

Polychlorinated biphenyls (PCB)

Highlights of the effectiveness evaluation 2017

Background Information

According to Part II of Annex A to the Stockholm Convention, parties are required to eliminate the use of PCB in equipment (e.g. transformers, capacitors or other receptacles containing liquid stocks) by 2025 and to take measures for environmentally sound waste management of liquids containing PCB and equipment contaminated with PCB with content above 0.005 per cent no later than 2028.

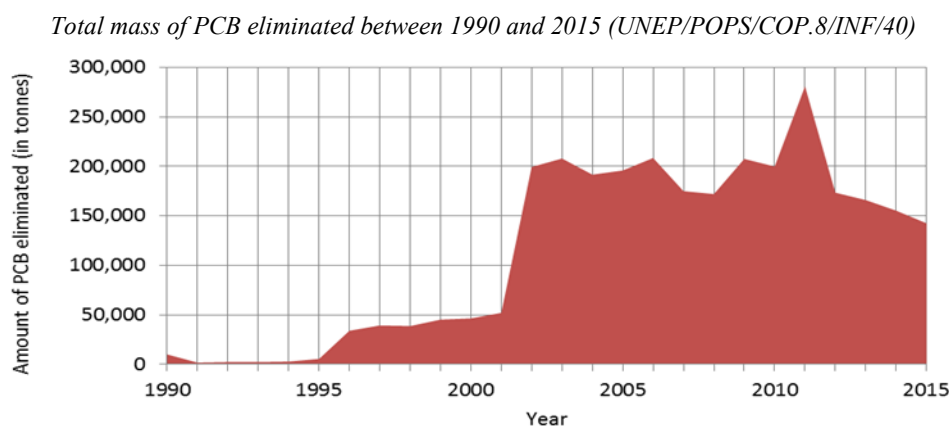
The following guidance documents and guidelines have been developed to support parties meeting these obligations (<http://chm.pops.int/Implementation/IndustrialPOPs/PCBs/Guidance/tabid/665/Default.aspx>):

- Updated technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with polychlorinated biphenyls (PCB), polychlorinated terphenyls (PCTs) or polybrominated biphenyls (PBBs), including hexabromobiphenyl (HBB);
- Guidelines for the identification of PCB and materials containing PCB;
- PCB inventory form;
- PEN magazine – inventories of PCB;
- Polychlorinated biphenyls inventory guidance;
- PCB transformers and capacitors from management to reclassification and disposal;
- Framework for the management of PCB;
- Preparation of a national environmentally sound management plan for PCB and PCB-contaminated equipment;
- Inventory of world-wide PCB destruction capacity;
- Survey of currently available non-incineration PCB destruction technologies;
- Destruction and decontamination technologies for PCB and other POPs wastes under the Basel Convention;
- PCB in open applications, identification and environmentally sound management.

Measures to reduce and/or eliminate releases

An estimated 1 to 1.5 million tonnes of technical grade PCB have been produced, with each tonne of technical grade PCB having generated at least 20 tonnes of waste containing or contaminated with PCB at relevant concentrations. The amount of liquids and equipment containing or contaminated with PCB eliminated by the Parties to the Stockholm Convention to date is estimated at approximately 3 million tonnes. Actual amounts eliminated could be much higher, most notably because quantitative data was not available for a large number of countries.

According to available data, approx. 70 % of the total was eliminated after 2004. The largest amounts were reported to have been eliminated in 2011. The data suggest that increasing amounts were eliminated in the years leading up to the Convention's entry into force and thereafter. The data should be viewed with caution due to biased reporting: Many countries' national reports provide data from 2001 onwards.



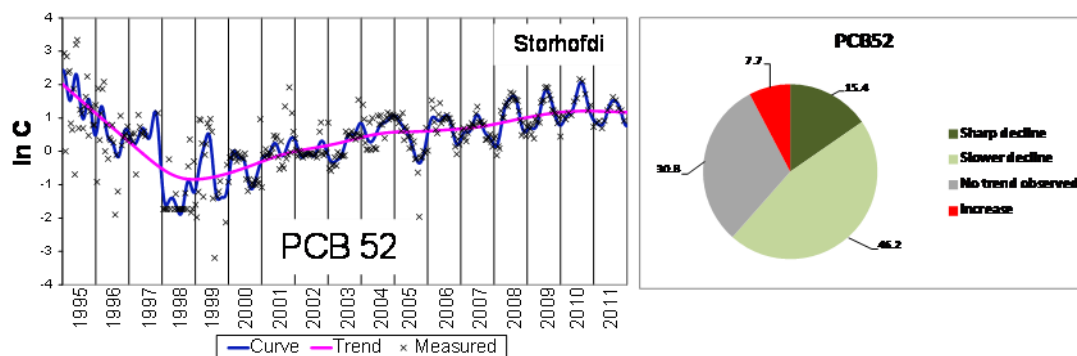
The amount of PCB liquids and equipment that still need to be eliminated is estimated to be about 14 million tonnes, most of which is found in transformers. Information on other applications including, in particular open applications, is limited. It is highly probable, at least in part due to low reporting rates, that the actual amounts still to be eliminated are much larger.

Currently no mechanism is available under the Convention to review and monitor progress in implementation of the PCB provisions.

Changes in concentrations measured in the environment and in human populations

Measurable concentrations of PCB are detected in air and human matrices worldwide. The trend information available from Asia Pacific, CEE and WEOG indicates that, overall, concentrations of legacy POPs, including PCB measured in air have largely decreased. However, PCB 52 at the Arctic station of Stórhöfði in Iceland has shown steadily increasing trends over the past few years of the time series. Such instances of increasing trends are attributed to the re-emission of PCB previously deposited and accumulated in water, ice and soil that have started to be released back to air due to a warming Arctic and the associated retreating sea ice and melting glaciers. This is an exception and generally declining trends in air are reported.

Time trends of PCB 52 at the arctic station of Stórhöfði in Iceland. Also shown are the general summary pie charts of time trends observed in the WEOG region for PCB 52. (UNEP/POPS/COP.8/INF/38)



Changes over time in human exposure show a similar downward pattern as in air, but the decrease seems to be more significant after 2000 than in air samples. For other media, the overall picture that emerges is that concentrations did decrease significantly from peak values in the 1970s to the early 2000s but the measured values since then do not show significant trends and in some cases small increases have been observed.

Conclusions and recommendations of the effectiveness evaluation committee

The Stockholm Convention, through the development of NIPs, as well as the many GEF-funded projects, had a beneficial impact on raising awareness of PCB, building national capacity and in eliminating PCB-containing liquids and equipment, but progress toward PCB elimination is slow. While some progress has been made towards the elimination of PCB, the majority of Parties are currently not on track to identify, label and remove from use equipment and liquids containing PCB by 2025 and to manage waste liquids and equipment containing PCB in an environmentally sound manner by 2028 and the number of tonnes remaining to be disposed of globally is daunting. A strong argument can be made that the scope of the challenge of achieving the elimination of use of PCB by 2025 and the environmentally sound management of PCB by 2028 has been severely underestimated at least in part due to poor reporting.

Recommendation: *There is a need, in particular for developing country Parties and Parties with economies in transition, to strengthen their national or regional capacities for the elimination or irreversible transformation of PCB congeners and formulations.*

Recommendation: *Parties should urgently define rigorous plans for the environmentally sound management of PCB throughout its life cycle, including its elimination and destruction, and explore the optimal and most cost-effective solutions given the specific background and circumstances of each individual country.*

Most national inventories of PCB are preliminary in scope and provide a fragmented picture. Even for closed applications, comprehensive data are often lacking. Currently no mechanism is available under the Convention to review progress in implementation of the PCB provisions.

Recommendation: *PCB inventories need to be undertaken in a systematic manner, in accordance with the existing guidance, and cover all types of equipment, sectors and geographical areas. Each Party should 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. It may be useful to establish a mechanism under the Convention to review progress in PCB elimination.*

The costs of eliminating the large amounts of PCB which remain are significant. Despite the current level of financing to this issue, substantial additional funding will be necessary to eliminate and destroy the amounts of PCB in use or stored if the objective of the Convention is to be met.

Recommendation: *GEF projects should be designed to strengthen human and infrastructure capacities for PCB elimination and destruction which will last beyond the duration of the project. Initiatives to manage PCB in an environmentally sound manner should also be designed to develop sustainable infrastructure, processes and techniques that can be used for the transportation, storage and destruction of other hazardous wastes particularly POPs wastes.*

For more information, please see documents UNEP/POPS/COP.8/22/Add.1 and UNEP/POPS/COP.8/INF/40