

**PROJECT INFORMATION DOCUMENT (PID)  
APPRAISAL STAGE**

Report No.: AB5739

<b>Project Name</b>	PCB Management Project
<b>Region</b>	AFRICA
<b>Sector</b>	General energy sector (35%);Petrochemicals and fertilizers (30%);Power (20%);Other industry (15%)
<b>Project ID</b>	P113173
<b>GEF Focal Area</b>	Persistent Organic Pollutants
<b>Borrower(s)</b>	FEDERAL GOVERNMENT OF NIGERIA
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<b>Implementing Agency</b>	
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<b>Environment Category</b>	<input type="checkbox"/> A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined)
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1. Country and Sector Background

1. **Background: Persistent Organic Pollutants (POPs):** POPs are a set of toxic chemicals that are persistent in the environment and able to last for several years before breaking down. POPs circulate globally and chemicals released in one part of the world can be deposited at far distances from their original source through a repeated process of evaporation and deposition. This makes it very hard to trace the original source of the chemical.

2. POPs are lipophilic, which means that they accumulate in the fatty tissue of living animals and human beings. In fatty tissue, the concentrations can become magnified by up to 70 000 times higher than the background levels (bioaccumulation). As they move up the food chain,

concentrations of POPs tend to increase so that animals at the top of the food chain such as fish, predatory birds, mammals, and humans tend to have the greatest concentrations of these chemicals, and therefore are also at the highest risk from acute and chronic toxic effects.

3. In 1995, the United Nations Environment Programme expanded its research and investigation on POPs with an initial focus on what became known as the “Dirty Dozen”. These were a group of 12 highly persistent and toxic chemicals: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, polychlorinated biphenyls, polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans, and toxaphene.

The fourth Conference of the Parties (COP-4) of the Stockholm Convention on Persistent Organic Pollutants (POPs) in 2009, reached consensus to add nine new POPs to the treaty’s original “Dirty Dozen.”

4. The nine added include: Alpha hexachlorocyclohexane (unintended by product of lindane manufacture), Beta hexachlorocyclohexane (unintended by product of lindane manufacture), Commercial octaBDE - hexabromodiphenyl ether and heptabromodiphenyl ether – (used as a flame retardant), Commercial pentaBDE - tetrabromodiphenyl ether and pentabromodiphenyl ether - (used as a flame retardant), Chlordecone (an agricultural pesticide), Hexabromobiphenyl (a flame retardant), Lindane (used in creams for treatment of head lice; previously used in agriculture - “specific exemption” for pharmaceutical use to control head lice and scabies), Pentachlorobenzene (used as a dyestuff carrier, fungicide, and a flame retardant), and PFOS perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride.

### **PCB Issues:**

5. Polychlorinated biphenyls (PCBs) are a class of organic compounds with 1 to 10 chlorine atoms attached randomly to two phenyl rings. Originally manufactured in 1881, PCBs were found to be fire-resistant, stable, and non-conductive to electricity and with low volatility under normal conditions. These characteristics made them ideal for many industrial applications and consumer products, beginning in 1929, but predominantly used between 1950 and late 1970s. Most well known is the use of PCBs for dielectric fluid in electrical equipment, from large transformers to small capacitors in lighting fixtures. Industries used PCBs extensively as heat transfer fluids and as coolants for high temperature processes. PCBs were also used in hydraulic fluids, surface coatings, carbonless copy paper, as plasticizers in sealants, caulking, synthetic resins, rubbers, paints, waxes and asphalts and as flame retardants in lubricating oils.

6. Due to toxicity characteristics and classification of PCBs as Persistent Organic Pollutants (POPs), their production was banned globally in early 1980s. They are one of the 21 classes of POPs which, due to their potential damage to human health and the environment, are targeted for elimination by the 2001 Stockholm Convention on Persistent Organic Pollutants. Probable health effects associated with PCBs include cancer, reproductive and development toxicity, impaired immune function, effects on the central nervous system, and liver changes. Detailed information on human, ecological and economic costs of known incidents of exposure to PCB-containing oils is discussed elsewhere in this document.

7. Entered into force on May 17, 2004, the Stockholm Convention requires its parties to submit a National Implementation Plan (NIP) to the Conference of the Parties within two years after ratification of the Convention by the country. For PCBs, it requires all Parties to eliminate the use of PCB-containing equipment by 2025 and to make determined efforts to have liquid PCBs and equipment contaminated with PCBs subject to environmentally sound waste management as soon as possible, but no later than 2028. Before 2025, the Convention does allow all Parties to use PCBs in intact and non-leaking equipment in areas where the risk from environmental release can be minimized and quickly remedied. However, no PCB-containing equipment should be used in areas close to human food or animal feed production and processing facilities. Special measures apply for any use of PCB-containing equipment in populated areas, including near schools and hospitals.

8. Nigeria signed the Stockholm Convention on May, 2001, ratified it on May 2004, and submitted its NIP to the Stockholm Convention in April 2009. Twenty-Three areas of action were identified as Priorities for Nigeria in meeting its obligations. PCB inventory and treatment was listed as Priority No. 1 (inventory, remediation and treatment of areas polluted with POPs) and disposal options were listed as Priority No. 9 (Disposal of obsolete pesticides, PCBs and equipment contaminated with PCBs).’

### **Country Situation**

9. Nigeria was never known to produce PCBs; however, between late 1940s and early 1980s, the country imported a good number of PCB-containing equipment such as transformers, capacitors, ballasts, and of paint additives, hydraulic fluid additives, etc. PCBs were used as an additive in dielectric fluids and functioned mainly as insulating oil for electrical and hydraulic equipment. However, the most predominant use of dielectric fluid was in electrical equipment where the weight of oil in one single power transformer may have been thousands of kilograms. The Power Holding Company of Nigeria (PHCN) is by far the largest consumer of di-electric fluids and major owner of equipment that potentially contain PCBs. Other possible significant users of equipment that potentially contains PCBs are private electrical generators, major industrial facilities, oil refineries, textiles and cement industries.

10. Subsequent to signing the Stockholm Convention in 2001, the Federal Government of Nigeria requested and received financial assistance from the Global Environment Facility (GEF) through the United Nations Industrial Development Organization (UNIDO). The sum of US\$499,000 was approved as grant under the GEF POPs Enabling Activity (EA) to finance the preparation of the country’s NIP. However, given the size of the country, level of economic development and structural complexity of the government, and taking into account the amount of GEF resources available, the level of detail that could have otherwise been expected from these initial inventories was inadequate.

11. The UNIDO proposed PCB inventory was completed, but with skeletal information as to the volume of PCB stocks and the numbers of PCB-containing equipment that are physically available. Majority of the data compiled by the project were provided by 10 PHCN transmission stations in six states of the North Central Zone and in the Federal Capital Territory (FCT). The

report did not provide any indication as to why those particular states were selected or whether they are representative of the national context. In addition, no information was included regarding privately owned equipment. In the report, only 22 transformers were identified, most of which range in ages from 15 to 30 years. No standardized testing was conducted on the transformer oils to ascertain the presence of PCBs. No data regarding other types of PCB-bearing equipment such as capacitors were included in the report. Insufficient information was presented on PCB spills, PCB contaminated soils and groundwater and PCB stocks at some of the transmission stations.

12. As a gesture of firm commitment to the Convention, in 2008, the Nigerian Government undertook a more refined PCB evaluation in the electric power generating, transmitting and distributing facilities spread across 10 states out of 36 states. The financial support to the amount of 250,000 Canadian Dollars from the World Bank's executed Canadian POPs Trust Fund was applied to project. It was estimated that the project captured about 10% of potentially contaminated electrical equipment in the power sector. Subsequently, based on field observation, the project team made the following conclusions:

- Over 80% of the equipment surveyed was manufactured after 1980. Therefore, the installed capacity of the country will not need replacing until about 2020.
- PHCN is the greatest user of dielectric fluid in Nigeria.
- Awareness about PCB use in transformer oil is very low and consequently there is lack of proper procedures in its handling, storage and disposal.
- Based on the screening test results performed on oil samples collected from 281 transformers, it was found that:
  - ☞ Eleven (24%) of the transformers manufactured before 1980 were chlorinated;
  - ☞ Eight (15%) of the transformers manufactured between 1981 and 1990 were chlorinated, and
  - ☞ Eighteen (13%) of transformers manufactured after 1990 were chlorinated.
- The total amount of PCB-contaminated waste in Nigeria is estimated to be 3,400 tonnes.
- Off-line equipment identified during the inspection as “scrap” or unserviceable contained 144 tonnes of oil, 220 tons of metal scraps and 30 tonnes of “cellulosic materials” such as paper wrappings and lumber supports, all likely PCB-contaminated.

13. As follow up to this study, the Canadian Trust fund on POPs financed another study in 2009 called the Location and Assessment of the Status of PCB containing equipment in all Power Holding Company of Nigeria (PHCN) facilities. This second study has among others the following findings:

- ③ That high levels of PCB contamination exist within and around surveyed and assessed PHCN facilities; and that there is poor management of potentially PCB contaminated wastes in many PHCN facilities across Nigeria. Ijora Power station B in Lagos State was adjudged the most environmentally insecure facility surveyed.
- ③ There is a very low knowledge pathway (< 90%) on the full concept of PCBs among PHCN workers. This finding was quite alarming since it portrayed that personnel who played a daily role in transformer oil retro-filling, filtration, recycling and

storage were quite oblivious to the hazardousness of PCB contaminated equipment and oils.

- ③ It was also found in the course of field work that the act of “top-up” of smaller transformers with dielectric oil from larger capacity transmission and generating transformers (no longer with the dielectric strength for these) without any tests for PCB is routinely carried out. This has the potential to occasionally result in the contamination of a non-PCB containing transformer with oil from a PCB-containing one.
- ③ The constant use of disused transformer oil as fuel for burning (cooking, roasting of animal hides, burning of farm lands, etc.). Other uses to which transformer oil were subjected to include direct use as creams by some personnel working in some PHCN facilities and by members of the public; and in the treatment of head lice, eczema and various skin dermatosis; as well as weed killer in farms.

### **The Main Sector Issues to be addressed by the Project**

14. The PCB studies undertaken with the assistance from the Canadian Trust fund on POPs and facilitated by the World Bank in 2008 and 2009 presented the following recommendations with a view to better manage the handling, storage and disposal of PCBs and PCB-contaminated equipment in Nigeria and bring Nigeria into full compliance with the Stockholm Convention in eliminating PCBs by the year 2025:

- A comprehensive and expanded PCBs Inventory covering the entire country and all users of dielectric fluids is imperative. This could be done as a PHCN practice for new and older transformers under their control. PHCN maintenance practices may have resulted in the cross-contamination of newer transformers. Maintenance records of transformers should be checked and a sampling strategy set-up to identify whether some transformers have been cross-contaminated.
- While field screening kits are an effective method for testing PCB-containing equipment, the results need to be verified by more refined laboratory analysis. The analysis should be performed by a commercial environmental laboratory with experience in analyzing oil samples for the presence of PCBs.
- The Government should develop and implement a regulation that is specific to PCBs and PCB-bearing equipment with respect to control, use, handling, storage and disposal.
- Once the Government of Nigeria has implemented PCB management regulations, all the affected sectors can initiate gradual drawdown on their PCBs and PCB-containing equipment, which will ultimately lead to final disposal.
- While it is acknowledged that 80 % of the transformers in use in Nigeria still have significant useful life, those contaminated with PCBs may be disposed of in advance of the Stockholm Convention timeline requirements if they are found to be posing risks to humans and/or the environment.
- The removal of transformers with PCB-containing oil should be prioritized especially for those located within sensitive areas such as hospitals and schools or those located near sensitive environmental receptors such as lakes and rivers.

- Mandatory testing should be implemented for PCB content of oil samples from electrical transformers purchased by private individuals before the transformer is connected to the PHCN grid and energized.
- A tracking system should be developed to monitor the movement of all electrical equipment containing PCB-contaminated oil.
- The awareness of electrical utility workers and managers as well as the general public needs to be improved with respect to PCBs. The awareness training should incorporate the basis of established protocols for handling, storage and disposal of PCBs and PCB contaminated wastes.
- Establishment of institutional controls (interim controls), implemented to control exposure to contaminants and reduce risk to humans and the environment until risks can be reduced to acceptable levels by other management options - (There are four general categories of institutional controls: government controls; proprietary controls; enforcement tools with institutional-control components; and informational devices).
- PHCN technical personnel especially in the transformer repair facilities should be made to stop disposal and pouring of oils on the ground and into water bodies. Further, there is need for the procurement and provision of analytical capabilities in PHCN facilities for the screening of PCB in transformer oil.
- Interim storage of potentially PCB-containing equipment and oil in PHCN facilities should be done in accordance to pertinent safeguards.
- There is an urgent need for an awareness creation and training program for all administrative and technical personnel in all generating, transmission, distribution and work shop facilities of PHCN all over the country on PCB, and its environmentally sound management. Furthermore, PHCN technical personnel especially in the transformer repair facilities should be made to stop disposal and pouring of oils on the ground and into water bodies
- There are also other industries within the private sector that potentially deal with large quantities of PCBs and PCBs containing materials and equipment, these industries include: Airports; Cement and asphalt mixing; Disinfectants manufacturing; Fire chemicals; Fertilizer blending; Pharmaceuticals manufacturing; Rubber processing; Dockyards; Metals manufacturing, refining and finishing; Oil refineries and bulk storage of crude oils and petroleum products (depots); Pulp and paper; Garages and gasoline stations; Textile works; Sewage works and sewage farms. At present, there has not been a concise assessment of the quantities of PCBs, and PCBs containing materials and equipment in these private entities. There is a need for the identification and inventory of the PCBs stockpiles in the private sector of the economy, and to ensure that they are managed in an environmentally sound manner together with those in PHCN holdings.
- Long-term monitoring and evaluation of potentially PCBs-contaminated sites should be conducted to determine the levels of risk they pose and accordingly the management approach, evaluate the effectiveness of the chosen management option, and ensure adequate, continuous protection of humans and the environment.
- There is a need for the construction of facilities for temporary storage of PCB-containing waste (including suitable drums and steel trays) in PHCN facilities.
- The Africa Stockpiles Project managed by the World Bank and implemented by the Federal Ministry of Environment is tackling the issues of obsolete POPs pesticides stocks and POPs pesticides contaminated sites in the country. The proposed project is expected

to draw lessons from the project and help improve in-country capacity for the management of POPs in general. The upgrading of laboratory facilities in the project is targeted at the laboratories not only analysing PCBs, but also, other POPs chemicals such as Aldrin, Lindane, Mirex, Hexachlorobenzene, Heptachlor, etc .

15. Building on all the above recommendations, the principal objective of this project is to assist Nigeria in its stated goals in managing its stockpile of PCBs wastes and contaminated equipment in an environmentally sound manner as contained in its National Implementation Plan (NIP). It will also, endeavor to key the project into other on-going POPs management activities in the country and enhance national capacity for the identification, analysis and environmentally sound management of other POPs including pesticides, and unintentional POPs.

16. The proposed project is set to improve public health and environmental quality by preventing the environmental release of PCBs from active and decommissioned electrical equipment in PHCN facilities and from other private sector (oil refineries, airports, textile mills, etc) activities that have PCBs stocks, so as to ensure their sound management and ultimate safe disposal.

17. The specific objective is to develop infrastructure and human capacity for environmentally sound management of PCBs in particular, and other POPs in general. The main outcomes of the project will include (i) increase awareness among key stakeholders and the general public, (ii) improved regulations, (iii) enhanced physical facilities management of PCBs and PCB-containing equipment, and (iv) improved national capacity to manage PCBs in particular and all other POPs in an efficient and environmentally sound manner.

## 2. Objectives

18. The project development objective (PDO) is to:(a) Build a national framework for Persistent Organic Pollutants ( POPs) Management and storage ; (b) Pilot the disposal of Polychlorinated Biphenyls (PCBs). To track progress towards the PDO, the key indicators of this project are: a) Quantity of PCBs identified, labeled, safely transported and stored; and b) Number of Federal and State agencies adopting Best Available Technology (BAT) and Best Environmental Practices (BEP) in the management of POPs and PCBs.

19. The project will contribute to both global and national objectives. At the global level, the project will assist Nigeria in meeting its obligations under the Stockholm Convention and contribute to global efforts to control toxic chemicals in general, eliminate/reduce POPs releases to the environment, and manage PCBs wastes and PCB-contaminated equipment, in an environmental sound manner until their final disposal is feasible. On the national level, it will support the implementation of the NIP, National Strategy for Environmental Protection, the Federal Government's seven point agenda and vision 2020 with special attention to pollution prevention, abatement, remediation and management theme. It will also contribute to the Federal Ministry of Environment's ongoing efforts to reduce the risks to human health and ecosystem integrity from industrial pollution and improve its capacity and performance in Solid and Hazardous Waste Management. In addition, Nigeria currently has no legislative framework and only

limited professional capacity for managing PCBs. The project will establish the needed framework, demonstrate technology options, and undertake the training required to managing PCBs in order to reduce environmental and health risks associated with PCBs and PCB-containing equipment.

### 3. Rationale for Bank Involvement

20. The Federal Government of Nigeria recognized the environmental and health threats posed by POPs at an early stage and fully participated in the negotiations leading to the Stockholm Convention. It was a signatory in 2001 and ratified the Convention on May 24, 2004. The proposed project is consistent with the Government policy documents: the seven point agenda and vision 2020 with special attention to pollution prevention, abatement, remediation and management theme.

21. The project will support some of the national priority actions called for in the NIP, i.e. comprehensive PCB inventory and some of the recommendations of the recently concluded studies: Baseline National Inventory of PCBs and PCB-containing equipment in Nigeria; and the Location and Assessment of the status of PCB containing equipment in Power Holding Company facilities all over Nigeria undertaken with support from the World Bank executed Canadian Trust Funds on POPs. It will also, key into other on-going POPs management activities in the country and enhance national capacity for the identification, analysis and environmentally sound management of other POPs including pesticides, and unintentional POPs.

22. Previous activities in the inventory and management of PCBs in the country have not taken cognisance of PCBs stockpiles holdings in the private sector of the Nigerian economy. The project will identify and integrate the private sector sources of PCBs wastes and PCBs containing equipment into the full PCBs inventory and management; to ensure the continuing minimization, and ultimate elimination of POPs producing processes; and to ensure sound management and safe disposal of POPs stockpiles (including PCB and PCB-containing equipment).

23. The Bank as a GEF implementing agency has a responsibility to help its client countries achieve the global environmental objectives that are supported by the international conventions and by the GEF. The Bank has been very active in supporting Nigeria in addressing environmental challenges and recently completed two studies on PCBs and PCB-containing equipment supported with financial assistance from the Canadian Trust fund on POPs.

24. The proposed project is well aligned with the second Country Partnership Strategy (the Bank's CAS) under the pillar of achieving sustainable and inclusive non-oil growth especially as limited institutional capacity for pollution risk assessment, prevention and remediation was identified as a major issue and obstacle.

25. The Bank's long-standing and broad involvement in the power sector in Nigeria allows for synergies to be developed. For example, the ongoing Nigeria Energy and Gas Improvement (NEGIP) project co-funded by World Bank will benefit from the design of this project to help properly manage transformers and capacitors. NEGIP involves the following: (i) Rehabilitation and reinforcement of aging transmission stations; (ii) Rehabilitation



of existing power transformer workshop; (iii) Rectification on switchyard deficiencies and malfunctioning in transmission stations; and (iv) Re-enforcement of distribution networks to increase electricity supply. NEGIP overall objectives will most likely involve the decommissioning and replacement of PCB-contaminated equipment, and the disposal of PCB wastes, either through the project directly or indirectly.

26. It is therefore critical that the Government, through the FMEnv, PHCN and other relevant stakeholders, is adequately prepared to handle the sound management of all PCB contamination, such that they can assist in the removal and PCBs, guaranteeing that no additional risks to human health and the environment are taken. The proposed GEF project is therefore very timely, as it will focus primarily in strengthening the Government's capacity for PCB management, ensuring that appropriate measures are taken, consistently throughout the country, as the power sector reform and the NEGIP are carried out. In that sense, the proposed GEF project is fully complementary and will directly support the objectives of the NEGIP. Coordination between the NEGIP and the GEF projects will be enhanced to ensure that capacity building and safeguards efforts are not duplicated, and that all activities are being carried out according to the new PCB/POPs management regulations that will be developed in the upcoming years.

27. The Bank's technical knowledge on POPs management and its experience in the design and implementation of GEF projects give it a comparative advantage among the GEF Implementing Agencies in providing this assistance. Specifically, the Bank's experience in the preparation and implementation of GEF funded POPs/PCB management projects in China, Moldova, Vietnam, and Philippines, as well as the African Stockpiles Project (ASP), gives it an edge over other agencies.

#### 4. Description

28. The project consists of four major components. Annex 4 provides a detailed description of the components.

***Component 1: Capacity Building for POPs and PCB Management (2,106,078 USD: GEF: 1,179,754 USD, Government, 926,324 USD):*** This component aims to strengthen the government's capacity to manage, monitor, control POPs and also ultimately phase out the use of PCBs. Activities under this component will include a comprehensive review of current hazardous waste management regulations, and the development and incorporation of a new regulatory framework that will specifically address POPs in general, and PCBs in particular. The component will also contain a communication strategy and address the issue of training and awareness (including stakeholders workshop), and will involve the preparation and dissemination of training materials including TV programs/documentaries, posters and the production of brochures/pamphlets for the purpose of raising awareness on PCBs and other POPs issues.

***Component 2: Design, Development and Implementation of Environmentally Sound Management (ESM) for on-line and off-line electrical equipment (9,419,396 USD: GEF 3,273,208 USD, Government 6,146,188 USD):*** This component will involve series of investment activities that will provide the government with the enabling capacity to handle

PCBs, other POPs chemicals and hazardous chemicals in the future. This component will lean heavily on a small technical team at PHCN that will assist the PMU implement the various sub-components that consist of:

a) Adaptation within the context of Nigeria of the various procedures, manuals, management protocols and guidelines for the identification and management of PCBs, PCB-containing or PCB-contaminated equipment and wastes that have already been prepared by UNEP and the Secretariat of the Basel Convention. The sub-component will also entail labeling of all identified PCB containing electrical equipment and wastes so as to ensure good maintenance practices;

b) Identification and upgrading of laboratories for analyzing PCBs and other POPs in oils, water and soil samples. Activities under this component will assess the capacities of the existing laboratories in analyzing PCBs and other POPs chemicals, and determine with a view to selecting appropriate in-country analytical techniques. This component will also entail training on new testing procedures and some purchases of upgrade equipment.;

c) Identification and possible enhancement of interim storage locations - This will involve identification and enhancement of storage locations that will safely handle PCB wastes and PCB-containing equipment to prevent the release of such wastes into the environment. These facilities will be used to store decommissioned PCB-containing equipment and PCB wastes in an environmentally sound manner. As treatment and final disposal of PCB containing materials are not considered as part of this project, existing locations like the Ijora workshop in Lagos and sub-stations at Kontagora, Kaduna, and Oji River will be assessed for their suitability as interim storage locations;

d) Government will monitor these storage locations and will fund one pilot disposal process using kilns offering a temperature of about 1300 # 1500 degrees centigrade suitable for PCB destruction with limited or no production of dioxins and having state of art pollution control systems. A locally available Kiln that was used by British American Tobacco (BAT) to dispose PCB contaminated transformer oil is the West African Portland Cement (WAPCO), Sagamu. This and other kilns are planned to be used by Government for the pilot disposal

***Component 3: Baseline national inventory of PCBs and PCB -containing equipment and development of a national PCB management plan (4,871,148 USD: GEF 1,373,197 USD, Government 3,497,951 USD):*** This component will be built on the recently conducted partial PCB inventory that covered 10 states out of the 36 states and the Federal Capital Territory. Activities under this component will include the establishment of a data base for PCB containing equipment and wastes in 15 additional states and the development of comprehensive methodology for conducting inventories. The inventory will also cover sampling and testing of potentially contaminated equipment owned by the private sector. The outcome of this inventory will provide a clear picture on the extent of PCB contamination across the country. Based on the outcome of this inventory, a long term PCB management plan will be developed. As PCB inventory is a bit of a living database, the project will make it possible for the government to complete, maintain and update it until final decommissioning of the last contaminated piece of equipment. Under this component the government capacity to carry out an inventory, and

update/revise the existing one will be built; and government will apply the methodology to cover the remaining 11 states and the Federal Capital territory in the future.

**Component 4: Project Management and Monitoring and Evaluation – (2,103,377 USD: GEF 473,841 USD, Government, 1,629,536 USD):** This component will be built on the recently conducted partial PCB inventory that covered 10 states out of the 36 states and the Federal Capital Territory. Activities under this component will include the establishment of a data base for PCB containing equipment and wastes in 15 additional states and the development of comprehensive methodology for conducting inventories. The inventory will also cover sampling and testing of potentially contaminated equipment owned by the private sector. The outcome of this inventory will provide a clear picture on the extent of PCB contamination across the country. Based on the outcome of this inventory, a long term PCB management plan will be developed. As PCB inventory is a bit of a living database, the project will make it possible for the government to complete, maintain and update it until final decommissioning of the last contaminated piece of equipment. Under this component the government capacity to carry out an inventory, and update/revise the existing one will be built; and government will apply the methodology to cover the remaining 11 states and the Federal Capital territory in the future.

#### 5. Financing

Source:	(\$m.)
BORROWER/RECIPIENT	12.2
Global Environment Facility (GEF)	6.3
Total	18.5

#### 6. Implementation

29. **Financial partnerships:** The Global Environment Facility (GEF), as the interim financial mechanism for the Stockholm Convention, will provide one-third of project funds. Co-financing will come from the Federal Government of Nigeria.

30. **Coordination among project partners and other stakeholders:** PCBs/POPs issues are been looked at in Nigeria by a number of donors including, FAO, UNIDO, and CIDA. The PMU will look at these various donors' activities in order to achieve synergy with the proposed project. The Federal Ministry of Environment (FMENV) being the designated focal agency for the implementation of the Stockholm Convention in Nigeria will be the lead implementing agency. Coordination among the various government agencies, partners and NGOs involved with PCBs management will be undertaken through the formation of an Inter-ministerial Steering Committee. The details are outlined in the implementation arrangements below.

31. **Policy and Overall Project Direction:** The Federal Ministry of Environment (FMENV) has been designated as the national implementing agency for all POPs activities and implementation of the POPs convention. The FMENV working with associated ministries and key stakeholders will create an Inter-ministerial Steering Committee (ISC) and a Technical Committee (TC). The ISC will be chaired by the Minister of Environment (or his representative) and its members will include the

ministers (or representatives), heads of agencies and organizations of concerned ministries, agencies and organizations. The ISC will provide overall guidance and direction in implementing the project, particularly regarding inter-ministerial coordination, policy development, and inter-ministerial pronouncements related to the project. The TC will be composed of senior technical staff from the ISC members and will be chaired by the Director of Pollution Control and Environmental Health Department (PCEHD). The TC will provide technical guidance to the project, including reviewing outputs and recommendations.

32. **International Implementing Agency:** The World Bank is the international implementing agency for the project. The World Bank will be responsible for supervising implementation of all project activities specified in this project document along the lines of the following:

- a. Supervising overall project progress;
- b. Carrying out supervision missions;
- c. Helping Nigeria to set up an operating mechanism to allow effective and transparent implementation of the project;
- d. Ensuring that disbursements made to Nigeria are based agreed disbursement procedures;
- e. Vetting the financial management system of the project to ensure that it complies with international standards of accounting;
- f. Ensuring that procurement arrangements are carried out based on agreed procurement procedures;
- g. Providing Nigeria with the necessary policy, management and technical support; and
- h. Reporting to GEF on the project progress.

33. **Overall Project Operation and Coordination:**

34. **National Implementing Agency:** FMENV through the PCEHD will be the national implementing agency for the project. Its responsibilities will include (1) assignment and supervision of project activities; (2) providing direction to the PMU; and (3) coordination with stakeholders, including GEF, donors and relevant domestic ministries and agencies.

35. **Project Management Unit (PMU):** The PMU for this project which will be supervised by the FMENV will carry out the usual project management functions of financial management, procurement, auditing, managing, monitoring and evaluation, project implementation, and dissemination of project results.

36. PCEHD-FMENV will work closely with other agencies to implement the project. The concerned agencies and organizations include the following:

- Chemicals, Environment and Resettlement (CR&E) Division of the Power Holding Company of Nigeria (PHCN)
- Chemical Safety Department of the Federal Ministry of Health
- National Agency for Food and Drug Administration and Control (NAFDAC) of the Federal Ministry of Health
- The Customs and Excise department of the Federal Ministry of Finance

- (iii) Factory Inspectorate Division of Federal Ministry of Labour and Productivity
- National Environmental Standards Regulation and Enforcement Agency (NESREA)
- The private sector (electrical companies, oil companies and suppliers and distributors of electrical equipment)

## **7. Sustainability and Replicability**

37. As a party to the Stockholm Convention, Nigeria is obligated to identify, manage, and dispose of PCBs and other POPs in an environmentally sound manner by 2025. The proposed project supports activities identified under the Nigeria National Implementation Plan (NIP) that was submitted to the Convention in April 2009. PCB and other POPs inventory were listed as number one priority in the NIP. In this light, the project will follow the lines as explained in the NIP, especially on the inventory of PCBs, PCB-containing equipment and wastes and the development of a PCB Management Plan.

38. The project's component on capacity building is designed to create awareness of PCBs issues in particular and POPs in general. It will also entail the development of strategies, regulations and legal mechanisms. Ministries, agencies and the private sector involved in this project will also help ensure the dissemination of relevant information. Thereby, ensuring ownership and sustaining participation in and contribution to agenda during and after the project.

39. As a gesture of firm commitment towards environmentally sound PCBs management, in 2008 and 2009, the Nigerian Government undertook a more refined PCB evaluation in the electric power generating, transmitting and distributing facilities spread across 10 states out of 36 states; and also to identify the location and nature of PCB-containing equipment in PHCN facilities. These studies were financed with the assistance of the World Bank through financial support from Canadian Trust Fund on POPs. This will be well developed and extend to cover most of the states in Nigeria.

40. The proposed project will build upon other related and ongoing POPs projects. These include: (a) the National Implementation Plan which was submitted to the Stockholm Convention in April 2009; (b) the African Stockpiles Project (ASP); (c) the UNDP's less Burnt for a Clean Earth: Minimization of dioxin emissions from open burning sources in Nigeria; (d) the UNEP's regional project on Supporting the implementation of the Global Monitoring Plan of POPs in West Africa; and (e) UNIDO's regional project on Developing Appropriate Strategies for Identifying Sites Contaminated by Chemicals listed in Annexes A, B and/or C of the Stockholm Convention. Already some of these projects have provided useful information which has been used in the development of the project, in particular to avoid repetition of activities and components.

41. The project does not seek to introduce a new approach to PCBs/POPs management, but use and possibly adapt well tested methodologies and established models from the experience of other countries. The project further seeks to ensure

replicability by including a component on inventory of PCBs and PCB-containing equipment and development of a national PCB management plan. This component will adapt the methodology used for the partial inventory (financed by the Canadian Trust Fund on POPs in 2008) of 10 states to cover an additional 15 states. It is expected that the government whose capacity will be built during the inventory will replicate this to cover the rest of 11 states in nearest future. Participating ministries, agencies and the private sector will help ensure the dissemination of information and the project's website will make its results available, as well as providing access to new information on PCB management and interim storage concerns.

## 8. Critical Risks and possible controversial aspects

<b>Risk</b>	<b>Risk Mitigation Measures</b>	<b>Risk Rating</b>
<b>To the project development objective</b>		
Delays in promulgation, adoption, and timely implementation of regulations and policies	The Federal Ministry of Environment have already initiated capacity building initiative in drafting legislations across all concerned ministries and agencies concerned with POPs and PCBs in particular. The Ministry recently held a workshop on harmonization of various legislations on chemicals	M
Lack of awareness and appreciation of POPs issues in General and PCBs in particular among decision makers, PHCN technical staff and government agencies.	The project includes a capacity building component including a communications strategy that will ensure that decision makers and PHCN technicians are aware of the harmful effects of PCBs. Government agencies and the general public will be sensitized on risks and mitigation measures associated with PCBs and other POPs.	L
<b>To component results</b>		
Poor coordination among national agencies and associated ministries; and donors such as the World Bank, UNIDO, CIDA and UNDP	Formation of Inter-ministerial Steering Committee for guidance and coordination among agencies.	M
Failure to properly identify and find all PCB wastes, sites and contaminated equipment	Detailed inventories will be complemented by sensitization and awareness campaigns to encourage the stakeholders, the public and private sector to disclose locations of PCB sites and equipment	M
Procurement and financial management risks: Insufficient knowledge and experience with Bank procurement may cause	Procurement and FM training will be provided to key staff during implementation; experienced procurement and FM specialists will be hired to assist the PMU; intensive supervision of PMU staff by the Bank's	M

delays in project implementation	country office procurement and FM specialists. A qualified internal auditor will be seconded from the ministry to the project. Flexible accounting package used for other Bank projects will also be used for the proposed project.	
Lack or absence of Counterpart funds	During the different missions: identification, preparation and pre-appraisal; the Ministers of Finance and Environment had express willingness to abide with counterpart funds commitments. Further, under the new Minister, Government now pays counterpart contributions of Bank funded projects as and when due	M
Inventory and demonstration Pilots could result in public outcry.	A communication strategy with a well laid plan has been developed and will provide transparency and technical objectivity for the inventory pilots.	M
Lack of capacity by the PMU at the Federal Ministry of Environment to coordinate project activities, and thus project implementation will might be slow	A well defined project management system will be followed including the selection of skilled individuals	L
Lack of coordination and collaboration of the PMU with the PHCN, which is expected to implement component 2	There has been close collaboration of the Ministry of Environment with the PHCN, in particular during the two studies financed by the Canadian Trust fund on POPs. This collaboration and coordination will be enforced and built-upon during implementation	M
Accidental leaks of PCB waste during packaging and transport to interim storage locations	Incorporation of environmental and social clauses in bidding and contract documents. Independent supervision by consultant of contractor's or service provider's compliance with environmental, health and safety conditions in the contract	M
<i>Overall Risk Rating</i>		M

#### 9. Safeguard Policies (including public consultation)

<b>Safeguard Policies Triggered by the Project</b>	Yes	No
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<a href="#">Environmental Assessment (OP/BP 4.01)</a>	[ X ]	[ ]
Natural Habitats ( <a href="#">OP/BP 4.04</a> )	[ ]	[ X ]
Pest Management ( <a href="#">OP 4.09</a> )	[ ]	[ X ]
Indigenous Peoples ( <a href="#">OP/BP 4.10</a> )	[ ]	[ X ]
Physical Cultural Resources ( <a href="#">OP/BP 4.11</a> )	[ ]	[ X ]
Involuntary Resettlement ( <a href="#">OP/BP 4.12</a> )	[ ]	[ X ]
Forests ( <a href="#">OP/BP 4.36</a> )	[ ]	[ X ]
Safety of Dams ( <a href="#">OP/BP 4.37</a> )	[ ]	[ X ]
Projects on International Waterways ( <a href="#">OP/BP 7.50</a> )	[ ]	[ X ]
Projects in Disputed Areas ( <a href="#">OP/BP 7.60</a> )*	[ ]	[ X ]

#### 10. List of Factual Technical Documents

- National Inventory of PCB and PCB-Containing Equipment ( SNC – LAVALIN)
- Project Appraisal Document (draft)
- Environmental and Social Management Framework (Draft)

#### 11. Contact point

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\* *By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas*



