

Government of the People's Republic of Bangladesh
Environmentally Sound Development of the Power Sector with the Final Disposal of Poly
Chlorinated Bi-phenyls (PCBs) Project
Department of Environment
E-16, Agargaon, Dhaka-1207
www.doe.gov.bd

**TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE
AGREEMENT (ISA)**

Name of Project	Environmentally Sound Development of the Power Sector with the Final Disposal of Poly Chlorinated Bi-phenyls (PCBs) Project
Title of assignments	PCB Inventory, Management and Disposal expert
Contract Duration	6 Months (Need Based) 31 December or Upto project period

1. INTRODUCTION:

1.1 General Information

This Terms of Reference (ToR) sets the PCB Inventory, Management and Disposal expert in Bangladesh under the GEF funded project Environmentally Sound Development of the Power Sector with the Final Disposal of Poly Chlorinated Bi-phenyls (PCBs). The project is being implemented by the United Nations Industrial Development Organization (UNIDO) in collaboration with national executing partners Department of Environment.

1.2 Background of the project:

The government signed the Stockholm Convention on Persistent Organic Pollutants (POPs) on 23 May 2001 as a gesture of its commitment to contribute to global environmental protection and sustainable development. The Government of the Peoples of Republic of Bangladesh ratified the Stockholm Convention on March 12, 2007. The National Implementation Plan (NIP) was prepared and transmitted to the Stockholm Convention secretariat on 05 August 2009. The objective of the convention is to protect human health and the environment from Persistent Organic Pollutants (POPs). To meet this objective, the convention sets forth measures intended to lead to the elimination of releases of the listed POPs/PCBs to the environment, as achieved through reduction and phase-out of their production and use and environmentally sound disposed of wastes.

At the time of the preliminary inventory for the NIP in 2007, no facilities for the identification of PCB content in electrical equipment was available within the power sector or government laboratories in Bangladesh. Hence, the PCB content for the inventory was estimated based screening of the equipment. Then PCB inventory team conducted the inventory mainly relying on the information available on the oil drums or transformers. Some field screening test kits may have been used but very limited in number and the adopted method was not a quantitative analysis. Therefore, the inventory of PCB in the country needs to be updated as part of this project.

Electric power transformers, capacitors, lubricating oils etc have been imported to Bangladesh for an unknown period as records were not maintained properly. As manufacture of PCBs banned in 1979, it is possible that their import dates back to this period although most

✍

equipment in use in Bangladesh today was fabricated after the 1970s. The wide spread prohibitions on manufacture, distributions and processing of PCB from the 1980s onward means that older equipment in general is likely to have higher PCB content. However, some equipment imported as recently as 2000 was found during the survey labelled with PCB content. Additionally, the practice of "topping up" the level of transformer oil in electrical equipment with unlabelled or PCB transformer oil means that age of equipment is not, in itself, a reliable indications of PCB content. Therefore, all equipment will need to be sampled and analysed to verify if PCB content or contamination has occurred.

During the National Implementation Plan (NIP) preparation in 2007, environmentally safe management standards for handling, storage and service of PCB equipment were found absent and require further elaboration and appropriate formulation meeting international practices.

The UNIDO delegation's visited in 2013 has confirmed the lack of proper maintenance and storage standards for phased-out or operational electrical equipment. The maintenance and repair of oil transformers is carried out without knowledge about PCB associated risks and potential cross-contamination of new equipment with PCB materials. Given this baseline scenario, it is expected that the contamination of new equipment will commonly take place. In this circumstance, Department of Environment has taken this project with the financial support of global environment facilities (gef) and technical support of UNIDO.

The project components include; component 1: Legal and institutional framework; component 2. Assisting the power sector to develop and implement the environmentally sound management and final disposal plan of PCBs; component 3: Monitoring and evaluation of project results.

In a short term this will have an immediate global impact through the elimination of historic sources of PCBs. Occupational health and safety of those who are engaged in transformer maintenance is also in question. Protective gears are seldom used thus exposure to PCBs could be high. As part of the ESM system, personal safety measures will be taken, thus human exposure to PCBs will be minimized. Through training workshops/seminars/trainings/campaigns the project will significantly increase the knowledge and awareness of workers and managerial personnel on health impact of PCBs. In the GEF alternative scenario, the technical guidance supported by the updated legal framework would be incorporated in the day-to-day management practices among PCB holders as well as supporting private service providers (transformer maintenance companies, oil recyclers, etc.). Consequently, under the scenario, human and environmental exposure to PCBs during handling, maintenance, regeneration, storage as well as disposal stages will be diminished considerably. Moreover, leaks and other emergency incidents could be avoided or minimized by clear company-wise plans for leak containment and actions in case of emergencies involving PCB containing material.

As a response to these priorities, in a direction to comply with the Stockholm Convention requirements towards the PCB issue, the POPs National Implementation Plan defines specific action plans, i.e. priority projects related to the PCB management:

- National POPs Management Capacity Building Project, with objective to create and maintain an ongoing infrastructure for POPs implementation (analytical and research and monitoring capacity);

- Awareness and Raising Programme, with objective to raise awareness of POPs problems in the country and to mobilize stakeholder and political support for finding and implementing solutions;
- Improvement of Existing Legal Framework on POPs, with objective to set out a strategy for the sound management of chemicals (including POPs) in Bangladesh;
- Management and Implementation of PCBs Phase-out, with objective to prepare a national strategy for the safe management and phase-out of all PCB uses in Bangladesh and assure their safe destruction;
- Environmentally Sound Management of Ship-breaking, with objective to prepare a national strategy for environmentally sound ship-breaking in Bangladesh;
- Environmentally Sound Management of Contaminated Sites, with objective to reduce the risk of exposure to humans and the environment through identification and remediation, as warranted, of contaminated sites;
- Environmental Monitoring of POPs, with objective to build capacity for research and monitoring of POPs and POPs alternatives in Bangladesh;

1.3 Objectives of the project

The main objective is to protect the human health and the environment from the PCB adverse effect by reducing and/or eliminating the releases and exposure to PCBs through establishment of an environmentally sound PCB management system.

Particularly, the framework of the project foresees the following outcomes:

Outcome 1: Legal and Institutional Framework and capacities established and upgraded for POPs, particularly ESM of PCB contaminated equipment, oil and waste.

Outcome 2: Power sector continues to implement the developed environmentally sound management and PCB final disposal plan in a sustainable manner.

Outcome 3 : Impact monitoring and evaluation of project results.

2. Scope of assignment of PCB Inventory, Management and Disposal expert

Currently, Department of Environment is implementing Environmentally Sound Management Development of the Power Sector with Final Disposal of Polychlorinated Bi-phenyls (PCBs) project. The 07 organization power sector Bangladesh Power Development Board (BPDB), Power Grid Company Bangladesh (PGCB); Bangladesh Rural Electrification Board (BREB), Dhaka Power Distribution Company Limited (DPDC), Dhaka Electric Supply Company Limited (DESCO) and Western Zone Power Distribution Company (WZPDCI) working associated implementing partner of the project. To complete detailed inventory of PCB inventory in Bangladesh 10,000 electrical equipment's have to be screened through PCB test kit.

In the meantime, 07 organization of power sector conducted 6500 PCB screening and rest of 3500 PCB screening will be conducted UNIDO recruited vendor. In time time, 796 PCB suspected transformer oil tested by Gas chromatography and 37 transformers identified as PCB contaminated. From technical development partner of the project UNIDO hired contractor for PCB contaminated transformers and transformer oil export for PCB disposal purpose. PCB inventory, Management and Disposal Expert need to be engaged to perform following activities;

✓

Activities:

- a. Finalize the draft PCB management plan based on stakeholder consultation workshops, with support from the project's international consultant.
- b. Conduct training on the PCB screening test kit (Sea Marconi test kit) use for the 2nd phase screening vendor.
- c. Monitor the 2nd phase of the PCB screening program.
- d. Prepare the final PCB inventory report.
- e. Develop a brief Bangla version of the PCB management guidelines, conduct three training sessions on PCB management, and prepare a training report.
- f. Update the PCB inventory database with support from the power sector organization.
- g. Conduct three training sessions on PCB decontamination and prepare a training report.
- h. Monitor the both shipment of PCB-contaminated transformers and transformer oils.
- i. Develop a sustainable business plan for PCB management including technical strategies.
- j. Prepare final PCB disposal report.
- k. Perform any other related tasks assigned by the project director.

Deliverables:

- a. Final version of PCB management plan;
- b. Training report on PCB screening test kit use;
- c. PCB 2nd phase PCB screening monitoring report;
- d. Final PCB Inventory report;
- e. Bangla version of PCB management guideline and training reports of PCB management guideline;
- f. Report on update the PCB inventory database
- g. Reports on PCB decontamination training;
- h. Monitoring shipment of PCB-contaminated transformers and transformer oils.
- i. Final version sustainable business plan on PCB management including technical strategies;
- j. Final report of PCB disposal.

REQUIRED COMPETENCIES***Core values:***

1. Integrity
2. Professionalism
3. Respect for diversity

Core competencies:

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation
6. Organizational development and innovation



Managerial competencies (as applicable):

1. Strategy and direction
2. Managing people and performance
3. Judgment and decision making
4. Conflict resolution

1. Qualification & experience required

- a) At least graduate degree in chemistry, chemical /electrical/ mechanical engineering or environment or sciences.
- b) At least 10 years' experience in environment field including 02 years POPs/ PCB or hazardous waste management;
- c) Extensive experience in POPs/ PCB screening/ waste identification will be get preference;
- d) Familiarity with UN/GEF procedures, documents and requirements for project implementation.
- e) Proficiency in English language.
- f) Computer skills.


(মোস্তাফিজ হোসেন হাতিবুর রহমান)
স্বাক্ষরকৃত
পরিচালকের কার্যালয়, জাতীয় পরিবেশ সঞ্চয়ালয়
সংগ্রহণের কার্যক্রম, কিশোরগঞ্জ জেলা পরিবেশ অফিস
পরিবেশ অধিদপ্তর ঢাকা।