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Ministrstvo za okolje in prostor, Agencija Republike Slovenije za okolje
PCBs and POPs waste in Slovenia



Regional Training Workshop on PCBs and POPs wastes for the Central and Eastern European Region

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Republic of Slovenia



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Use of POPs and PCB in Slovenia

- The use of PPP (Plant Protection Products) was ceased as early as in the former common state Yougoslavia (by 1982)
- Eldrin was banned by 1989
- A survey among sellers and users (farms) indicates, that there was approx. 90 kg of POPs stockpiles (2004)
- PCB – industrial usage and production of PCB equipment in Slovenia was ceased and replaced in January 1985
- Slovenia later on adopted the provisions of the EU Directive on the disposal of polychlorinated biphenyls (PCB) and polychlorinated terphenyls (PCT) and integrated them into the national legislation
- One of the main provisions requires that all the PCB equipment in use is decontaminated or disposed by the end of 2010



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POPs and PCB Legislation in Slovenia

- National Implementation Plan for the Management of Persistent Organic Pollutants (hereinafter referred as: NIP) – the basic strategic document, that entered into force on the 9.07.2009; NIP is prepared on the basis of the Stockholm Convention
- Operational programme for disposal of polychlorinated biphenyls and polychlorinated terphenyls for the period 2009-2012, that entered into force on the 19.03.2009
- Decree on the implementation of the Regulation of the European Parliament and of the Council on persistent organic pollutants (Official Journal of the Republic of Slovenia, No. 04/05)
- Decree on disposal on polychlorinated biphenyls and polychlorinated terphenyls (Official Journal of the Republic of Slovenia, No. 34/08 and 09/09)
- Environmental Protection Act (Official Journal of the Republic of Slovenia, No. 39/06-ZVO-1-UPB1, 49706-ZMetD, 66/06-OdlUS, 33/07-ZPNačrt, 57/08-ZFO-1A in 70/08)
- Decree on waste management (Official Journal of the Republic of Slovenia, No. 34/08)



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Competent Authorities for POPs and PCB Waste

- Ministry for Environment and Spatial Planning – prepares the national legislation and takes care for its harmonization with the European legislation
- Environmental Agency of the Republic of Slovenia (EARS) – body affiliated to the ministry (issuing environmental permits; managing various environmental registers and records)
- Inspectorate of the RS for the Environment and Spatial Planning, Environmental Inspection – body affiliated to the ministry (exercising field inspection)



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Environmental Agency of the Republic of Slovenia (EARS) – competences of the authority

EARS – among other tasks – keeps:

- registers of legal persons involved in waste collection, waste transport, waste treatment (recovery and disposal) – including for POPs and PCBs waste
- records of waste generation, waste collection, waste recovery/disposal – including the data for individual POPs and PCBs waste
- inventory of the PCB equipment (with PCB volumes greater than 5 dm³ – transformers, capacitors and other containing residual stocks of PCB); inventories comprise the following data: the names and addresses of the holders, the location and description of the equipment, the quantity of the PCBs contained in the equipment (if there is existing data), the planned dates and types of treatment (decontamination or disposal of the equipment), the dates of the declaration to EARS
- INVENTORIES ARE REGULARLY UPDATED (every 12 months)



The situation in Slovenia, and some data from the EARS PCB registers and PCB records (1)

1. For the time being there are **98 holders** of the PCB equipment in Slovenia - legal persons – companies from the private domain with the amount of the PCB equipment (gross weight) about **350.000 kg** – mandatory disposing until 31. 12. 2010.
2. About 8000 transformers in public use, in management of the public electrical distribution companies, are PCB equipment – **9.430.000 kg** (gross weight). Those are transformers that haven't been classified yet if they contain PCB oil or not. Our estimation is, that around 5 % of those transformers actually contain PCB oil – so it **would be 470.000 kg** (gross weight) of PCB equipment. This estimation is based on operations of decontamination and disposal of similar transformers that were already carried out in the past years.



The situation in Slovenia, and some data from the EARS PCB registers and PCB records (2)

3. In 2001 the database included **157 registered holders** of PCB equipment - legal persons – companies from the private domain (net amount of PCB: **118.503 kg** in all devices; **61.723 kg** in capacitors; **34.183 kg** in transformers; **22.597 kg** in other equipment).
4. The above data show that most of the PCB equipment with waste PCB are capacitors.
5. According to hazardous waste management data, 21.540 kg PCB oil for insulation or heat transfer was shipped to France in 2003 and 24.286 kg of transformers and capacitors containing PCB were shipped to Germany.



The situation in Slovenia, and some data from the EARS PCB registers and PCB records (3)

6. ESTIMATIONS

Main part of phasing-out PCB equipment will be completed in 2008-2010, according to the plan of PCB removal (the disposal of PCB equipment or its decontamination and new filling with non-PCB insulation oils in transformers).

7. PRESUMPTIONS

In the past a lot of activities in disposing and exporting PCB waste were carried out in the years 2001 and 2002.

8. REALITY

- Many problems result from leakage – release of PCB oil from old transformers; such transformers have to be disposed at once.
- The transformers with no data - unclassified – there is an obligation of performing chemical analysis – usually at the time when maintenance is carried out
- in Slovenia the company that carries out decontamination of PCB equipment performs those analysis – applied method: KWIK SCREENE analysis



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Slovenia – PCB waste contaminated site – Semič (1)

The company ISKRA Capacitors Semič produced PCB capacitors in the period from 1962 until 1985 in which PCB waste was regularly generated.

Until 1975 about 100 tons of various PCB waste was deposited in some landfills around the factory site in Semič.

It contained about 60 t of PCB technical blends – PCB waste. After 1975, the factory started to ship PCB waste to France for disposal.

The inventory of PCB use in factory from 1962 to 1985 shows that the total quantity of waste released to the environment and other forms of emission was approximately 70 t (calculated for net PCB).

The capacitor production was stopped in 1985.



Slovenia – PCB waste contaminated site – Semič (2)

Decontamination of PCB contaminated soil – 18.000 m³ of soil was excavated and classified into:

- “clean” (less than 10 mg PCB/kg) and
- “unclean” – 7000 m³ in total – permanently deposited in a special waterproof concrete storage – concrete sarcophagi. The storage was built in 1986.

The concrete storage – sarcophagi permanently stores about 30,000 kg PCB waste. That amount consists of collected and physically removed PCB waste from all sites in the company – factory yard and around the company (the waste in the concrete sarcophagi consists of PCB contaminated objects and soil).



Difuse pollution sources (equipment, with PCBs with volume less than 5 dm³ PCBs)

- Construction material – colors, additives; household electrical appliances – small PCB capacitors; etc.)
- The quantity of such diffuse sources in Slovenia in households and other entities (industry) was estimated about 210.00 kg
- Procedures for collecting that type of waste are implemented in legislation by rules for collection and separation of municipal waste; rules for collecting construction and demolition waste; rules of management for waste electrical and electronic equipment (WEEE)
- the fractions of waste containing PCB have to be handled as hazardous waste



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The actual quantities of PCB waste exported from Slovenia in the years 1998 - 2007

Year of export	Quantity / kg
1998	54.230
1999	106.130
2000	38.515
2001	151.994
2002	115.918
2003	38.683
2004	98.980
2005	0
2006	64.760
2007	22.570



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Legal persons – registered for treatment of PCB waste in Slovenia

For the time being:

- **10 companies** are registered – hold valid permits for collecting PCB waste
– PCB waste collectors
- **1 company** is registered – holds a valid permit for performing
decontamination of PCB equipment

Mainly the same companies that are registered for treatment of PCB waste today, were also active on this field in the past (KNOW-HOW)



Final destinations and final treatment procedures of exported PCB waste (in the years 1998 – 2007):

- | | | |
|---|---|--------------|
| - Tredi, P.I. de la plaine d l'Ain, France | → | D10 |
| - L+Z Transformatoren und Industrieservice GmbH,
Germany | → | D10, D12, D9 |
| - K+S Kali GmbH, Werk Wera, Untertage-Deponie Herfa
Neurode, Germany | → | D12 |
| - Tredi, Tredi Department PCB International, France | → | D10 |
| - SÜD-MÜLL-Transport GmbH & Co KG, Germany | → | D13, D10 |
| - A.S.A. Abfallservice Wr. Neustadt GmbH, Austria | → | D10, D12 |
| - Fernwärme Wien GmbH, Spittaluarländer, Austria | → | D10 |
| - Blum Recycling GmbH, Germany | → | D12 |
| - Fernwärme Wien GmbH, Werk Simmeringer Heide,
Austria | → | D10 |



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1 year to 31. 12. 2010 – final date of PCB disposal

- In 2009 – the updating of the EARS PCB registers and records is carried out twice a year
- additional field inspections are planned for the second half of the 2010
- field inspections regarding PCB equipment (transformers and capacitors) are planned for the 2011 – to estimate the real situation – verifying the accomplishment of disposing the PCB equipment and PCB waste



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