# PCB Regional Webinar Series

## Webinar #3: Making visible the legacy of polychlorinated biphenyls (PCBs): A regional webinar – EUROPE

**Webinar Report**

4 September 2025

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**Polychlorinated Biphenyls (PCBs)** are a class of synthetic chlorinated organic chemicals that are toxic to wildlife and humans, persistent, and can bioaccumulate and travel long distances in the environment. Furthermore, they are classified as carcinogens, and can suppress the immune system, which can increase the risk of developing a wide variety of diseases. There is scientific evidence that humans are exposed to PCBs through ingestion of animal fats, inhalation, and absorption through the skin. Workers in the electrical sector can be particularly exposed to PCBs as these chemicals may be present in older electrical equipment such as transformers, capacitors and fluorescent lighting ballasts.

PCBs have been listed under the **Stockholm Convention** as Persistent Organic Pollutants (POPs). Parties that ratified the Stockholm Convention aim to eliminate the use of PCBs by 2025 and to provide their environmentally sound waste management by 2028.

The Basel, Rotterdam, and Stockholm (BRS) Secretariat and the United Nations Institute for Training and Research (UNITAR) are jointly hosting **regional webinars** that will offer valuable updates, technical insights, and an opportunity for a regional dialogue as Parties prepare for the 2026 reporting round and assess progress toward the 2025 and 2028 goals for the elimination of PCBs under the Stockholm Convention. These webinars have the following objectives:

- To inform countries about the outcomes of the recent 2025 Conferences of the Parties, including the revised guidance documents developed by the PCB Small Intersessional Working Group (SIWG), and new mandates adopted.
- To present the revised reporting format, timeline, and logistical arrangements for the 2026 reporting cycle under the Stockholm Convention.
- To provide an overview of the progress assessment process, including the 2027 global progress report coordinated by the BRS Secretariat with technical support from the PCB SIWG.
- To update on the status of the region in terms of PCBs management, share lessons learned, and discuss how these inputs can shape future actions.
- To provide information on the PCB Global Elimination Programme, the Global Environment Facility (GEF), and other innovative financing approaches for achieving the 2025 and 2028 goals for the elimination of PCBs.

Webinar #3: “Making visible the legacy of polychlorinated biphenyls (PCBs): A regional webinar – EUROPE” is designed to support countries in Europe in advancing toward the 2025 and 2028 goals for PCBs elimination under the Stockholm Convention.

# Agenda

| Time | Agenda Item | Speakers |
|---|---|---|
| 9:00 – 9.10 | Opening of the meeting | **Delena Indar,** Training Assistant, UNITAR |
| 9:10 - 9:25 | PCB goals under the scope of the Stockholm Convention and the BRS programme of work | **Agustín Harte** Programme Management Officer, Secretariat of the Basel, Rotterdam & Stockholm (BRS) Conventions |
| 9:25 - 9:45 | Global and regional experiences and best practices for the Environmentally Sound Management of PCBs | **Alessandro Capo,** Senior PCBs Expert |
| 9:45 – 10:00 | Questions and Answers | All Participants |
| 10:00 – 10:15 | Developing Effective National PCB Strategies: Practical Insights | **Tatiana Tugui/Natalia Efros,** Project Manager, EA ProMediu |
| 10:25 – 10:30 | 5-minute transition time / buffer | |
| 10:30 – 10.45 | Exploring innovative financing pathways for PCB elimination | **Frank Moser** Secretariat of the BRS Conventions |
| 10:45 – 10:55 | Questions and Answers | All Participants |
| 11:00 | Closing remarks | **Delena Indar,** Training Assistant, UNITAR |

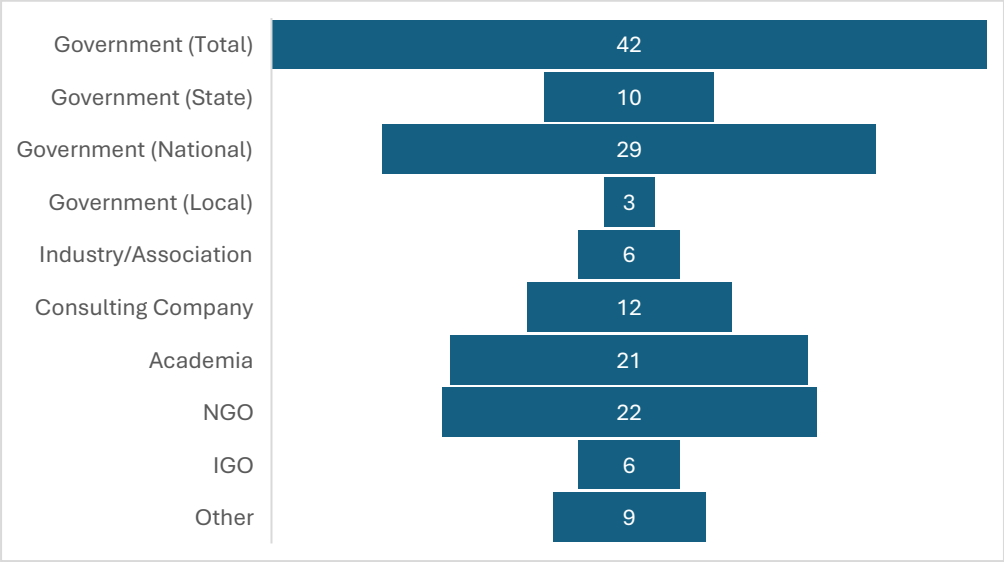
# Resources

The resources for this webinar (flyer, presentations, satisfaction survey, recording) are available in the **Shared Folder** and on the **PCB e-Learning Platform**.

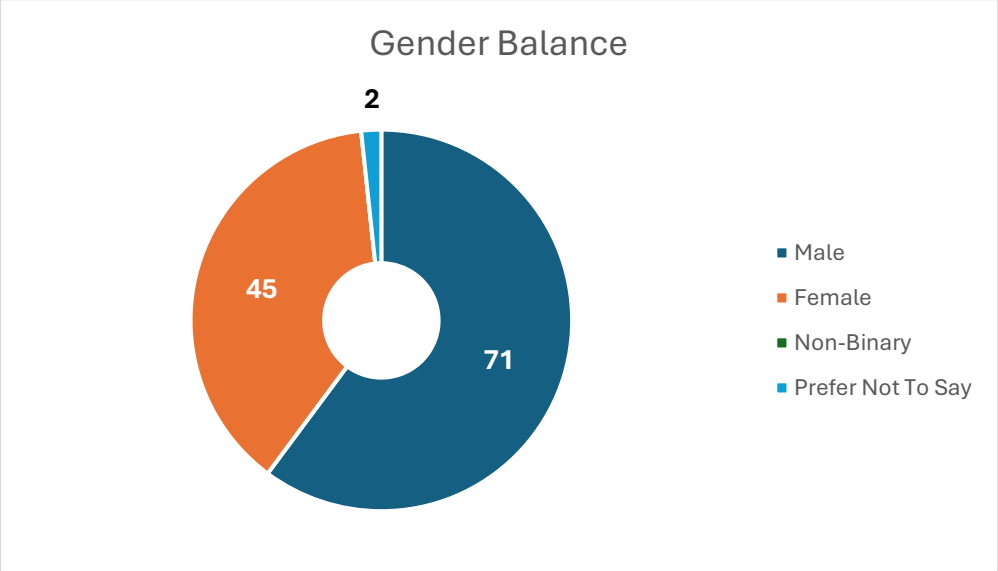
# Attendance breakdown and representation

## Total attendance: 118 participants

### Sector distribution of participants




### Gender distribution of participants



## Country distribution of participants

| EUROPEAN REGION (18 COUNTRIES) | |
|---|---|
| Country | # |
| Russia | 6 |
| Belarus | 3 |
| Bulgaria | 2 |
| Netherlands | 2 |
| Poland | 2 |
| Switzerland | 2 |
| Andorra | 1 |
| Czech Republic | 1 |
| Germany | 1 |
| Greece | 1 |
| Hungary | 1 |
| Latvia | 1 |
| Moldova, Republic of | 1 |
| Serbia | 1 |
| Slovakia | 1 |
| Slovenia | 1 |
| Sweden | 1 |

| OTHER REGIONS (46 COUNTRIES) | | | |
|---|---|---|---|
| Country | # | Country | # |
| Kenya | 9 | Jordan | 1 |
| Nigeria | 5 | Liberia | 1 |
| Armenia | 4 | Malawi | 1 |
| Kyrgyzstan | 4 | Malaysia | 1 |
| Pakistan | 4 | Nepal | 1 |
| Philippines | 4 | Peru | 1 |
| Bangladesh | 3 | South Africa | 1 |
| Indonesia | 3 | Taiwan | 1 |
| Kazakhstan | 3 | Tajikistan | 1 |
| Rwanda | 3 | Tanzania | 1 |
| Sierra Leone | 3 | Tunisia | 1 |
| Somalia | 3 | United States | 1 |
| Egypt | 2 | Yemen | 1 |
| Guinea | 2 | | |
| India | 2 | | |
| Madagascar | 2 | | |
| Mauritius | 2 | | |
| Morocco | 2 | | |
| Qatar | 2 | | |
| Afghanistan | 1 | | |
| Antigua and Barbuda | 1 | | |
| Botswana | 1 | | |
| Cambodia | 1 | | |
| Cameroon | 1 | | |
| China | 1 | | |
| Comoros | 1 | | |
| Ethiopia | 1 | | |
| Gabon | 1 | | |
| Gambia | 1 | | |
| Georgia | 1 | | |
| Ghana | 1 | | |
| Iraq | 1 | | |
| Japan | 1 | | |

# Interactive Questions during the webinar

1. **Which actions to strengthen enforcement and control would you consider the most important?**

   **Responses:**
   - Increasing resilience
   - Sustainable practices
   - Workshops
   - Capacity building
   - Accurate PCB inventory and databases, and elimination

2. **Which challenges do you considered the most critical for achieving the 2028 PCB goal?**
   - Skills of the personnel involved
   - PCB disposal
   - Financial constraints
   - Data and reporting
   - Monitoring
   - Political and environmental strategies
   - Financing Requirements
   - Leadership
   - Shipment and transportation of PCBs and wastes

# Questions received (Q) and answered (A)

DISCLAIMER: PCB experts suggest the following answers based on their academic training and professional experiences. Please refer to official materials for legal provisions related to the Stockholm and Basel conventions.

**Q: Incineration generates toxic gases, which contribute to global warming. Are there any other alternatives?**

A: Currently, thermal disruption has an accurate and sophisticated system of filtration. As such, the risk of diffusion of toxic gases is minimal. Any kind of thermal combustion goes to produce carbon dioxide ($CO_2$) or nitrous oxides ($NO_X$), and yeah, it's still a lingering concern, but on the other hand, let's say that the amount of PCB waste and other kinds of extract waste that are burned in this system are quite, lower considering the other kind of combustion sources that we have all around, and especially in Europe.

**Q: Are the PCBs sent outside of the EU for decontamination / disposal - Formally or informally?**

**A:** Officially, there is no transfer of PCB waste out of Europe. From experience, there were some bad practices undertaken by some companies around 3 decades ago, in which companies illegally exported PCB waste to developing countries, such as in Africa, with no proper final disposal methodology. However, currently PCB waste is not exported out of Europe, as, commercially speaking, it is the are in the world in which the prices are the most acceptable compared to other regions.

**Q: Could you explain the support mechanisms that exist for countries struggling to meet their PCB obligations and their goals?**

**A**: The Global Environmental Facility (GEF) is a financial mechanism, and is the main source of funding for recipient countries. To implement the obligations of the conventions, and specifically those related to Chemicals and Waste under the Stockholm Convention, the GEF provides financial support, through implementing agencies. There are 19 implementing agencies, and 10 of them are currently involved in PCB projects.

Through these projects, countries have received financial support to establish national committees, national authorities, develop legislation at the national or the local level, review and update their national inventories and national action plans, develop the phase-out plans, and finally, ensure the environmentally sound disposal. There are also other sources of funding. For example, there is the Special Programme window that countries can utilize to can apply for smaller funds.

Moreover, the Global Framework on Chemicals Fund serves to implement **the objectives and targets of the Global Framework on Chemicals**. Additionally, to develop legislation or aspects related to hazardous waste management, it could impact positively on the way that countries manage PCBs. These are smaller funds that can also support environmental authorities to do their tasks. The Financing presentation further elaborates other possibilities for funding, especially from the private sector and other types of investment.

It is important to note that this is an environmental issue. The responsibility of PCBs is usually, held accountable from the Environmental Authority, but the energy sector, energy authorities and energy utilities, which are the ones who have in their hands, the contaminated equipment are very much responsible. Joint work, taking responsibility from that sector, is, is very important. In addition, investment on electrification, on expansions of the electric grid, also need to be considered, as environmental safeguards and the management of PCBs as well.

**Q: Do you know to what extent countries in Europe are considering other sectors than the Electrical or Energy sector for their PCB management and elimination plans or activities? If so, which are these other sectors?**

A: If you are talking about PCB closed applications I could say that at least in Western Europe the matter was clearly addressed to the Industrial sector that was impacting at least in France or Italy for at least 15-20% on total PCB contamination. They moved slowly at the beginning but then speeded up thanks to need to accreditation for ISO 14001 and ESG. So we can now say industrial sector almost solved in West Europe . The same goes for Eastern Europe, at least for big corporations.

**Q: In the Moldova case, is cross-contamination of transformer oil ever considered.**

**A:** In order to avoid this cross-contamination, or to be sure that there is no cross-contamination, the owners were asked. If the responses included that there was potential cross-contamination, then more samples were taken. It therefore depended on the response of owners, including their knowledge of historical information. On the other hand, other means and knowledge would be needed if that information was not available. For example, in the case of Moldova, the previous inventory was used.

**Q: Do all electronic equipment with winding contain PCB or not?**

**A:** No, only the electronic equipment which have been filled with pure PCB or contaminated by PCBs.

**Q: Did you sample all pieces of equipment, and how many? If no, then what percentage of equipment? How many positive samples were there after screening?**

**A:** There was around 1,000 pieces of equipment. However, as not all equipment could be tested, sampling of up to 300 pieces of equipment occurred, and express tests for around 150 pieces. The Gas Chromatography was selected for around 50-60 samples. When the company had multiple transformers that were similar, samples were at times taken from one or two depending on the equipment. If all transformers (e.g. 3) were different, then samples were taken from all. One should assess, first, the conditions in order to determine the samples. In total, in the Moldova case, around 30% of the equipment was covered.

From that one that was replaced and removed, we took from all of them. We asked the consumers to group them, order them based on the same properties, and we took from only one. For instance, year of productions, properties, capacity, and then we did kind of sampling map, to extrapolate the results for all of them, such as those selected from the GC that exceeded 50ppm, as well as some others contained less than 50 ppm, just to see if the express was right.

**Q: Were the bonds presented equally fit for developing countries?**

**A:** Yes, the bonds are set up to be used in developing country settings. The key issue is to attract private capital to complement grant funding from the GEF, which, is used in GEF recipient countries.

With the work that is being done, and the bonds are there to raise money or translate long-term pledges into money that is available now. The work with that is at the benefit of developing countries, such as **Least Developing Countries** and **Small Island Developing States**, and particularly those are countries and, sectors that have issues in accessing commercial loans that are required to replace transformers.

**Q: Why is treatment technology based on sodium, potassium, and lithium?**

**A**: If you want to chemically destroy or separate the chlorine atom in an organochlorine compound, you need a strong energy port from somewhere. So, either you work with thermal energy, or you need to find a source of extreme exothermic reactions. One of these, has been identified in alkali metals, such as, sodium, potassium, and lithium. The first technology developed was a metallic sodium dispersed in glycerine or a material compound similar to that.

It is true, they are extremely reactive, so they have to be handled with care, and I do not hide that some accidents have occurred across the years in different parts of the world. Either way, the usage of this product has never had such kind of accident in the last 10 years.

Currently, other compounds that are easier to be handled are used, such as potassium-based compounds, glycol, or other compounds. Their weak point is that the reaction elimination or to separate the PCB molecular is slower than using sodium, or other metals.

**Q: Which sector mostly buys the treated oil free of PCB?**

**A:** Through the dechlorination process that is also coupling what's so-called physical conditioning and regeneration, so the oil can be completely recycled as transformer oil. There is also a specific dedicated re-refining process that is producing transformer oil. The transformer oil is an insulating fluid. In the normal column refining process, transformer oil is one of the products that normally is in the outstream. During the usage in the field it could be contaminated by PCB, and so the moment this transformer is back operating without PCB, it can be put again in service.

**Additional Comments:**

There is no single technology to solve a country's PCB issues. Mainly, there is the requirement of a mix of strategy and technical approaches for both PCB phasing-out and elimination of waste. The best strategy and approach would rely mainly on data and information generated from PCB inventory and identification. The data and information must be complete, reliable and valid from which analysis would be made. The results will be the base for selecting and rationalizing management strategy. Further, it may be useful to commence with understanding the pattern of PCB contamination in a country. A manageable and representative survey would do, prior to thorough inventory. This would ensure resources are used effectively and efficiently to make those PCBs visible.

# Regional PCB Webinar Series

Stay informed on all regional PCB webinars held during August and September of 2025 via the **PCB e-Learning Platform**.



**Comments? Questions?**
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