5 dm<sup>3</sup> of PCBs to give notice to the EPA of such holdings. In the period 1998 to 2001 two declarations have been made to the EPA<sup>42</sup>; by the Electricity Supply Board and Stonearch Branch Randstone Ltd. According to waste contractors in Ireland and the UK, PCB waste continues to arise in Ireland.

The EPA undertook a project in 2001 to establish the extent of PCB holdings in Ireland subject to inventory, in accordance with the Regulations, and to compile an inventory of such holdings.

The Management Plan for PCBs (August 2002) reports<sup>43</sup>: About 1000 questionnaires have been sent, 400 have been returned of which 200 are holders of PCBs: 21 companies have 67.050 litres PCB oil, equipment < 5 dm<sup>3</sup> 169 companies with 3.206 litres PCB oil. The ESB (Electricity Company) owns in total 140.000 transformers:

- large transformers are PCB free;
- out of small transformers 0,16 % contain PCB with each 40 litre oil: 224 objects with in total 8.960 litres PCB oil.

Summary<sup>44</sup>:

- Inventoried:

Transformers		Capacitors		< 5 dm <sup>3</sup>	
Number	Quantity	Number	Quantity	Number	Quantity
64	66 ton	127	1 ton	99656	3 ton

<sup>42</sup> Management Plan for PCBs 2002, page 16

<sup>43</sup> Correspondence research at EC Commission

<sup>44</sup> Correspondence research at EC Commission



Total: 70 ton PCB oil

- 336.114 objects with volume 263 ton PCB are not inventoried.

## **2. Plan and other executive measures**

The National Hazardous Waste Management Plan deals with the requirements of Articles 4(1) (member states compile an inventory of equipment with PCBs) and 11(1) of the Directive (drawing-up plans). The EPA has set up the Management Plan for PCBs (August 2002).

In this context, in the absence of hazardous waste disposal facilities capable of processing PCB waste, all PCB waste should continue to be exported for disposal.

There are a number of waste contractors who manage the removal of waste PCBs and contaminated equipment including its storage and onward export for recovery or disposal by high temperature incineration. The network for the removal, collection and onward disposal is considered adequate. There may be a need to make the existing network accessible to small scale generators of PCB waste to ensure that such small scale arisings are collected and satisfactorily managed.<sup>45</sup>

## **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

According to article 14 (1)(b), PCBs must be disposed of as soon as possible. According to article 14 (1) (a) used or waste PCBs must be disposed of as soon as possible. Equipment containing smaller than 5 dm<sup>3</sup> must be removed, be taken out of use, recycled or disposed of the end of its useful life.

## **4. Removal Companies/disposing facilities**

A waste collector needs a waste permit.

There are no licensed facilities for the disposal of PCBs in Ireland (other than for storage prior to export). Any facility for the disposal of PCBs will require a licence from the EPA and any relevant disposal technology will be considered in this context.

It is unlikely, given the relatively small quantities of PCB waste expected to arise in future years that a dedicated PCB disposal facility will be established in Ireland. It is more likely that the establishment of a thermal treatment or other suitable treatment facility for the disposal of hazardous waste in general may provide disposal capacity for PCB waste.<sup>46</sup>

## **5. Responsible authorities**

Environment Protection Agency.

# **C. Results**

## **1. Quantity PCB removed and left**

According to the National Hazardous Waste Management Plan, in 1996 71 ton and in 1998 190 ton PCB waste has been exported.

The inventory in 2001 pointed out there were 64 transformers and 127 large capacitors and almost 100.000 small capacitors (total quantity of PCB 70 ton). The quantity of not inventoried equipment is estimated at 336.114 objects with a volume 263 ton PCB.

## **2. Quantities PCB disposed by treatment facilities**

No treatment facilities in Ireland.<sup>47</sup>

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<sup>45</sup> National Hazardous Waste Management Plan, page 76

<sup>46</sup> National Hazardous Waste Management Plan, page 76

<sup>47</sup> National Hazardous Waste Management Plan, page 76

## 13. Fiche Italy

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

*Decree 216/88<sup>48</sup>.*

- Art.4: "It is forbidden the immission and the use of chemicals listed in the Annex 1 or equipments and fluids containing PCBs".
- Derogation: "The use of equipments containing PCBs is allowed until their elimination or until the operative lifetime of the apparatus".
- Art. 5: Institution of a registry for a census of the equipments, apparatus and fluids containing PCBs.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*Decreto legislativo 22 maggio 1999, n. 209. Attuazione della Direttiva 96/59/CE relativa allo smaltimento dei policlorodifenili e dei policlorotrifenili. (pubblicato sulla Gazzetta Ufficiale, n. 151 del 30 giugno 1999)*

This Decree implements the Directive, related to<sup>49</sup>

- Disposal of exhausted PCBs
- Decontamination and disposal of PCBs from equipments containing these chemicals, in order to allow their complete "ELIMINATION".
- Article 3: Inventory of apparatus containing PCBs exceeding a volume of 5 dm<sup>3</sup>. This inventory must include:
  - Name and address;
  - Location;
  - Amount and PCBs concentration in the apparatus;
  - Date and substitution to carry out;
  - Date and declaration according to the art. 5 of DPR 216/88.
- Article 4: "Predisposition of programs of disposal of apparatus containing PCBs with a volume inferior than 5 dm<sup>3</sup> within 3 years from the present Decree.
- Article 5:
  - Paragraph 1: General decontamination/disposal before 2005;
  - Paragraph 2: decontamination/disposal allowed before 2010 if equipment volume is more than 5 dm<sup>3</sup>;
  - Paragraph 3: disposal allowed at the end-of-operation if equipment volume is more than 5 dm<sup>3</sup> and PCB content is less than 500 ppm.
- Article 7: "the disposal must be carried out by incineration", according to the 94/67/CE Directive.

*Ministerial Decree 11 October 2001, dealing with "Conditions for the use of transformers containing BCB pending decontamination and discharge."*

#### 3. Limits correspondence with Directive

Yes.

#### 4. Subsidiary regulation

No

### B. Executive

#### 1. Inventory on PCB containing equipment

The inventories are described in the regional plans.

A summary of the inventory of PCB containing equipment is shown in the following table.

<sup>48</sup> <http://www.ambientaliabruelles.org/scie/RAL.pdf>

<sup>49</sup> <http://www.ambientaliabruelles.org/scie/RAL.pdf>

Region /province	Equipment containing PCB (ton)	Reference year of the inventory
Abruzzo	300	2002
Basilicata	151	2003
Calabria	2966	1998
Campania	572	2002
Emilia Romagna	1310	2000
Bologna	723	2000
Ferrara	32	2000
Forli-Cesena	43	2000
Modena	109	2000
Parma	15	2000
Piacenza	121	2000
Ravenna	90	2000
Reggio Emilia	119	2000
Rimini	60	2000
Friuli Venezia Giulia	571	2003
Lazio	1300	2003
Liguria	1022	2003
Lombardia	2462	2002
Marche	273	2003
Molise	52	2002
Piemonte	2068	2000
Puglia	1367	2002
Sardegna	522	2002
Sicilia	1672	2002
Toscana	1722	2002
Trentino Alto Adige	n.d.	
Umbria	104	2000
Valle d'Aosta	32	2002
TOTAL	>19778	

## 2. Plan and other executive measures

The regional plans already have been forwarded to the EU.

## 3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)

The regional plans should contain measurements concerning small PCB containing equipment. The general obligation for decontamination and disposal has been provided for in article 5 of legislation *Decree No. 209/99*.

## 4. Removal Companies/disposing facilities

Licenses that companies have to deal with the removal of PCBs are according to article 27 and 28 of *Decree 22/97*. The disposal facilities burn PCBs. To UNEP notified company: SEA Marconi Technologies SAS in Collegno<sup>50</sup>.

## 5. Responsible authorities

Regional authorities

## C. Results

<sup>50</sup> [http://www.chem.unep.ch/pops/pcb\\_activities/pcb\\_dest/Europe/Sea%20Marconi-Italy.pdf](http://www.chem.unep.ch/pops/pcb_activities/pcb_dest/Europe/Sea%20Marconi-Italy.pdf)

### **1. Quantity PCB removed and left**

The inventoried quantity of PCBs per region gives the total quantity of PCBs which is about 20.000 tonnes of PCB containing equipment.

### **2. Quantities PCB disposed by treatment facilities**

## 14. Fiche Latvia

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

*Regulations of Cabinet of Ministers No. 158*, approved at 25<sup>th</sup> of April 2000, place restrictions and bans on use and marketing of some dangerous chemical substances and dangerous chemical products, including PCBs. A ban is placed since 2000, with some exceptions until 2002.

In exceptional cases equipment may be used until validity term expiry, in which case there must be SEI issued permit and appropriate labelling on the equipment. The following categories could be used until 2002:

1. closed-system electrical equipment transformers, resistors and inductors;
2. large condensers (>1 kg total weight);
3. small condensers (provided that the PCB has a maximum chlorine content of 43 % and does not contain more than 3.5 % of penta- and higher chlorinated biphenyls);
4. heat-transmitting fluids in closed-circuit heat-transfer installations;
5. hydraulic fluids for underground mining equipment;

The use of equipment, plant and fluids referred to in points 1 to 5, which are in service, shall continue to be authorised until they reach the end of their service life.

The placing on the second-hand market of such equipment, plant and fluids, which are not intended for disposal, is prohibited from 2003<sup>51</sup>.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*The Cabinet of Minister Regulations No. 529*, approved in 2001, stipulate the procedure according to which PCB waste management shall be carried out.

*The Cabinet of Minister Regulations No. 117*, approved in 2002, stipulate the use and labelling of PCB containing equipment, as well as that PCB containing equipment should be treated or disposed and PCB contained therein should be incinerated before 1<sup>st</sup> of January 2010.

These Regulations stipulate that if PCB content in the equipment exceeds 5 cm<sup>3</sup>, the owner or operator of equipment shall inform Regional Environmental Boards (REB), which compiles received information and submits it to Latvian Environment Agency (LEA). Equipment shall have clearly engraved or specially carved labelling prior to treatment, incineration or disposal of PCBs contained.

#### 3. Limits correspondence with Directive

Yes.

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

An inventory was conducted under UNDP/GEF project *Preparation of the POPs National Implementation Plan under the Stockholm Convention* from 2002 till 2004. This inventory allowed identifying current number of PCB containing equipment in use, as well as volumes of PCB waste.

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<sup>51</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 7

The main Latvia's sectors of industry that are still using PCB containing equipment are: power production and management, chemical and petrochemical industry, ferrous metallurgy, wood processing, pulp and paper industry. Large volumes of PCB are used in security area for various electric appliances, as well as additives to hydraulic oils. The inventory conducted under UNDP/GEF project allowed to identify current number of PCB containing equipment in use, as well as volumes of PCB waste.

#### Results of the inventory

According to inventory data 4265 capacitors (gross weight 139.343 kg) and 34 transformers (gross weight 231.634 kg) are in use in Latvia. However, inventory is still to be completed and data shall be updated. Majority (3519 or 83%) of the identified capacitors are KC type, and their cladding contains synthetic oils. These capacitors have been manufactured in former USSR Serpuhova and Ustykamenogorsk plants. Capacitors of other types (KM, KΘ) contain mineral oils and electrolytes that have PCB additives. PCB containing capacitors are mainly used by large companies that have to ensure constant current intensity (reactive capacity) for operations of various equipment and facilities, as well as companies that have high fire hazard or explosiveness. Around 80% of identified PCB containing capacitors is used by 40 companies of Latvia. Location of capacitors containing PCBs in Latvia by regions is directly dependent on location of the major industrial companies - majority (3546 - 83% of the total) of identified capacitors are located in Lielrīga region – covering Rīga and Ogre districts. Over 85% of the identified PCB containing capacitors are produced prior to 1980. Large number (2980) of capacitors has been manufactured in 1978 and 1979.

#### **2. Plan and other executive measures**

A National Environmental Policy Plan 2004-2008 was approved by the Cabinet at 4 February 2004.<sup>52</sup> A Plan concerning PCBs is made, but it is not yet approved by government. It will be approved in April, 2005.

*Regulations No. 117* stipulate that if PCB content in the equipment exceeds 5 cm<sup>3</sup>, the owner or operator of equipment shall inform Regional Environmental Boards (REB), which compiles received information and submits it to Latvian Environment Agency (LEA). Equipment shall have clearly engraved or specially carved labelling prior to treatment, incineration or disposal of PCBs contained.

#### **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

There are no plans yet.

PCB is not registered / licensed for uses as plant protection product, wood preservative, disinfectant, antifouling and biocide. Concerning use as chemical substance no information is available.

#### **4. Removal Companies/disposing facilities**

Companies having PCB (containing equipment) should be licensed in accordance with IPPC principle. Latvia does not have received applications for licences aimed on the removal of PCBs. In Latvia the following disposing facilities exist: Incineration plant for hazardous waste, permanent storage facility for hazardous waste.

#### **5. Responsible authorities**

Latvian State Environmental Service (LSES).

Regional Environmental Boards (REB).

Latvian Environmental, geological and meteorological agency.

Control over abundance of *Regulations No. 158* is exercised by State Environment Inspection (SEI).

State Labour Inspection (SLI) and State Sanitary Inspection (SSI).

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<sup>52</sup> Correspondence research at EC Commission.

## **C. Results**

### **1. Quantity PCB removed and left**

According to inventory data 4265 capacitors (gross weight 139.343 kg) and 34 transformers (gross weight 231.634 kg) are in use in Latvia. However, inventory is still to be completed and data shall be updated.

Another source says: regarding PCB waste it is estimated that around 100 tonnes exists in capacitors used in the energy supply system. Some of this waste has already been exported and disposed of in the Netherlands; the remainder is awaiting export for treatment/destruction. Alternatively it may be disposed of in the planned semi-mobile hazardous waste incinerator<sup>53</sup>.

### **2. Quantities PCB disposed by treatment facilities**

No information available.

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<sup>53</sup> Municipal Waste Management in Accession Countries, Eurostat, European Commission, 2002, page 20

## 15 Fiche Lithuania

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

The *Lithuanian Hygienic Norm HN 36:2002 on Banned and Restricted Substances* adopted on 27<sup>th</sup> of May 2002 by the *Order No. 239 of the Minister of Health* bans the placing on the market of PCB/PCTs or substances containing more than 0.005% of PCB/PCTs.

The reuse of PCB is restricted in Lithuania. It is restricted by the *Order of the Minister of Environment of 26<sup>th</sup> of September 2003 No. 473 on Rules on PCB and PCT Management*. [Chapter IV. Operation of Equipment Containing PCB declares:](#)

16. Prior to decontamination, prohibition of use and/or disposal following the requirements stated in the Rules, the operation of transformers containing PCB is possible only provided if they are sealed and in good working condition, and PCBs that contain comply with the technical standards or specifications.
17. Filling and/or refilling of transformers with PCBs is banned.
18. PCB shall not be isolated from other substances in order to reuse these PCBs.
19. [The use of PCBs for refilling of transformers is banned.](#)

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

The *Rules on PCB and PCT Management* implements the Directive. PCB containing equipment should be decontaminated or disposed of by the end of 2010 at the latest.

#### 3. Limits correspondence with Directive

Yes. The same PCB limits as in Directive are laid down in the *Rules on PCB and PCT Management*.

#### 4. Subsidiary regulation

There is no subsidiary regulation.

### B. Executive

#### 1. Inventory on PCB containing equipment

Lithuania performed an inventory on PCB-containing equipment in 2003 and corrected data in 2004. The data will be updated annually.

The *first* inventory has been carried out under the project "Implementation of the EU requirements for disposal of PCBs, waste oils and batteries" in 2003. Questionnaires and information pamphlets were submitted to 440 potential PCB holders. 63 percent returned the questionnaire.

The *second* inventory of PCB-containing equipment has been carried out in accordance with requirements of the Rules on PCB and PCT Management in 2003-2004. According to the requirements of the *Rules holders of equipment containing PCBs* shall compile inventory of equipment where PCB content exceeds 5 dm<sup>3</sup> and equipment containing PCBs from 0.05% to 0.005% by fluid weight. They shall submit Inventory Reports to respective Regional Environmental Protection Department under the Ministry of Environment every year. Information collected by the Regional Environmental Protection Departments is transferred to the database of Environmental Protection Agency. Gathering of data about state of PCB-containing equipment will be kept up-to-date on base of annual reports from holders of equipment according to requirements of the Rules on PCB and PCT Management.

The *third* inventory (correction of amounts) was performed under the project "Preparation of the POPs National Implementation Plan under the Stockholm Convention" in 2004.



The results of the inventories:

In summary of the results of all three inventories, the total amount of PCB containing equipment in Lithuania could be roughly estimated at 1100 - 1300 tonnes containing around 380 - 450 tonnes of PCBs.

**2. Plan and other executive measures**

*Order of the Minister of Environment of 19<sup>th</sup> of December 2003 No. 679 On the Main Drafting Provisions of the Plan on PCBs and Equipment Containing PCBs Decontamination and/or Disposal as well as the “ Plan on PCBs and Equipment Containing PCBs Decontamination and/or Disposal” itself.*

**3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

Outlines for the collection and subsequent disposal of non inventoried equipment still are under development.

**4. Removal Companies/disposing facilities**

There are no companies who are licensed / authorised to dispose PCBs in Lithuania. Temporary storage (less than 3 months) of PCB containing equipment is performed in the territory of owners. Afterwards the PCB containing equipment is handed over to the registered long term hazardous waste storage facility ‘Toksika’.

**5. Responsible authorities**

State Environmental Protection Inspectorate and Regional Environmental Protection Departments under Ministry of Environment.

**C. Results**

**1. Quantity PCB removed and left**

Not available.

**2. Quantities PCB disposed by treatment facilities**

No report.

## **16. Fiche Malta**

### **A. Legislation**

#### **1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)**

#### **2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010**

There are *Waste Management Regulations of 2002* about PCBs. Handlers of oils or other substances containing more than 50 ppm must act according to these Regulations. All substances or equipment containing PCCB must be decontaminated or disposed of as soon as possible, but no later than 31<sup>st</sup> of December 2010. Incineration on ships and land filling of PCBs are prohibited<sup>54</sup>.

#### **3. Limits correspondence with Directive**

#### **4. Subsidiary regulation**

### **B. Executive**

#### **1. Inventory on PCB containing equipment**

#### **2. Plan and other executive measures**

#### **3. Measures for small PCB containing equipment (smaller than 5 dm3 volume PCB)**

#### **4. Removal Companies/disposing facilities**

An important problem is the lack of recycling and disposal plants for hazardous waste. Appreciable quantities of PCBs/PCTs containing materials are in storage waiting export for disposal.<sup>55</sup> Studies carried out in 1992 and 1996 show that approximately 8000 litre of PCB oils and PCB-filled electrical transformers as well as asbestos and asbestos containing materials were in store at a number of industrial sites.

94,000 litres of waste oils PCBs contaminated and stored in drums, in decommissioned equipment and equipment still in use were registered with the Environmental Protection Department between November and December 2001<sup>56</sup>.

#### **5. Responsible authorities**

### **C. Results**

#### **1. Quantity PCB removed and left**

#### **2. Quantities PCB disposed by treatment facilities**

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<sup>54</sup> Municipal Waste Management in Accession Countries, Eurostat, European Commission, 2002, page 50

<sup>55</sup> Municipal Waste Management in Accession Countries, Eurostat, European Commission, 2002, page 49

<sup>56</sup> Number of indicator 101, generation of hazardous wastes, Chapter 4, Environment, pdfdocument

## 17. Fiche Netherlands

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

Since 1979 it is forbidden to bring PCB containing material in open application on the market and since 1985 it is forbidden to bring PCB in closed systems on the Dutch market. The Decree on this matter "the PCB-Decree (Stb. 1979, 281) has been replaced by the *PCB PCT and Chloro-ethene Decree Chemical Substances Act*.

*PCB PCT and Chloro-ethene Decree Chemical Substances Act (PCB-, PCT- en chlooretheenbesluit Wet milieugevaarlijke stoffen 1991).*

This Act forbids having PCBs and PCB containing equipment. Some equipment is allowed, for scientific research purpose. Till 1<sup>st</sup> of January 2003 it is allowed to have PCB containing transformers and capacitors. This Act says nothing about the disposing of PCB's.

The *Regulation Disposing PCB's (Regeling Verwijdering PCB's )* forbids the reuse of PCBs.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

The *Regulation Disposing PCBs (Regeling Verwijdering PCB's )* from 1998 implements the Directive. This measure has been made to dispose PCBs and PCB containing equipment. Under certain conditions PCB containing equipment may be decontaminated. This measure is meant for owners of the equipment and also for companies who dispose and decontaminate equipment.

According to the original regulation the elimination of PCB's / PCB containing equipment with > 0,5 ppm PCB per congener should be finished before 1<sup>st</sup> of January 2000. The deadline of the *Regulation Disposing PCBs* has not been achieved. The Inspector of the Ministry of Housing, Spatial Planning and Environment has therefore in 2001 written a letter to the Electricity Companies. New dates are given:

- Equipment with > 5 mg/kg PCB must be disposed / decontaminated before 1<sup>st</sup> of January 2002.
- Equipment with 0,5 - 5 mg/kg PCB must be disposed / decontaminated before 1<sup>st</sup> of January 2004.

#### 3. Limits correspondence with Directive

The limit for PCB contaminated material in the Netherlands is stricter than the EU limit of 50 ppm. The Dutch limit is 0,5 ppm per congener 28, 52, 101, 118, 138, 153 of 180.

#### 4. Subsidiary regulation

*Regulation of replacement and disposing of PCB containing coolant and PCB containing transformers and condensers, 29<sup>th</sup> of March 1984 , Stcrt 65, like revised by the Regulations of 28<sup>th</sup> of December 1985 (Bijdrageregeling vervanging en vernietiging van PCB bevattende koelvloeistof en PCB bevattende transformatoren en condensatoren, Stcrt 1986, 4.).*

Holders of PCB containing equipment could submit a request for subsidy if they intend to dispose of their PCB equipment. The subsidy amounted up to 60 % of the disposal costs and 20 % of the purchase of new equipment. From 1984 -1988 a total amount of 5.5 million Euros was available.

### B. Executive

#### 1. Inventory on PCB containing equipment

The *Regulation Disposing PCB equipment* declares that the holder of a PCB containing equipment (more than 5 dm<sup>3</sup>) must report to the Inspector of the Ministry of Environment. The following information should be notified within a period of 12 months after this regulation entered into force (this means before 1<sup>st</sup> of August 1999):

- Name, address and signature of holder
- Location and description of equipment

- Quantity of PCBs in the equipment
- Date on which cleaning or replacement will take place
- Date of notification.

The holder of PCB must also report to the Inspector of the Ministry of VROM the activities concerning the decontamination and/or disposal of inventoried equipment and the PCBs contained.

Also a large investigation took place on the transformers owned by the electricity companies. In 2002 all transformers were registered (116.000). By dividing those in a number of groups (groups constructed before 1986 and each (large) manufacture, group constructed after 1985) a number of samples were taken based on statistical methods. During this project most of these transformers were cleaned up or proven to be PCB free. At the end of the project only a few transformers did not comply with the Dutch legislation.

The possible PCB containing transformers and capacitors owned by other companies than the electricity companies were not closely examined yet. The total number is estimated between 20.000 and 40.000. Therefore the VROM-inspectorate has started in 2004 another special project. By sending a questionnaire to companies which receive high voltage and validation afterwards the Inspectorate expects to gain insight in the remaining quantity. The first results show that 6 percent of the transformers involved do not have a proof they are PCB-free. The final results will be available in the second half of 2005.

## 2. Plan and other executive measures

*The National Waste Management Plan (Landelijk Afvalbeheers Plan)* of 3<sup>rd</sup> of March 2003 includes a paragraph on waste management for PCB waste. This paragraph describes how the collection, pre-treatment and treatment should take place of PCB containing equipment as well as PCB oil and PCB containing waste substance.

*Regulation Disposing PCB equipment* declares that the holder of a PCB containing equipment (more than 5 dm<sup>3</sup>) should have report (before 1<sup>st</sup> of August 1999) a number of characteristics to the Inspector of the Ministry of Environment. The holder of PCB must also report the activities concerning the decontamination and/or disposal of inventoried equipment which PCB contained.

The *Environmental Management Act (Wet milieubeheer)* declares that it is forbidden to dispose company waste or hazardous waste substance by delivering to another, unless the person to whom waste is disposed to is authorized to remove this substance. A person/company who wants to dispose PCB containing oil or PCB containing equipment must deliver this to a registered collector (on national level) or to an licensed disposing company (on provincial level).

According to the *Degree notification non hazardous waste and hazardous waste (Besluit melden van bedrijfsafvalstoffen en gevaarlijke afvalstoffen)* companies who dispose their waste must give a description of the nature and composition of the waste to the receiving company. If the waste is transported a tracking document must be given to the carrier of the waste. The receiving company must notify the receipt of the waste (origin, kind of waste, quantity and treatment method).

## 3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)

The *PCB PCT and chloro-ethene degree Chemical Substances Act* contained an exception for small objects: objects which contain capacitors with a total weight less than 1 kg and produced before 1<sup>st</sup> of August 1985 may still be used. At the end of lifetime they must be disposed according to the waste legislation. The *Regulation Disposing PCB equipment* of 1998 does not have this exception, so all equipment must be disposed.

## 4. Removal Companies / disposing facilities

*Regulation Disposing PCB* declares:

Companies who have as industrial activity the removal of PCB out of PCB containing equipment must keep a register for the supervisor. In this register must be record:

- the quantity, origin and nature of PCB
- the origin and type of equipment as well as the content of PCBs.

According to the *Degree notification non hazardous waste and hazardous waste* the receiving company must also notify the receipt of the waste (origin, kind of waste, quantity and treatment method).

The disposing of transformers in the Netherlands is done by one specialised company: Orion located in Drachten. This firm cleans the equipment after which the PCB containing oil will be incinerated at the AKZO factory in Rotterdam. The oil and other PCB contaminated parts may also be incinerated in a special hazardous waste incineration plant. As of the 1<sup>st</sup> of January 2005 the AVR has closed their last high temperature incinerator for hazardous waste.

## **5. Responsible authorities**

Possession of PCBs: national level, the ministry of Housing, Spatial Planning and Environment.

Disposal of PCBs: regional level (the competent authority of the company involved).

Import and export of PCBs: national level, the ministry of Housing, Spatial Planning and Environment.

## **C. Results**

### **1. Quantity PCB removed and left**

*Regulation of replacement and disposing of PCB containing coolant and PCB containing transformers and condensers, 29<sup>th</sup> of March 1984*

During the period 1984-1988 381 companies made use of the opportunity of obtaining budget for disposal and replacement of a PCB containing equipment. In 1980 there was knowledge of 480 companies who owned 22.911 capacitors and 1.222 transformers with PCBs (in total 790 ton PCBs). In the end 84 percent of the capacitors and 85 percent of the transformers were removed (570 ton PCBs disposed). A comment on this result at that time was that the real dimension of PCB owners was not known. Due to this incomplete list and the fact that the limit of PCB has become stricter (from 50 ppm to 0,5 ppm per congener) the continuing disposal of Dutch PCB waste has been explained.

#### *Investigation Electricity companies*

The report on Enforcement on clean up of PCB containing transformers in the grid and the distribution of electricity (February 2005) reported that out of the 76.000 transformers before 1986 11 percent (8.360) appeared to be contaminated. Out of the transformers after 1985 1 percent appeared to be contaminated. In all cases it concerned a low level of contamination (between 0,5 and 5 ppm). Almost all those transformers have been replaced so at the moment only a few transformers do not comply with the Dutch legislation. In 2005 the investigation on other (not electricity companies) possible holders of transformers will be finished.

According to the waste notifications during the period 1993-2003 in total 12.993 ton of PCB containing waste has been removed by about 2000 companies. Data reported in earlier reports pointed out that in the period 1988-1992 in about 2100 ton PCB containing waste has been removed.

The total number of possible PCB contaminated equipment which still is in use is small. The Inspectorate of Environment will publish this year a final report on the remaining quantity.

### **2. Quantities PCB disposed by treatment facilities**

Before 1<sup>st</sup> of January 2005 three companies in the Netherlands had a licence to treat PCB:

AVR Chemie: hazardous waste incineration (the last incinerator closed at 1<sup>st</sup> of January 2005).

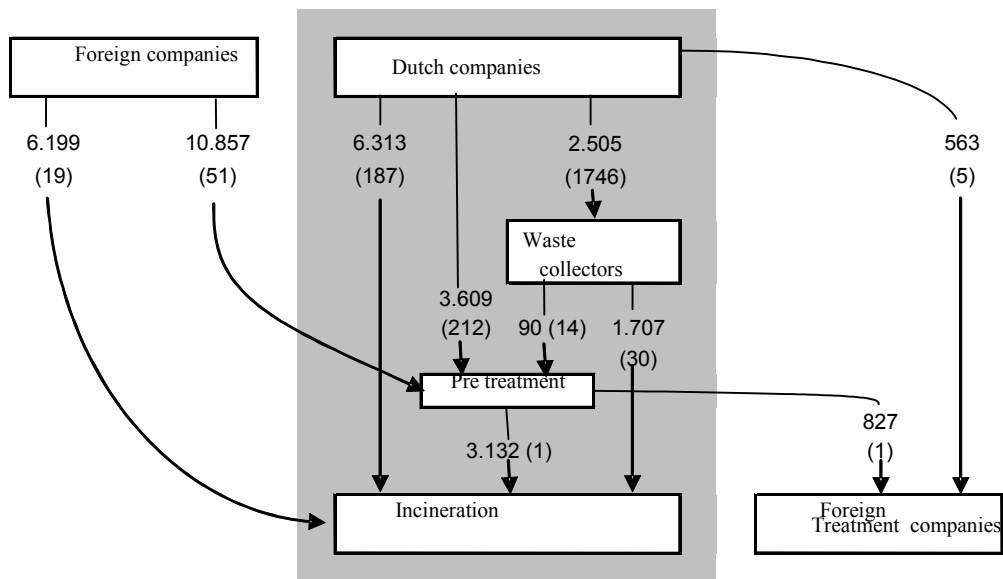
Orion: pre treatment of transformers (rinse and dismantle transformers).

Akzo Chemical: incineration of high chlorinated liquids.

The table below shows the quantities of PCB waste which Dutch treatment facilities have treated in the period 1993-2003. During this period the total amount of pre treated PCB waste was 14.500 ton (of which 3.700 Dutch waste). The total amount that has been incinerated was 17.400 ton (of which 11.200 Dutch waste).

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<i>Interior waste</i>											
ORION	139	198	140	194	145	110	183	923	587	769	326
AVR Ch. (**)	402	1.845	324	635	416	369	265	903	1.092	642	956
AKZO Nobel								51	84	71	
<b>Subtotal</b>	<b>541</b>	<b>2.043</b>	<b>464</b>	<b>828</b>	<b>561</b>	<b>479</b>	<b>448</b>	<b>1.877</b>	<b>1.764</b>	<b>1.482</b>	<b>1.283</b>
<i>Waste from Orion</i>											
AVR Chemie	42	46	66	53	47				24	204	170
AKZO Nobel	22	150	98	100	327	208	297	420	495	208	156
<b>Subtotal</b>	<b>64</b>	<b>196</b>	<b>164</b>	<b>153</b>	<b>374</b>	<b>208</b>	<b>297</b>	<b>420</b>	<b>519</b>	<b>412</b>	<b>326</b>
<i>Foreign waste</i>											
ORION	272	699	906	941	1.788	1.108	1.378	1.266	855	740	904
AVR Chemie						163	886	1.058	433	233	19
AKZO Nobel			130		83	480	434	676	574	726	305
<b>Subtotal</b>	<b>272</b>	<b>699</b>	<b>1.037</b>	<b>941</b>	<b>1.871</b>	<b>1.751</b>	<b>2.697</b>	<b>2.999</b>	<b>1.862</b>	<b>1.699</b>	<b>1.228</b>
<b>Total</b>	<b>877</b>	<b>2.938</b>	<b>1.665</b>	<b>1.923</b>	<b>2.806</b>	<b>2.438</b>	<b>3.441</b>	<b>5.296</b>	<b>4.144</b>	<b>3.593</b>	<b>2.837</b>

The figure below gives an impression in which way the waste chain in the period 1993-2003 (quantity in ton, the number of companies in brackets). This figure illustrates the role of Dutch companies in treatment of PCBs. Almost 16.000 ton of foreign PCB containing waste has been treated in the Netherlands. This amount is more than the amount of Dutch companies (12.500 ton).



## 18. Fiche Norway

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

The first national regulation from 1979 was laid down in *Norwegian Product Control Act*.

The use of PCB in big capacitors and transformers was prohibited by legislation from 1<sup>st</sup> of January 1995<sup>57</sup>.

Further regulations exist which are relating to restrictions on the use of certain dangerous chemicals, laid down by the Regulations of the Ministry of the Environment of 20<sup>th</sup> of December 2002. Under 'Products containing PCBs or replacements for PCBs' it is prohibited to import, export, place on the market, use or reuse solid processed article containing PCBs or the replacements for PCBs.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

In Norway national legislation since 1979 with amendments from 1990 and implementation of the Directive.

Disposal of capacitors with more than 1 kg PCB or PCB items with PCB and transformers were taken out of use and removed and disposed within 31<sup>st</sup> of December 1994, due to the national regulation. The regulation indicates removal of smaller capacitors within 2005, subsidiary within 2007. Further electrical equipment has endpoint 2010.

#### 3. Limits correspondence with Directive

The national regulation laid down in 1979 set a zero (0%) limit which is still in force, but due to transformers a limit on 0,005 % is acceptable. Calculating 1 kg PCB transformers and capacitors (5 dm<sup>3</sup>).

#### 4. Subsidiary regulation

Due to the cold climate in Norway we use double window frames with need for a glue between the glass/frame and PVB-glue was used during 1970. When removal of these windows (reconstruction/new building) a payment fee has been dealt (agreement) with the national "glass" companies (importers & manufacturers) and SFT to cover/subsidize the cost of the collection and disposal of the PCB-items.

### B. Executive

#### 1. Inventory on PCB containing equipment

During 1992 -1993 SFT made an inquiry to all relevant companies in Norway to detect PCB transformers & condensers, during 1994 the disposal was done for these items.

Inventory list for removal of the larger PCB items was based on information from the import, (i.e. custom), co-operation with other authorities dealing with electrical equipment/fire/safety prevention, spot checks (inspections) and desk control (letters) to relevant companies with legal binding inquiries.

For small capacitors an inventory was made in 1997 based on information from capacitor and lamp manufactures, but the figures show some uncertainty.

#### 2. Plan and other executive measures

##### Summary of plan

PCB is still in use (i.e smaller condensers/electric equipment) and SFT use(d) in 2004/2005 resources on campaigns together with the county authorities to "force" removal/phasing out of the smaller

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<sup>57</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002, page 26

condensers, with deliver duty to the authorised waste collectors which organise further transport to destruction. SFT has also used resources to ensure that old phase out windows with PCB glue (from 1970's) are sorted out and collected/transported separate to specific licensed companies. Norway has established a fee-system to cover the expenses with handling of old window frames.

About the larger PCB items, the disposal and removal of these items took place 10 years ago. The procedure was as following:

The companies which disposed their PCB's on their own the national regulation require specific conditions according to the disposal. The companies shall give SFT a written note with description of disposal conditions, amount, package, labelling, expected disposal time etc. SFT approved and followed up with (spot) inspections according to national regulation.

### **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

For small capacitors: estimations have been done both on the original amount and on the remaining amount of PCB. In addition sites where the remaining PCB containing capacitors are to be found are identified. The investigation show that 90% of the PCB containing small capacitors are used in florescent light fixtures in road and other outdoor illumination and in large building in industry, official buildings like schools and hospitals. About 10 % of the PCB in small capacitors is to be found in other electric equipment like old radios. Except for the year of production we did not find any possibly way to make a list describing PCB containing capacitors by manufacture firm.

From an original amount of about 300 metric tonnes of PCB in small capacitors, 123 tonnes were still in use in 2003 in remaining capacitors. Small capacitors were to a very small degree delivered to the hazardous waste system until 2000. With a prohibition of 1<sup>st</sup> of January 2005 to use small capacitors in florescent lamps it seems that much of the small capacitors are collected today. The WEE – regulation that enforces collecting of outranged electrical products is also contributing to increase in correct handling. The delivery is normally free of charge.

In 2004-2005 Norway is adjusting data, making inventory lists and carrying out actions in regional of national authorities (SFT).

### **4. Removal Companies/disposing facilities**

*About the big amounts:*

Some of the companies with licences for disposal of hazardous waste were specific pre qualified of SFT to collect, to do temporary disposal and to export.

Some of the big companies were accepted to manage delivering directly to treatment facilities/export. The companies are, regardless, always responsible to pay all expenses, including transport, disposal and destruction.

For big capacitors: The devices have been destructed mostly in British and Finnish hazardous waste incineration plants, and none in underground deposits. The transformer oil has been destructed in a Norwegian cement kiln<sup>58</sup>.

*About the small amounts:*

The list is from 1995 and not valid to day. The removal & disposal of the smaller PCB- items shall be delivered to national deposits with declaration /labelling where the PCB waste are placed in specific containers. The companies may also deliver directly to the pre-qualified/licensed disposal companies which sort out and send further to either national incineration (oil) or exported to treatment outside Norway (approved of SFT).

### **5. Responsible authorities**

Norwegian Pollution Control Authority (SFT).

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<sup>58</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002, page 27



## C. Results

### 1. Quantity PCB removed and left?

According to the OSPAR Convention Report the quantities of PCB used in Norway are rather small (2001):

The amount of PCB in use in Norway in 1980 and 2004

	Originally present 1980 (in ton)	Disposed (in ton)	Still in use 2004 (in ton)
Large transformers and big capacitors	400	400	0
Small capacitors	340	214	88
Seam sealants	100		33,5
Grouting and concrete additives	120		56
Insulated window frames	150		51
Paint	75		9,7

- 614 ton PCB removed and satisfactory destructed from larger transformers /capacitors
- 238 PCB ton still in use, as small capacitors/ electronical equipment and as component in glue used in window glass frames, paints, building structure etc.
- 397 ton PCB illegal disposed (leakage to harbours/fjords, sediments etc.)

### 2. Quantities PCB disposed by treatment facilities

During the period 1990-1995 about 400 ton of PCB oil has been destructed in Norwegian cement kiln.

## 19. Fiche Poland

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

Although the production and use of PCB is not legally banned, according to the *Environmental Protection Law*, PCBs are classified as substances particularly dangerous to the environment and should be step-wise eliminated. All uses should be controlled and registered. PCBs cannot be marketed and reused, except for cases specified in law acts. PCBs are not produced nor imported; in some cases they are still in use in long-life equipment, till its "natural death".

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

The provisions of the Directive have been transposed into Polish law by:

- The Act of Parliament of 27<sup>th</sup> of April 2001 on Waste,
- The Act of Parliament of 27<sup>th</sup> of April 2001 on Environmental Protection,
- The Act of Parliament of 27<sup>th</sup> of July 2001 on Environmental Protection and Waste Law implementation with an amendment of some laws,
- The Regulation of the Minister of Economy of 24<sup>th</sup> of June 2002 on requirements concerning the use and relocation of substances raising a serious threat to the environment and use as well as the cleaning of installations or equipment, in which substances raising a serious threat to the environment have been or are used<sup>59</sup>.

In 2001 it was expected that the related inventories (waste and equipment with PCB volumes of more than 5 dm<sup>3</sup>, and with concentration of up-to 0.05% by weight of PCBs) will be carried out until 31<sup>st</sup> of December 2002. The complete elimination of equipment containing PCB is planned until 31<sup>st</sup> of December 2010<sup>60</sup>.

#### 3. Limits correspondence with Directive

Yes, 50 ppm.

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

Operating equipment containing PCBs has not been inventoried up to now. An obligation for doing an inventory by 31<sup>st</sup> of December 2002 came in force by virtue of the *Regulations of the Minister of Economy of 24<sup>th</sup> of June 2002*.

It is estimated that approximately 250,000 pieces of capacitors and approximately 1,000 pieces of transformers will be subject to disposal and decontamination processes.

Assuming that the average weight of capacitors is 0.03 ton and average weight of operating fluid in small power transformer amounts to average 1.0 ton, quantity of waste provided to dispose will be accordingly:

- capacitors: 7,500 ton
- fluid removed from transformers: 1,000 ton
- waste oils and fluids from transformer decontamination: 2,000 ton (assuming a repeated rinsing).

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<sup>59</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 8

<sup>60</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001, page 8

Furthermore, it is estimated that approximated 1,000 tons of fluids removed from equipment and 2,000 ton of fluids from their decontamination processes will arise as the result of decontamination of other power engineering equipment (including oil cables and switches).

Consequently, the total quantity of PCB-containing waste requiring disposal until the year 2010 will amount to approximately 13,500 tons<sup>61</sup>.

## **2. Plan and other executive measures**

In the policy paper National Waste Management Plan the following organizational assignments are mentioned:

- establishing information bases including data concerning quantity and locations of PCBs and other information stipulated in § 8, paragraph 1 of the *Regulations of the Minister of Economy of 24<sup>th</sup> of June 2002*;
- developing disposal and decontamination plans of registered equipment and projects of the collection and disposal of non-registered equipment with contents of PCBs;
- organizing of an advertising and information campaign on proper proceeding with waste containing PCBs;
- introducing of the measures involved in the disposal of PCBs-contaminated fluids and the disposal as well as decontamination of equipment with contents of PCBs into priority lists of measures of the National Fund for Environmental Protection and Water Management and Voivodship Funds for Environmental Protection and Water Management.

## **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

### **4. Removal Companies/disposing facilities**

The following authorised business entities are dealing with the collection, decontamination and disposal of PCB-containing equipment and waste:

- Zakłady Azotowe ANWIL SA (Nitric Plants) at Włocławek, which have an installation for thermal disposal of fluids with contents of PCBs, (4,000 tons/year),
- Przedsiębiorstwo Usług Specjalistycznych i Projektowych CHEMEKO Sp. z o.o. (the Specialist and Design Service Enterprise) at Włocławek conducting the decontamination of transformers and providing the supplies of PCB-contaminated waste provided for the disposal in the installation of Zakłady Azotowe ANWIL at Włocławek,
- Zakłady Chemiczne (Chemical Plants) ROKITA SA at Brzeg Dolny, which have an installation provided for the thermal disposal of PCBs-contaminated fluids (500 tons/ year),
- POFRABAT sp. z o.o. at Warsaw performing a collection of PCB- contaminated capacitors and their transfer abroad for a total disposal; approximately 170 tons of PCB-contaminated capacitors were exported to France in the years 1999 - 2001.

### **5. Responsible authorities**

Popularisation of PCB-related problems is performed within the Information and Educational Programme on Liquidation of Equipment and Waste with contents of PCBs/PCTs. Subsidized by the National Fund for Environmental Protection and Water Management (NFOŚiGW).

## **C. Results**

### **1. Quantity PCB removed and left**

Significant delays in implementing of legal provisions concerning PCBs in Poland, in comparison with other European countries, caused an improper management of this waste, and, as a result, PCBs have been released into the environment. In Poland the biggest quantity of PCBs leaked into the environment probably in the 1990s. It is estimated that over 500 tons of equipment containing PCBs could come to scrap yards or landfills a year<sup>62</sup>.

The total quantity of PCB-containing waste requiring disposal until the year 2010 will amount to approximately 13,500 tons

### **2. Quantities PCB disposed by treatment facilities**

<sup>61</sup> The Polish Monitor No. 11, Warsaw, 28<sup>th</sup> of February 2003 National Waste Management Plan 4

<sup>62</sup> The Polish Monitor No. 11, Warsaw, 28<sup>th</sup> of February 2003 National Waste Management Plan 4

## 20. Fiche Portugal

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

*Decreto-Lei n°277/99 de 23 de Julho*

This Decree limits the sale and utilization of polychlorinated biphenyls (PCBs) and terphenyls (PCTs), as well as those of preparations (including used oils) with PCB or PCT contents >0.005% (by weight). In principle, these substances are entirely prohibited, except in equipment already installed until they can be converted (or replaced) in such a way that the use of PCBs or PCTs is no longer necessary. Special provision is made for labelling, inventorying and elimination of waste in cases where these substances continue to be used<sup>63</sup>.

Article 7 of the *Decreto-Lei No. 277/99* prohibits the reuse of PCB except in situation of complete oil level in equipments in use, for which the use of other substances is not technically viable.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*Decreto-Lei No.277/99, of the 23<sup>rd</sup> of June 1999* implements the Council Directive 96/59/CE, 16 September on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT)" and enforces the following measures: through the obligation of sending, attached to the inventory, information concerning the planning for decontamination and/or disposal of equipment containing or contaminated with PCB. Holders shall take the necessary measures to ensure that used PCB are disposed of and PCB and equipment containing PCB are decontaminated or disposed of as soon as possible".

#### 3. Limits correspondence with Directive

Yes.

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

Instituto dos Resíduos owns a database since 1994 (that was adapted in 1999 to comply with the obligations imposed by the transposition of the Directive), which is updated every time a PCB holder performs any alteration to the situation of the equipments (in use, out of use, decontaminate, disposed).

The inventory on PCB's containing equipments takes place continuously along the year. All the PCB containing equipment holders, which have equipments with more than 5 dm<sup>3</sup> of PCB, must report to Instituto dos Resíduos (INR) and Comissão de Coordenação e Desenvolvimento Regional (CCDR) the quantity of PCB in their equipments according to the *Decreto-Lei No. 277/99*. If there is any change in the equipment's state (for instance, if an equipment reaches its end of life), their owner must also inform INR and CCDR about the change. The latest validated results concerning the Portuguese inventory on PCB's containing equipments are reported to 2002. The situation in 2003 and 2004 is currently under validation process.

Recently Instituto dos Resíduos in association with the Portuguese environmental inspectorate accomplished a campaign in order to achieve a wider universe of inventories concerning equipments containing or contaminated with PCB apart from planning on their decontamination and/or disposal. The data is being validated at the present moment.

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<sup>63</sup> <http://www.ilo.org/public/english/protection/safework/cis/legosh/prt/>

## 2. Plan and other executive measures

Portugal has a National Plan of Decontamination and/or Elimination of the PCBs containing equipments included in the inventory and of the PCBs contained in them (number 1 of Article 4th of D.L. n°277/99), as well as a Collect Project (and future elimination) of equipments that are not submitted to the inventory but which contain PCB less than 5 dm<sup>3</sup> ("small equipments").

## 3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)

Additionally, in the year 2004, the Instituto dos Resíduos (INR) and Inspeção Geral do Ambiente (IGA) have undertaken a comprehensive survey, addressed mainly to small enterprises with potential equipments with PCBs, in order to characterize the current situation related to those enterprises. The questionnaire was sent to 1.220 companies and analysis and the results are currently being evaluated. So there is a Collect Project (and future elimination) of equipments that are not submitted to the inventory but which contain PCB less than 5 dm<sup>3</sup> ("small equipments").

## 4. Removal Companies/disposing facilities

Companies that perform the decontamination of equipments containing or contaminated with PCB have to be licensed by Instituto dos Resíduos for that kind of operation.

There is a list of companies which are licensed to perform decontamination of equipments containing or contaminated with PCB. The national law on this subject does not foresee a licence from environmental authorities to perform the removal of PCB. Nevertheless, the PCB removed must be delivered to the companies above-referred in order to ensure its proper environmental management.

In Portugal there are 4 companies that are licensed for temporary storage of hazardous waste which have technical condition to perform storage of PCB waste. There are no facilities for final disposal for PCB in Portugal.

## 5. Responsible authorities

Instituto dos Resíduos and other authorities in environmental and economical issues.

# C. Results

## 1. Quantity PCB removed and left

According to available data, which is based on the company's declarations, the situation in Portugal by the end of 2002 was the following:

Results of Inventory	PCB (ton)
Equipments already disposed off	275
Equipments working	1.471
End of life Equipments off duty	401

## 2. Quantities PCB disposed by treatment facilities

There are no facilities for final disposal for PCB in Portugal.

## 21. Fiche Slovakia

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

Reuse of PCB is restricted according to §18 art. 3j of the *Waste Act*. Management takes place by way of granting consents and state supervision in waste management (Inspections, Regional authorities and District authorities).

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

The Directive has been implemented to the Slovak national law by amendment of *the Waste Act No.223/2001 Coll.* which entered into force on 1<sup>st</sup> of March 2004 and its executive orders.

#### 3. Limits correspondence with Directive

Yes.

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

Within the implementation of the Directive the Ministry of the Environment of the Slovak Republic (MoE) has performed an inventory of equipment containing PCB through projects in 2001 and 2002.

This inventory was executing in two parts and had been done before provisions of the Directive were implemented to the national law.

1). First initial inventory was done through project of MoE of SR in 2001 which was based on voluntary submission of data from holders. The project was finished in 2002 and results were submitted to the EC, DG Environment. The Instruction paper (information form) on methodology has been drafted and published on the Internet side of the MoE, the paper has also been distributed to selected 490 corporations (institutions and enterprises) where there is the assumption that equipment containing PCB may exist. The submitted fulfilled forms resulted in a database of equipment containing PCBs. Closing date was November 2001 and by that date 322 corporations and entities had been actively involved (66% response rate). Initial database contains 23.913 pieces of equipment containing PCBs. Within this project 30,000 pieces of labels for labelling of equipment containing PCBs and 1000 pieces of label to the doors of premise were sent for labelling of equipments reported in the database.

2.) Second part was executed in the frame of POPs Enabling Activities Project for Stockholm Convention and was finished in 2003. Results were used for identification of obligations in the Draft of National Implementation Plan. The Slovak Environmental Agency (SEA) took over previous inventory from MoE in 2003. MoE authorised SEA to keep and update of inventory database based on the holder's obligations to submit current data of equipment containing PCBs and their change. Holders' obligations are lied down in the provisions of amended *Waste Act*.

Based on the previous inventory and its updating the new regulated inventory has been performed according to the *Waste Act*. It shall be mentioned that new inventory is in initial phase. Data are still submitted from holders and up-to-date information is updated in the databases.

#### 2. Plan and other executive measures

National Program of Waste Management for years 2005 -2010 is going to be set up until the end of this year 2005. Part of this program will be program for PCBs. Based on this program also holders of equipment containing PCB are obliged to prepare their own program for PCBs.

The currently new amended *Waste Act* which was taken into force as of in 1<sup>st</sup> of March 2004 implemented provisions of the Directive in order to ensure up to date inventory and new obligations of submission of data by holders of equipment containing PCBs and their any change, besides obligations relating to disposal and decontamination of equipment containing PCBs.

Holders which possess equipment containing PCBs from 1<sup>st</sup> of April 2004 are obliged to submit detailed data about equipment containing PCBs to SEA with deadline 28<sup>th</sup> of February 2005 and subsequently any change (decontamination, disposal, new owner identification) within 10 days. SEA had written instructions and drafted Notification form for submission data for holders. General instructions, information about the inventory, obligations and relevant legislations may be found on the website [www.sazp.sk/COH](http://www.sazp.sk/COH).

### **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

It will be ensured with full compliance of EU relevant legislation.

### **4. Removal Companies/disposing facilities**

According to the § 7 of the *Waste Act* the state administration bodies in waste management grant consent to:

- Decontamination;
- disposal of PCB waste or PCB contaminated equipments;
- handle hazardous waste including its transport.

Necessary information and content of the request are described in the *Executive Order No. 283/2001 Call. implementing certain provisions of the Waste Act*.

### **5. Responsible authorities**

Slovak environmental inspection is responsible to enforce provisions which are stipulated in the *Waste Act*.

## **C. Results**

### **1. Quantity PCB removed and left**

According to the inventory in 2002 322 corporations indicated that they owned 23.913 pieces of equipment containing PCBs.

PCB manufacture in Slovakia was stopped in 1984 after about 21 500 ton had been produced. Out of 4000 ton PCBs used on the territory of Slovakia, a part has been destroyed abroad by incineration, a part is landfilled, a part is in use (power capacitors) and the rest, about which there is no data, could release into the environment (more than 2 000 ton)<sup>64</sup>

### **2. Quantities PCB disposed by treatment facilities**

No information available.

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<sup>64</sup> [http://www.chem.unep.ch/pops/POPs\\_Inc/proceedings/slovenia/KWG.html](http://www.chem.unep.ch/pops/POPs_Inc/proceedings/slovenia/KWG.html)

## 22. Fiche Slovenia

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

The basic Act was the *Environmental Protection Act* adopted in 1993<sup>65</sup>, which was renewed by the Environmental Protection Act ZVO-1 adopted in May 2004.

Other measures which forbid production and trading of PCB:

Rules on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (OG RS, No. 15/00, 54/02, 18/03).

Production and application of PCB prohibited since the mid-1980s.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*Ordinances on PCB removal* (2000)<sup>66</sup>. Rules on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (OG RS, No. 15/00, 54/02, 18/03)

#### 3. Limits correspondence with Directive

Yes, 50 ppm.

#### 4. Subsidiary regulation

No.

### B. Executive

#### 1. Inventory on PCB containing equipment

The inventory took place in 2001.

A realistic evaluation of the presence of PCBs in Slovenia, made by the Ministry, was around 500 tonnes of PCB waste (from transformers and big condensers) and 100 tonnes of contaminated oils with PCB concentrations over 50 ppm (from transformers)<sup>67</sup>.

The new inventory on the basis of Operational Programme started in 2004. There are 159 companies in the inventory for a total amount of 118.503 kg of PCB. All holders containing > 5dm<sup>3</sup> of PCB equipment have the obligation to send the filled report form to competent authority. The inquiry papers for the announcement of PCB equipment was sent to all possible holders. The obligation of the holder of PCB is to inform the authorities.

The new data of the presence of PCBs in Slovenia made on the basis of new reports within the framework of the plan of decontamination and disposal of PCB is about 328 tonnes of PCB equipment (gross weight) and approximately estimated value of about 50 tonnes of transformers which might contain PCB.

#### 2. Plan and other executive measures

There is an operational Programme plan concerning the management for disposing PCBs and PCT for the period 2003-2006 adopted by the Government.

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<sup>65</sup> Sanitation country profile Slovenia, 2004

<sup>66</sup> Sanitation country profile Slovenia, 2004

<sup>67</sup> Study of practical implementation and enforcement of key EU legal acts in PHARE countries, EUROPEAID/1131418/D/SV/R20-task 2.B., 24 November 2003, Mr. Dumortier, page 22



*The plan of disposal of inventoried PCB equipment in Slovenia:*

	2004 [kg]	2005[kg]	2006[kg]	2007[kg]	2008[kg]	2009[kg]	2010[kg]
Condensers	21.477	24.247	26.464	20.807	15.925	20.731	31.567
Transformers	20.114	28.356	19.340	22.913	17.825	52.958	113.406
Other equipment	-	-	2.460	-	645	-	-
Total	41.591	52.603	48.264	43.720	34.395	73.689	144.973

Only the holders of PCB equipment (> 5 dm<sup>3</sup> and > 0.005%) have to notify the authorities. This poses a problem for the identification of PCB equipment of abandoned sites. The deadline for the notifications of PCB in Slovenia was January 2001<sup>68</sup>. There is a notification obligation in case of changes concerning the PCB equipment: oil refilling, decontamination, removal, and change in ownership of the PCB equipment. This notification obligation of PCB equipment is a specific procedure, which is not integrated in the environmental permitting procedure<sup>69</sup>.

Labelling is only required for equipment with PCB volumes of more than 5 dm<sup>3</sup>. In addition, Slovenia also requires the labelling of decontaminated equipment. Access doors must have a label identifying the presence of PCBs.<sup>70</sup> High voltage transformers are subject to compulsory maintenance inspections by a technician. The maintenance companies are not obliged to carry out the verification, but would carry it out anyway. Slovenia requires maintenance companies to notify the authorities in case they identify transformers not tested on PCB presence or not covered by an appropriate notification.

The results of PCB test for types of oil used have to be mentioned in the maintenance register of PCB equipment. In Slovenia, all equipment without certificate or negative test results is treated as PCB equipment<sup>71</sup>.

### **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

The regulation and programme regarding collection and removal of small equipment containing PCB is in preparation. The study has already been made (The concept of dealing with small PCB containing equipment).

### **4. Removal Companies/disposing facilities**

In Slovenia, a licensed and closed landfill was built for the waste remaining when the Iskra Kondenzatorji factory at Semic ceased production of electrical equipment containing PCBs in 1985. The waste deposited consisted mainly in polluted soil and a few condensers and transformers<sup>72</sup>.

Entities authorized to decontaminate of PCB equipment need to have a permit. Slovenia has no compulsory reference methods on how the decontamination has to be carried out. Entities authorized to dispose of PCB equipment need to have a permit and are required to keep a register on quantity, origin, nature and PCB contain of used PCB delivered to them<sup>73</sup>.

Slovenia has no disposal facility. All PCB is exported to France and Germany. The removal of PCB is regulating by Rules on the disposal of polychlorinated biphenyls and polychlorinated terphenyl and Rules on the Management waste (art. 27), but no Slovenian company has applied for the permission for removal of PCB yet. Up till now no license for PCB removal has been given.

<sup>68</sup> Study of practical implementation and enforcement of key EU legal acts in PHARE countries, EUROPEAID/1131418/D/SV/R20-task 2.B., 24 November 2003, Mr. Dumortier, page 21

<sup>69</sup> Study of practical implementation and enforcement of key EU legal acts in PHARE countries, EUROPEAID/1131418/D/SV/R20-task 2.B., 24 November 2003, Mr. Dumortier, page 21

<sup>70</sup> Study of practical implementation and enforcement of key EU legal acts in PHARE countries, EUROPEAID/1131418/D/SV/R20-task 2.B., 24 November 2003, Mr. Dumortier, page 21

<sup>71</sup> Study of practical implementation and enforcement of key EU legal acts in PHARE countries, EUROPEAID/1131418/D/SV/R20-task 2.B., 24 November 2003, Mr. Dumortier, page 22

<sup>72</sup> UNEP, Inventory of World-wide PCB Destruction Capacity, First Issue December 1998, paragraph 8.3.

<sup>73</sup> Study of practical implementation and enforcement of key EU legal acts in PHARE countries, EUROPEAID/1131418/D/SV/R20-task 2.B., 24 November 2003, Mr. Dumortier, page 22

## **5. Responsible authorities**

The Ministry of Environment, Spatial Planning and Energy is solely responsible for the implementation and enforcement of the provisions of waste legislation<sup>74</sup>. Inspections on PCB equipment have only partially been integrated in routine environmental inspections. Samples are sometimes taken during inspections<sup>75</sup>.

## **C. Results**

### **1. Quantity PCB removed and left**

New information: In the period 1991 to 2003 about 848 tonnes of PCB waste has been disposed (export).

The remaining quantity is: Adjourned data of remaining PCB waste are 328 tonnes gross weight inventoried:

- 139 ton capacitors
- 181 ton transformers
- 8 ton contaminated oils with PCB
- less than 50 t transformers which might contain PCB

The expected amount of small capacitors is less than 650 tonnes.

### **2. Quantities PCB disposed by treatment facilities**

Up till now Slovenia has no PCB treatment facility.

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<sup>74</sup> Sanitation country profile Slovenia, 2004

<sup>75</sup> Study of practical implementation and enforcement of key EU legal acts in PHARE countries, EUROPEAID/1131418/D/SV/R20-task 2.B., 24 November 2003, Mr. Dumortier, page 24

## 23. Fiche Spain

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB

*Spanish Royal Decree 1406/1989 of 10<sup>th</sup> November 1989* is limiting the marketing and use of substances and among them PCB<sup>76</sup>. New application of PCB has been forbidden since 1986<sup>77</sup>. Law 10/1998 for Waste (Ley 10/1998, de 21 de abril, de Residuos) implements the Council Directives 75/442/EEC and 91/156 EEC.

According to article 9 of Royal-Decree 1378/1999 reuse of PCBs is prohibited.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCBs before 2010

Spain has implemented the Directive by the *Royal-Decree 1378/1999* of measures on the management and elimination of PCBs<sup>78</sup>. This Decree does not allow reusing equipment containing PCB with a concentration > 50 ppm neither the PCB contained in those equipments.

According to the *Decreto 1378/1999*, holders have the following obligations<sup>79</sup>:

- Equipment must be eliminated or decontaminated before 1<sup>st</sup> January 2011. The disposal or decontamination of the PCB content until reducing its concentration below 50 ppm is required by law; with the exception of transformers that have been decontaminated to reduce its concentration below 500 ppm, which can be used until the end of its useful life.
- Information about equipment must be given to CCAA  
Holders with equipment more than 1 dm<sup>3</sup> must declare that to the Comundade Autonomas before 1 September 2000. Holders of equipment containing PCB have to declare all data concerning their equipment and amounts of PCB to the corresponding CCAA that makes an inventory of all PCB and equipment existing in their territory/ region. Holders are obliged to inform to their corresponding CA on equipment and amounts of PCB that have been disposed, with these new data the CA up-dates its inventory each year and sent it to the MMA.
- Labelling PCB containing equipments

Also Spain has implemented the National Plan for PCB approved by Resolution (Resolucion) of 9<sup>th</sup> April 2001. It has established a 2001-2010 Plan for the management and total elimination of PCBs and PCTs<sup>80</sup>.

Besides RD 1378/1999, the CCAA (Autonomous Communities, Comunidades Autonomas) of Cataluna and Generalitat Valencia have their own legislation.

#### 3. Limits correspondence with Directive?

Yes, 50 ppm

#### 4. Subsidiary regulation?

No

### B. Executive

#### 1. Inventory on PCB containing equipment

The 2001-2010 Plan for the management and total elimination of PCBs and PCTs includes a general PCBs inventory as a first milestone to start the Plan. The inventory took place at the moment the RD 1378/1999 entered into force. The inventory shows that the maximum total quantity of PCBs in Spain is 210.000 ton.

<sup>76</sup> <http://www.unece.org/env/popsxg/docs/2000-2003/pct.pdf>

<sup>77</sup> Guia sindical para la eliminacion de PCB, disruptores endocrinos: un nuevo riesgo toxico, 2003, page 7

<sup>78</sup> Guia sindical para la eliminacion de PCB, disruptores endocrinos: un nuevo riesgo toxico, 2003, page 9

<sup>79</sup> Guia sindical para la eliminacion de PCB, disruptores endocrinos: un nuevo riesgo toxico, 2003, page 15

<sup>80</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002, page 29

The PCBs inventory was in 2002 in its first revision. It will be updated with the new available data which is being collected now in each Spanish autonomous region and it is foreseeable that the total quantity of PCBs will be around 10 % less than the initial. There will be annual revisions to assure that the Plan forecast is being fulfilled or, if necessary, to amend and adapt it.

Currently, the updated data can not be given because the MMA is under process of quantifying some of the equipments which PCB weights have not been declared by their holders. Mainly because they do not know them once the documents and characteristics of the equipment did not exist originally. When PCBs are finally quantified and the equipments containing PCBs inventoried, the quantitative data of this inventory will be made public.

## **2. Plan and other executive measures?**

Since 2001 a PCB Working Plan has been set up for monitoring the Plan and developing a future Royal Decree to establish PCB eliminating quotas per year to speed up its elimination before 2011.

The National Plan for PCB was published in the Spanish Official Journal (Boletín Oficial del Estado, BOE, nº 93 18<sup>th</sup> April 2001).

Plan Nacional de Decontaminación y Eliminación de Policlorobifenilos of the 18<sup>th</sup> April 2001<sup>81</sup> has been set out. This 2001-2010 Plan establishes<sup>82</sup>:

- A) The elimination or decontamination of transformers and other appliances containing more than 5 l and in excess of 500 ppm in weight of PCBs. The first inventory reflects that the total quantity included in this case is 116.000 ton.
- B) It will be able to use the rest of dielectric oils and appliances contaminated by 50 to 500 ppm of PCBs during their life-span and, after that, they will have to be eliminated or decontaminated.
- C) It will be necessary to collect all the appliances containing 1 to 5 l contaminated by PCBs and, after that, will have to eliminate or decontaminate them. When it is possible, the same will be done with respect to the appliances containing less than 1 l.

Other important points reflected in the plan to reach its objective:

- Spain will have to get and provide, at least, an incineration capacity of 4000-5000 ton per year.
- Most of appliances containing PCBs are in the largest electric or other industrial companies. A voluntary agreement is now being negotiated between these large companies and the Central and Autonomous governments to facilitate the aim of the Plan. The negotiations of this voluntary agreement will have to be finished before the end of the current year.

The 'Basque Anonymous Community Management Plan for Hazardous Waste 2001-2006' has tried to give an effort about the requiring to improve management. Such an effort has been incorporated into the plan through the following initiatives:

- Implementation of mandatory system for sampling and analysis of dielectric materials contained in all operational transformers with oil dielectrics, in order to prepare a reliable inventory based on actual date for all PCB waste to be managed prior to 1 January 2011.
- Definition of minimum annual management targets for waste containing PCB, based on inventory findings;
- Possibility of concluding voluntary agreements with the major waste producers, setting annual decontamination and elimination quota to both guarantee compliance with the deadline and bring forward achievement of the objective, by establishing an order of priority for transformers to be decontaminated;
- Possibility of progressively imposing mandatory quotas for effective decontamination and elimination of PCB waste, if compliance with annual targets is not satisfactory.

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<sup>81</sup> Guía sindical para la eliminación de PCB, disruptores endocrinos: un nuevo riesgo tóxico, 2003, page 7

<sup>82</sup> Ospar Assessment of implementation of PARCOM Decision 2002, page 29

### 3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)

The National Plan established also the disposal or decontamination of equipments with a volume of 1 to 5 dm<sup>3</sup> of PCB before 1<sup>st</sup> of January 2011. In the next to come Royal Decree, holders will be obliged to the handing over of these equipments to an authorized management company for disposal of toxic waste before that date.

### 4. Removal Companies/disposing facilities?

Spain has three plants for decontamination and disposal of equipments containing PCB, but the fluids containing PCB are extracted from the equipments and delivered to incineration plants in other EU countries because Spain does not have PCB incinerations plants.

The corresponding CA (Autonomous Community) concedes the authorization as a management company for disposal of toxic waste. This is in accordance with *Law 10/1998 for waste*. Each CCAA government gives the authorization for management companies for disposal of toxic waste and has its own list. The MMA does not allocate those authorizations

### 5. Responsible authorities?

The corresponding governments of the CCAA. The Ministry for the Environment (MMA, Ministerio de Medio Ambiente) is in charge of compliance concerning Directive 96/59 EC tot the European Union.

## C. Results

### 1. Quantity PCB removed and left

The first inventory shows that the maximum total quantity of PCB containing material in Spain is 210.000 ton. The expectation is that the quantity has decreased since this first inventory. The updated data can not be given because the MMA is under process of quantifying some of the equipments which PCB weights have not been declared by their holders, mainly because they do not know them once the documents and characteristics of the equipment did not exist originally. When PCBs are finally quantified and the equipments containing PCBs inventoried, the quantitative data of this inventory will be made public.

Waste exported from the Basque Autonomous Community in 1999 (in ton)<sup>83</sup>:

Liquid PCB	Incineration (Belgium),	39
	Incineration (Holland),	311
	Recycling (Holland)	55
Material contaminated with PCBs	Incineration (Holland),	115
Equipment contaminated with PCBs	Incineration (Holland),	79
	Energy recovery (Belgium),	22
	Recycling (Holland)	59

### 2. Quantities PCB disposed by treatment facilities.

Spain has three pre treatment facilities, but do not have incineration facilities.

<sup>83</sup> Basque Autonomous Community Hazards Waste Inventory 1999, Basque Government, Regional planning and the environment department, page 3

## 24. Fiche Sweden

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

Small PCB capacitors in fluorescent lampfittings etc have had a limited use, and were forbidden in 1973 (open use). For closed systems, use was banned in 1978.

Since 1986 a PCB chemical product and a PCB commodity may not be manufactured, processed, offered for sale, transferred for use or reused (*the PCB Ordinance SFS 1985: 837*)<sup>84</sup>.

All taking into use also of used/recycled PCB is prohibited.

The use of PCB equipment, transformers and power capacitors >2kvar is banned since 1<sup>st</sup> of January 1995. Strong restrictions on the use of PCBs were decided on in 1971. Permits were given for the taking into use of PCB power capacitors up to 1978.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

It is mandatory to report holding of PCB equipment, >5 l of > 50 ppm PCB product, to the Swedish EPA. There are no equipments on the list at present, but single cases may still occur.

Companies have accepted an obligation to substitute PCB in buildings (sealant, small capacitors, fluorescent light fittings) before 2004<sup>85</sup>.

#### 3. Limits correspondence with Directive

In practice the limit 2 ppm has been used since the early 1980s. Concerning the requirements for reporting of "PCB equipment" in accordance with the limit 50 ppm of the Directive is used. The Swedish legislation on PCBs is under revision and for insulating oil the concentration limit is proposed to be kept at 2 ppm, which is the detection limit in the standard for measuring PCB in insulating oil, but for other wastes containing PCBs it will be 50 ppm in accordance with the coming EC standard for PCBs in waste.

#### 4. Subsidiary regulation

No, it is the responsibility of the user, also financially.

### B. Executive

#### 1. Inventory on PCB containing equipment

Yes. An inventory was performed and reported through a questionnaire in the power generation and distribution industry in 1984 and a questionnaire was carried through for high voltage customers in the industry in 1984.

##### The result of the inventory

The result was summarised as about 200 PCB transformers and 100.000 PCB capacitors containing total about 2000 tonnes PCB<sup>86</sup>.

The utilities were public owned and they took responsibility for phasing out the small number of transformers and the large amount of power capacitors within a ten year period. When Sweden

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<sup>84</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001

<sup>85</sup> Helsinki Commission (HELCOM), PCBs Working Document, a compilation and evaluation of the information given by the Contracting Parties, July 2001

<sup>86</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002.

became a member of the European Community in 1995 the ban on use of the transformers and power capacitors containing PCBs was in force.

## **2. Plan and other executive measures**

Not relevant.

## **3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)**

The Swedish legislation on PCBs from 1971 contained a ban on small PCB capacitors as separate component. Fluorescent light fittings and oil burners with a PCB capacitor were also prohibited. These were the main uses of small PCB capacitors at that time, which was confirmed by a study. In Sweden we have legislation in force from 1<sup>st</sup> of July 2001 on waste from electric and electronic products which demands all such waste to be inspected and dismantled from dangerous components before the waste is shredded, incinerated or landfilled. The earlier occurrence of PCBs found in fluff from scrap shredding indicates that there has been PCB components in the scrap.

An inventory of PCB plasticized polysulphide sealants is going on presently. Based on data on construction technique from the period 1956-1973 a wide range of 70-500 tonnes of PCBs in sealants has been estimated. Extrapolation of later data from inventories in the Stockholm area seems to indicate that about 100 tonnes may be a probable quantity. The work with the inventory will continue until all buildings from the period have been examined<sup>87</sup>.

## **4. Removal Companies/disposing facilities**

Holders have to have permits according to the Swedish Environmental code and in the case of decontamination also from the Swedish EPA.

There is a number of certified companies that dismantle electric and electronic waste and one company with a permit to incinerate PCB waste. One facility for high temperature incineration adapted to EC legislation for incinerators for hazardous waste is in operation incinerating PCB waste. It is the Sydkraft Sakab facility in Kumla.

## **5. Responsible authorities**

The local environmental and health authority is responsible or for large industries the county administration.

# **C. Results**

## **1. Quantity PCB removed and left**

Only rough results are available. What is measured is the amount of "PCB waste" out of which typically 25% is PCBs. The fact that PCBs fluids used in transformers is diluted, so that it consists of up to 40% chlorobenzenes is disregarded.

A summary description of the former use of PCBs in heavy electric equipment in Sweden is 200 PCB transformers containing about 500 tons of PCB fluid and 100 000 PCB capacitors containing 1 500 tons of PCBs.

## **2. Quantities PCB disposed by treatment facilities**

The indications of incinerated amounts of PCB capacitors and dismantled PCB transformers from Sakab do not raise any doubts that all the heavy electric PCB equipment is safely disposed of.

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<sup>87</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002.

## 25. Fiche United Kingdom

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

In 1976 the UK production of PCBs ceased. However, the sale for use in electrical equipment was allowed until 1986.<sup>88</sup> In 1986 their sale and use in new plant and equipment was banned in the UK<sup>89</sup>.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

The *Environmental Protection Act 1990 (Extension of Section 140) Regulations 1999* implement the Directive and give effect to the obligations on the phasing out of PCBs and hazardous PCB substitutes.

##### For England & Wales

The *Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) Regulations (England and Wales) Regulations 2000* impose a prohibition on holding PCBs and equipment containing them after 31<sup>st</sup> of July of 2000. If a person is registered, the prohibition is after 31<sup>st</sup> of December 2000<sup>90</sup>.

These Regulations are additional to the requirements of the waste management licensing regime under the *Environmental Protection Act 1990*.<sup>91</sup>

##### For Northern Ireland

The *Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) Regulations 2000* impose a prohibition on holding PCBs and equipment containing them after 31<sup>st</sup> of October 2000. If a person holding PCBs and equipment containing them is registered, prohibition applies only after 31<sup>st</sup> of March 2001.

These Regulations are additional to the requirements of the waste management licensing regime under the *Waste and Contaminated Land Order 1997*.<sup>92</sup>

##### For Scotland

The *Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) Regulations 2000* impose a prohibition on holding PCBs and equipment containing them after 31<sup>st</sup> July 2000. If a person holding PCBs and equipment containing them is registered, prohibition applies only after 31<sup>st</sup> of December 2000<sup>93</sup>.

These Regulations are additional to the requirements of the waste management licensing regime under the *Environmental Protection Act 1990*.<sup>94</sup>

The above Regulations implement the provisions of the Directive which require decontamination or disposal of PCBs and equipment containing them, and the associated provisions on inventories, labelling and monitoring. A transformer in respect of which it is reasonable to assume that the fluids contain 0.05% by weight, or less, of PCBs may be held until the end of its useful life.

#### 3. Limits correspondence with Directive

Yes, 50 ppm.

#### 4. Subsidiary regulation

No.

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<sup>88</sup> <http://www.scotland.gov.uk/library5/environment/pcbs.pdf>

<sup>89</sup> [http://www.ehsni.gov.uk/environment/wastemanage/regulations\\_special.shtml#pcb](http://www.ehsni.gov.uk/environment/wastemanage/regulations_special.shtml#pcb)

<sup>90</sup> Explanatory note, attached by the Statutory Instrument No 1043, <http://www.hmso.gov.uk>

<sup>91</sup> Explanatory note, attached by the Statutory Instrument No 1043, <http://www.hmso.gov.uk>

<sup>92</sup> Explanatory note, attached by the Statutory Rule 2000, No 232, <http://www.hmso.gov.uk>

<sup>93</sup> Explanatory note, attached by the Scottish Statutory Instrument 2000, no 95, <http://www.hmso.gov.uk>

<sup>94</sup> Explanatory note, attached by the Scottish Statutory Instrument 2000, no 95, <http://www.hmso.gov.uk>



## B. Executive

### 1. Inventory on PCB containing equipment

In line with the Directive, which requires the drawing up of inventories for equipment with PCB volumes of more than 5dm<sup>3</sup>, the national regulations for the UK referred to above require the competent authorities under the regulations to draw up inventories of contaminated equipment and submit summaries to UK Ministers. Those inventories include reference to the dates and types of treatment or replacement carried out or envisaged. Summaries of the inventories have been passed to the European Commission in line with the Directive. The national regulations provide for the regular updating of the inventories.

The Agency shall, on or before 30th of September 2000, compile an inventory of the contaminated equipment held at every location in respect of which there is a registered holder. For Northern Ireland, the Department shall according to article 9 on or before 31<sup>st</sup> of December 2000 compile an inventory of the contaminated equipment held at every location in respect of which there is a registered holder<sup>95</sup>.

In December 2001 an inventory took place<sup>96</sup>.

### 2. Plan and other executive measures

In 1997 the Department of Environment produced the UK Action Plan for phasing out and destruction of PCB. This Plan was on voluntary basis before national legislation was produced.

#### According to the Regulations

Contaminated equipment is to be labelled as such and, when decontaminated, within specified limits, is to be relabelled in the form set out in the Regulations.

The procedure for registration is set out. Applicants are required to specify the date by which they expect to have decontaminated or disposed of the equipment concerned. There are provisions on cancellation of registration and on appeals against the non-determination of an application for registration or the cancellation of a registration. Registered holders are required to provide information to the Agency on a regular basis.

There are duties on the Agency to monitor the information supplied, to prepare an inventory and to review it at regular intervals, to provide an annual statement of the number of registered holders and items of equipment of which particulars are registered and in relation to public registers. The purpose is to facilitate the discharge of the obligation imposed by article 4.1. of the Directive to send to the Commission a summary of the inventories of equipment with certain PCB volumes. The agency also obtains other relevant information through the system of consignment notes under the Special Waste Regulations 1996.

There are provisions on charges payable to the Agency under the Environment Act 1995, criminal offences are created; and certain earlier measures are repealed.

Schedule 1 to the Regulation (England and Wales) records the disposal operations D8 to D10, D12, And D 15, set out in Annex IIA of Directive 75/442/EEC on waste, as replaced by Council Decision 96/350. These are the only permitted methods of disposal of PCBs and equipment contaminated by PCBs under the Directive. Schedule 2 sets out the Directive requirement for the labelling of decontaminated equipment<sup>97</sup>.

All these provisions were added in the Supplementary Action Plan, issued in February 2002.

Other executive measures were:

- A Waste Management Paper No. 6 PCB was published in December 1994;
- Health and Safety Executive (HSE) Guidance;
- HSE leaflet 1995: PCB and you.

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<sup>95</sup> Regulations 2000, article 9 under 1, Statutory Rule 2000, No 232

<sup>96</sup> Correspondence research at EC Commission.

<sup>97</sup> European Environment Law Review June 2000, page 171

### Northern Ireland

Holders of equipment containing PCBs and other dangerous substances are legally required to register their holdings with the Environment and Heritage Service (EHS), label the equipment and phase out and safely dispose of significant PCB holdings.

Exemptions will allow certain specified equipment to be held until the end of their useful life. Fines of up to £5,000 and/or prison sentences of up to two years could be imposed on those found guilty of breaching the regulations<sup>98</sup>.

Applications to register must be made on the application form, Annual Registration of PCB Holders, after reference to the Explanatory Notes and Guidance Notes. The EHS has fixed charges for the service provided in the course of carrying out functions in connection with these regulations, including charges for holders registering their holdings. These charges must accompany the application form<sup>99</sup>.

### **3. Measures for small PCB containing equipment (smaller than 5 dm3 volume PCB)**

The substitution of PCBs by non-hazardous substances is a matter for individual businesses and has been occurring for some years<sup>100</sup>.

The Scottish Executive Environment Group has published the UK Guidance: Collection and Disposal, of Equipment Containing Small Amounts of PCBs. This covers small electrical and electronic appliances.

### **4. Removal Companies/disposing facilities**

PCBs, PCB waste must only be disposed of by specialist waste contracting firms which are licensed by the Waste Regulation Authority. PCBs are normally destroyed in an incinerator authorised to burn PCBs, although there are other ways of destroying PCBs. The National Association of Waste Disposal Contractors (NAWDC) can provide a list of their members licensed to dispose of PCBs<sup>101</sup>.

### For Northern Ireland

PCBs need to be safely disposed of at facilities licensed to dispose of them, and consigned in accordance with the *Special Waste Regulations 1996* (as amended (Special Waste Regulations (Northern Ireland) 1998) and in accordance with the consignment note system. The wastes will need to be transported for disposal by a carrier registered with the Environment Agencies under the *Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations 1991* and the *Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations (Northern Ireland) 1999*<sup>102</sup>.

The following waste management companies are licensed to treat PCB wastes via high temperature incineration:

- Shanks Waste(Southampton)
- Solutions Shanks Waste Solutions (Torfaen)
- Cleanaway Ltd (Cheshire)<sup>103</sup>.

### **5. Responsible authorities**

- Environmental Agency (England and Wales)
- The Department of the Environmental (Northern Ireland), The Environment and Heritage Service is responsible for the execution
- SEPA (Scottish Environmental Protection Agency) (Scotland).

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<sup>98</sup> [http://www.ehsni.gov.uk/environment/wastemanage/regulations\\_special.shtml#pcb](http://www.ehsni.gov.uk/environment/wastemanage/regulations_special.shtml#pcb)

<sup>99</sup> [http://www.ehsni.gov.uk/environment/wastemanage/regulations\\_special.shtml#pcb](http://www.ehsni.gov.uk/environment/wastemanage/regulations_special.shtml#pcb)

<sup>100</sup> OSPAR Convention, assessment of Contracting Parties' Implementation Report on PARCOM Decision 92/3 on the Phasing Out of PCBs and Hazardous PCB Substitutes, 2002

<sup>101</sup> <http://www.hse.gov.uk/pubns/msa19.htm>

<sup>102</sup> UK Guidance: Collection and Disposal, of Equipment Containing Small Amounts of PCBs, page 4

<sup>103</sup> UK Guidance: Collection and Disposal, of Equipment Containing Small Amounts of PCBs

## C. Results

### 1. Quantity PCB removed and left

According to the information the UK sent to the EC Commission the inventory of December 2001 has resulted in the following PCB containing equipment (including 50-500 ppm):

Holders in:	Number equipment
England/Wales	40825
Scotland	321
N-Ireland	1

Based on the Waste Management Paper No 6 PCB (December 1994) some relevant data are:

- Production PCB in 1951-1976: 66.500 ton, export 27.000 ton ;
- Application in closed systems: 14.000 ton of which 2.000 ton is exported;
- Application in open systems: 25.500 ton.

In UK remaining 12.000 ton. Until 1986 about 4.000-5.000 has been treated in UK, so remaining quantity of PCB: 8.000 ton which covers about 40.000 – 50.000 ton of waste.

### 2. Quantities PCB disposed by treatment facilities

In UK until 1986 about 4.000-5.000 ton PCB waste has been treated.

## 26. Fiche Luxembourg

### A. Legislation

#### 1. Measures to forbid production and trading of PCB's (including restricting the reuse of PCB)

Regulation of the 11<sup>th</sup> of March 1984: regulation of the marketing and the use of certain substances and dangerous preparations.

*Règlement ministériel du 30 septembre 1986 portant modification du règlement ministériel du 15 juillet 1981 concernant la subvention revenant aux personnes qui ont contracté des dettes en vue de la construction et de l'acquisition d'un logement social.* As from 1<sup>st</sup> of January 1 1994 use is prohibited of apparatuses, installations and fluids containing or contaminated by polychlorobiphényles and/or polychloroterphényles. However this prohibition does not apply to worn oils which are contaminated by PCB/PCT in concentrations lower than 0,005 % in weight.

#### 2. Measures for disposing and decontamination of PCB's and equipment containing PCB's before 2010

*Reglement grand-ducal of 24<sup>th</sup> of February 1998* implements the Directive 96/59/EC. All equipment > 500 ppm has to be disposed of before 31<sup>st</sup> of December 2005. The deadline for equipment with equal or lower than 500 ppm is before 31<sup>st</sup> of December 2010.

#### 3. Limits correspondence with Directive

Yes

#### 4. Subsidiary regulation

### B. Executive

#### 1. Inventory on PCB containing equipment

Article 4 of the *Reglement grand-ducal of 24<sup>th</sup> of February 1998* makes it compulsory for holders of PCBs and PCB containing equipment to notify relevant technical data concerning this equipment. This article makes it compulsory to notify any action carried out with regard to this equipment.

#### 2. Plan and other executive measures

#### 3. Measures for small PCB containing equipment (smaller than 5 dm<sup>3</sup> volume PCB)

#### 4. Removal Companies/disposing facilities

#### 5. Responsible authorities

### C. Results

#### 1. Quantity PCB removed and left

PCB stock in 2003( electrical and electronical equipment) <sup>104</sup>

PCB containing liquid: 150 ton.

#### 2. Quantities PCB disposed by treatment facilities

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<sup>104</sup> European Commission, Study to facilitate the implementation of certain waste related provisions on the Regulation on Persistent Organic Pollutants (POPs). Draft Final Report, 27 May 2005, table 4-38, page 180