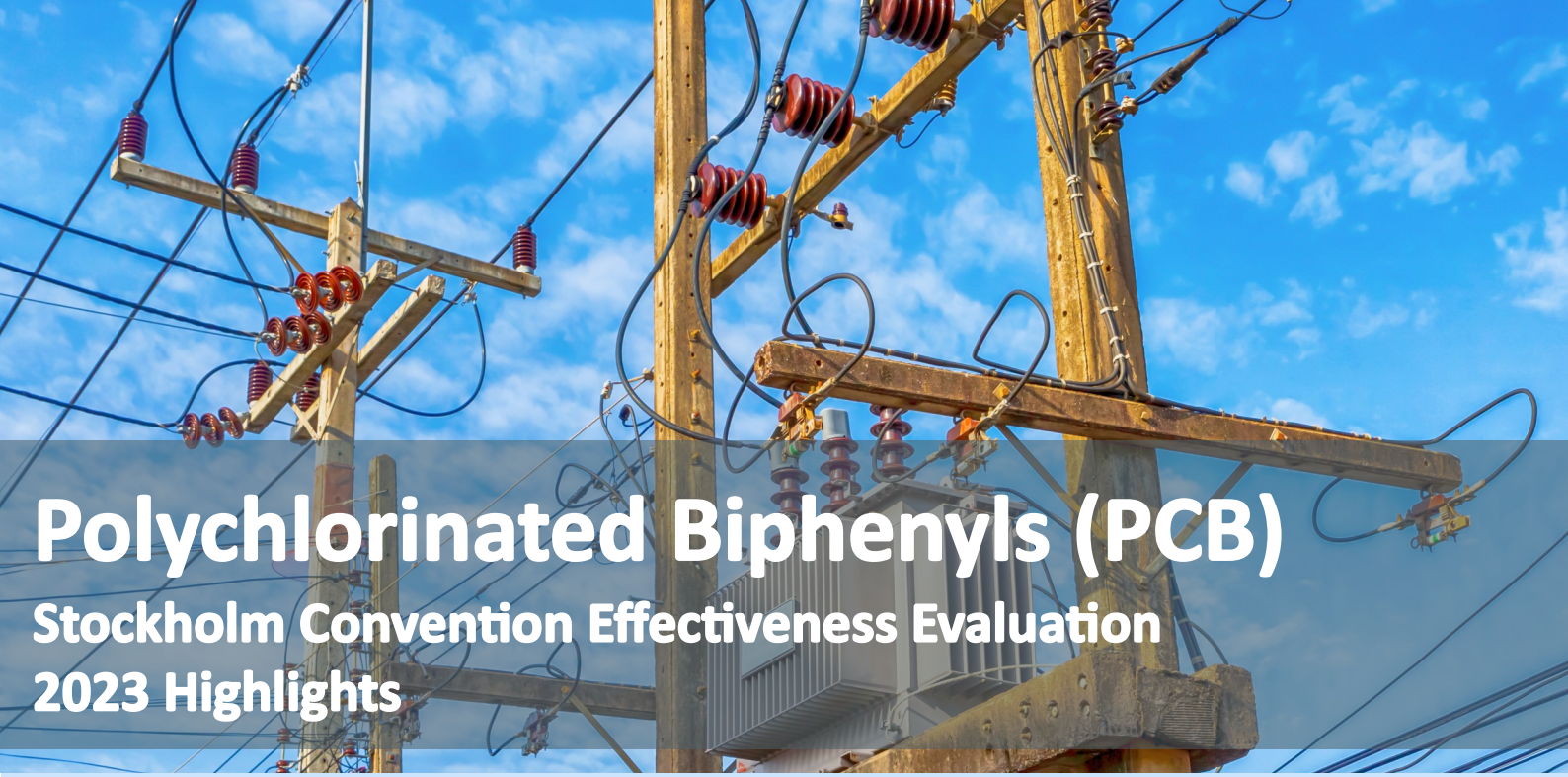

Polychlorinated Biphenyls (PCB)

Stockholm Convention Effectiveness Evaluation

2023 Highlights

Background Information

The group of chemicals known as polychlorinated biphenyls (PCB) is one of the original twelve POPs covered by the Stockholm Convention. They possess properties including longevity, heat absorbance and form an oily liquid at room temperature that was useful for electrical utilities and in other industrial applications.

Due to their physico-chemical properties, PCB were used in a wide range of applications, most importantly as insulating fluids in transformers. PCB were also used in other types of closed and semi-closed applications, such as capacitors, as well as in so-called 'open applications such as paints, sealants and carbon paper.

PCB pose a serious threat to human health and the environment. Among others, they are considered to be carcinogenic, immunotoxic and affect reproduction. Once released into the environment, PCB remobilize and enter the ecological food chain, eventually contributing to human exposure via food intake.

PCBs are listed in Annex A to the Stockholm Convention and their production and new uses are banned. Parties to the Stockholm Convention must eliminate the use of PCB in equipment by 2025 and ensure the environmentally sound waste management of liquids containing PCB and equipment contaminated with PCB by 2028.

Measures to Reduce and/or Eliminate Releases

The total production of PCB worldwide is estimated to have been between 1 and 1.5 million tons, with each ton of technical grade PCB generating more tons of waste containing or contaminated with PCB at relevant concentrations.

Data available, though limited, shows that there continues to be a large stock of PCB and PCB-containing equipment that needs to be managed in an environmentally sound manner, especially in developing country Parties and Parties with economies in transition.

The total quantities of PCB produced, the cumulative quantities of PCB eliminated and identified remaining amounts for elimination in reported national inventories are shown in table 1.

Global information reported under the Stockholm and Basel Conventions	Production (t)	PCB eliminated (Local destruction + exports) (t)	Identified to be eliminated (t)
	1,046,000 – 1,512,000	596,385	639,057

Table 1. Overview of progress towards eliminating PCB (Source: UNEP/POPS/COP.11/INF/11)

Changes in Concentrations Measured in the Environment and in Human Populations

Overall, concentrations of PCB have decreased significantly from peak values in the 1970s to the early 2000s. Since then, concentrations have decreased slowly or remained stable. PCB emissions continue from product usage, obsolete stockpiles, and waste disposal/dismantling/recycling practices, while open burning of wastes continue to release unintentionally produced PCB to the atmosphere.

The trend information available from all regions indicates that, overall, concentrations of PCB measured in air has largely decreased.

The levels of PCB in human milk have fallen steadily from their earlier high levels, indicating the effectiveness of measures implemented to reduce environmental releases combined with regulations on food and dietary recommendations as well as accompanying changes in diet (figure 1).

Concentrations of PCB remain at levels of concern for some species and regions (e.g., PCB in polar bears and whales).

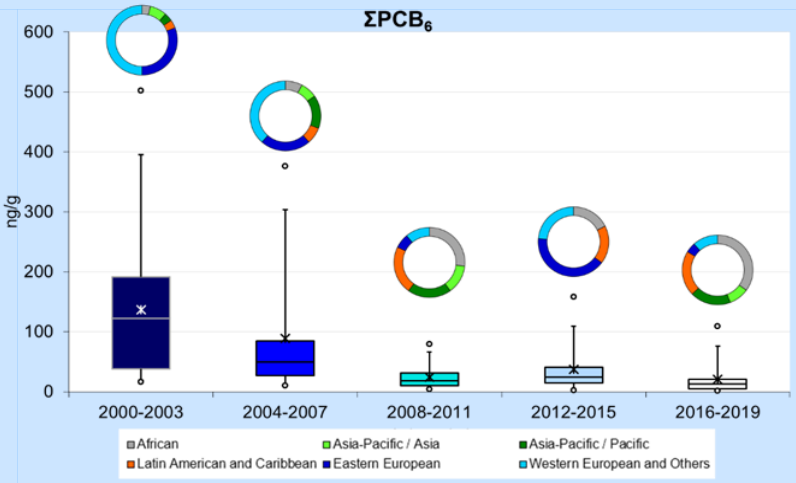

Figure 1. Median and range of ΣPCB$_6$ concentrations (ng/g lipid) in human milk (5 rounds in 2000–2019). (Box plot: Minimum and maximum as circles; Whiskers: 5th and 95th percentile; Lower (25–50%) and upper (50–75%) quartiles separated by the line for the median as box and mean as asterisk. Source: Malisch et al. in press, a. Cited in GMP-3 report in UNEP/POPS/COP.11/INF/38)

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Changes since the First Effectiveness Evaluation

Some progress has been made in the elimination of PCB use and the environmentally sound management of PCB waste since the first effectiveness evaluation. However, this progress is still insufficient to ensure that the goals of the elimination of PCBs as outlined in the Convention can be met. It is estimated that the amount of PCB equipment that still needs to be eliminated to be much larger than previously reported.

While progress has been made to strengthen national or regional capacities for the elimination or irreversible transformation of PCB congeners and formulations, there continues to be a need to strengthen this capacity. National reporting on PCB is still in need of improvement, both in terms of data availability and comprehensiveness as well as clarity and structure of the data.

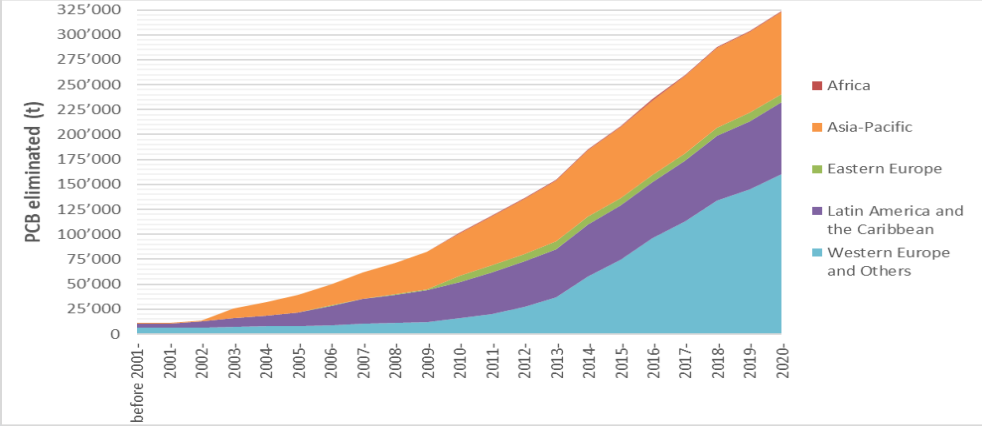

Figure 2. *Cumulative quantities of PCB destroyed within national boundaries (t).(Source:EE-2 report in UNEP/POPS/COP.11/INF/36)*

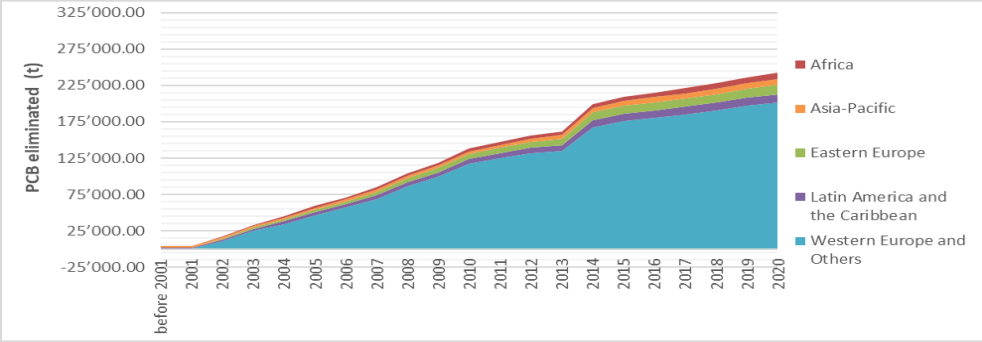

Figure 3. *Cumulative amounts of PCB exported for destruction over time per region* ***(t).*** *).(Source:EE-2 report in UNEP/POPS/COP.11/INF/36)*

Recommendations of the Effectiveness Evaluation Committee

- ✓ Parties that have not done so **should be urged to immediately implement legal and administrative measures** to meet the 2025/2028 obligations of the Stockholm Convention and to urgently define rigorous plans for the environmentally sound management of PCB throughout its life cycle, including its elimination and destruction, and to take into account the optimal and most cost-effective solutions given the specific background and circumstances of each individual country.
- ✓ Parties should be **encouraged to strengthen their national or regional capacities** for the elimination or irreversible transformation of PCB.
- ✓ The Secretariat should be requested to **provide technical assistance for developing country Parties and Parties** with economies in transition to strengthen national or regional capacities for the elimination or irreversible transformation of PCB.
- ✓ Each Party should be encouraged to **ensure that their national reports contain comprehensive, clear, reliable and well-structured data** on the amounts of PCB already eliminated and, most importantly, the amounts still to be eliminated, and the Conference of the Parties should continue mandating the small intersessional working group on PCB to provide support to this process.
- ✓ The Conference of the Parties and the Secretariat should highlight to the GEF the **need for its projects to be designed to strengthen human and infrastructure capacities for PCB elimination and destruction** which will last beyond the duration of the project, and to support the development of sustainable infrastructure, processes and techniques that can be used for the transportation, storage and destruction of other hazardous wastes, particularly POPs waste, including PCB.

The report on progress towards elimination of PCB, including the recommendations of the small intersessional working group on PCB, can be found in document UNEP/POPS/COP.11/INF/11.

Guidance documents and guidelines have been developed to assist Parties in meeting their obligations under the Convention, and are available at: http://chm.pops.int/?tabid=665.

For more information on the second effectiveness evaluation of the Stockholm Convention, please refer to documents UNEP/POPS/COP.11/19/Add.1 and UNEP/POPS/COP.11/INF/36.

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