



REQUEST FOR CEO APPROVAL

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

PART I: PROJECT INFORMATION

Project Title: PCB Management and Disposal at the Energy Sector			
Country(ies):	Lao People's Democratic Republic	GEF Project ID: ¹	4782
GEF Agency(ies):	UNIDO (select) (select)	GEF Agency Project ID:	130xxxx
Other Executing Partner(s):	Ministry of Natural Resources and Environment	Submission Date:	12/03/2013
GEF Focal Area (s):	Persistent Organic Pollutants	Project Duration(Months)	48 months
Name of Parent Programme (if applicable):		Project Agency Fee (\$):	140,000
➤ For SFM/REDD+ <input checked="" type="checkbox"/> ➤ For SGP <input checked="" type="checkbox"/> ➤ For PPP <input type="checkbox"/>			

A. FOCAL AREA STRATEGY FRAMEWORK²

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
(select) CHEM-1	Outcome 1.4: POPs waste prevented, managed and disposed of, and POPs contaminated sites managed in an environmentally sound manner	Output 1.4.1: PCB management plans under development and implementation	GEF TF	1,400,000	5,600,000
Total project costs				1,400,000	5,600,000

B. PROJECT FRAMEWORK

Project Objective: To facilitate the implementation of the Stockholm Convention on POPs in respect of sound management of PCBs and PCB-containing equipment and wastes including development of specific legislations, implementation of environmentally sound management practices, inventory, testing, labeling of at least 1000 electrical equipment and disposal/decontamination of 250 tones of PCB-containing equipment and wastes.

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
1. Policy, legal framework and institutional capacity	TA	Strengthening of institutional, legislation, policy framework and enforcement for management of PCBs .	1.1 Specific policy/legal framework drafted, adjusted and enacted in accordance with the requirements of the SC. 1.2 Strategy for enforcement	GEF TF	100,000	400,000

¹ Project ID number will be assigned by GEFSEC.

² Refer to the [Focal Area Results Framework and LDCF/SCCF Framework](#) when completing Table A.

			developed and implemented. 1.3 Technical and human capacities for management of PCBs strengthened.			
2. Technology transfer for sound management of PCBs in energy sector.	TA	Application of BATs in all stages of PCB waste management and disposal.	2.1 Detailed inventory and labelling of at least 1000 transformers undertaken. 2.2 PCB phase-out plan developed and implemented. 2.3 Technical options selected for the safe disposal of 250 tones of PCBs containing equipment and wastes. 2.4 Operation of a decontamination BAT sustained after the termination of the project.	GEF TF	1,100,000	4,400,000
3. Public awareness raising, education, dissemination of project results.	TA	Increased public awareness on issues concerning PCBs impact on health and environment, and reduced number of accidents of unintentionally contacts of people with PCB-contaminated materials.	3.1 Assessment of health and environmental impact issues, including management of public and occupational safety issues. 3.2 Stakeholder engagement including NGOs and civil society established. 3.3 Training and educational material developed. 3.4 Awareness raising programmes implemented.	GEF TF	70,000	250,000
4. Impact monitoring and evaluation.	TA	Assessment of the impact of project activities.	4.1 Impact indicator designed and applied. 4.2 Project implementation and impacts evaluated.	GEF TF	65,000	250,000
Subtotal					1,335,000	5,300,000
Project management Cost (PMC) ³				(select)	65,000	300,000
Total project costs					1,400,000	5,600,000

³ PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Please include letters confirming cofinancing for the project with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount (\$)
National Government	Ministry of Natural Resources and Environment (MONRE)	In-kind	1,000,000
Private Sector	Electricity Du Lao (EDL)	Cash	1,800,000
Private Sector	Electricity Du Lao (EDL)	In-kind	2,700,000
GEF Agency	UNIDO	Cash	50,000
GEF Agency	UNIDO	In-kind	50,000
Total Co-financing			5,600,000

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b) ²	Total c=a+b
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				0	0	0

¹ In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

² Indicate fees related to this project.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
International Consultants	164,000	40,000	204,000
National/Local Consultants	15,000	720,000	735,000

G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? (Select)

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF⁴

The project follows mostly the concept explained in the PIF. The elaboration of the details of the PIF was done after the collection of latest information and reviewing the changes taking place after the completion of the NIP, such as records of maintenance of existing transformers and installation of new ones, erection a new workshop for the centralized repair of transformers, changes in environmental legislation.

A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.:

1. The project is in consistence with Chemicals Objective 1: Phase out POPs and reduce POPs releases, Outcome 1.4: POPs waste prevented, managed and disposed of and POPs contaminated sites managed in an environmentally sound manner, Output 1.4.1: PCB management plan under development and implementation.
2. The Government of Lao PDR, together with the Governments of Cambodia, Pakistan and Sri Lanka applied and got financing from SAICM Quick Start Programme Trust Fund to carry out a regional project entitled "Capacity Strengthening and Information Exchange on PCBs in Selected Asia Countries. This study confirmed Lao's needs for capacity building related to PCB management and for proper PCB disposal facilities. More specifically, the SAICM QSP project demonstrated that Lao: does not have sufficient human resources and technical facilities to effectively manage and phase out PCBs; there is no specific laws and regulation on PCBs management, including the use, storage and disposal of PCBs; there is a need in an appropriate laboratory facility and capacity; improper management of the used and obsolete transformers and dielectric capacitors; the maintenance is done without precaution and protective measures for handling PCB contaminated equipment and contaminated sites, including workshops, warehouses, etc.; much efforts are needed to raise awareness on PCBs hazards at all levels, including awareness on the technical safeguard and hazard of PCBs amongst employees and workers; lack of data records and database management system on PCBs; and there is no national mechanism for information exchange and technology transfer.
3. With the assistance of Switzerland and the European Union, a study on the National GHS Situation and GAP analysis in Lao PDR was carried in 2009. The purpose of the national GHS situation and gap analysis is to review current information on chemical use, existing legislations relevant to chemical classification and labeling, institutional responsibilities and administrative capacities relevant to chemical hazard communication. The analysis emphasizes also the implementation status of chemical classification and labeling of relevant to some sectors including Industrial Workplace, Agriculture and Consumer Products and their specific functions and responsibilities and, in particular, to consider the overlaps and gaps in existing institutional arrangement. It reflects also the role and the need, if necessary, of additional provisions of the legislation to respond to chemical classification and labeling scheme. Although not specifically mentioned, PCB laws and regulations widely used in developed countries and necessary to achieve the objectives of the Stockholm Convention are absent in Lao's regulatory framework.
4. The NIP set priorities for initiating future actions to eliminate the use of POPs. The development of an environmentally sound management (ESM) system for PCBs was selected as one of the top priorities of the post-NIP programme. The ESM system includes amongst others carrying out a full scale inventory study, the development of an action for the removal of PCB equipment still in service, the safe collection and interim storage of such pieces of equipment, the adoption of economical and environmentally friendly disposal options for PCB wastes.
5. The Ministry of Natural Resources and Environment prepared an internal plan of actions required to adjust the national environmental legislation to the requirements of the Stockholm Convention on POPs and assigned the staff for monitoring the implementation of the Convention.
6. The proposed project reflects the national priorities set out in the NIP. GEF catalytic role through the Enabling

⁴ For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter "NA" after the respective question.

Activities (EA) project assisted Lao PDR to develop its preliminary inventories on POPs, which identified PCBs and PCB wastes amongst the highest priorities for implementation. The NIP is the first national plan initiated during the four year (2007-2011) period. The PCBs action plan of the NIP is in line with the government policy framework, notably the National Growth and Poverty Eradication Strategy (NGPES) and Lao PDR's millennium development goals in the following areas: (i) improvement of public health; (ii) prevention of releases of toxic chemicals into the environment; and (iii) reduction of poverty through reducing costs of health services. Thus, the proposed project has the full support of the government. The proposed project will contribute towards the improvement of the national and global environment by introducing the integrated environmentally sound management of contaminated electrical equipment, and though decontamination of 250 tones of PCB containing equipment, and by preventing the contamination of the PCB-free equipment.

7. The objective of the proposed project is in line with the National Environmental Strategy and Action Plan by supporting (i) capacity building and human resources development for environmental safeguards; (ii) development projects with minimal environmental and social impacts; (iii) design and implementation of plans for integrated resource management. The project will provide good opportunity for involving national stakeholders, including women's groups and groups involved in the health of children, to facilitate the implementation process as required by paragraph 2 of Article 7 of the Stockholm Convention. Environmentally Sound Waste Management is among the national priorities identified in many strategic documents such as the National Strategy on Environment to the year 2020 recently adopted by the Government. Inline with the National Strategic Socio-economic Development Plan (2006-2010), the project aims to introduce an environmentally sound management of the PCB-containing equipment and wastes in the country and in the long-term to fulfill the requirements of the Stockholm Convention.

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:

The project will deal with the focal area objective CHEM-1, Outcome 1.4: POPs waste prevented, managed and disposed of, and POPs contaminated sites managed in an environmentally sound manner, Output 1.4.1: PCB management plans under development and implementation.

8. To ensure sustainability of actions aimed at the Environmentally Safe Management of Hazardous Waste (including PCBs) the project will act in 2 different levels:
 - by ensuring (Component 1) that the regulations concerning hazardous waste are implemented and enforced, as no action aimed at disposal of waste is sustainable in the absence of a regulation obliging waste owners to dispose their waste; and
 - by ensuring (Component 2) that the technologies for the environmentally safe disposal of hazardous waste (with specific reference to PCBs) compliant with the SC BAT/BEP guidelines, are made available to the waste producer at affordable costs, because even in presence of the strict regulation, if no technology is available, the PCB owners would not have the capability to fulfill the regulation requirements.

A.3 The GEF Agency's comparative advantage:

9. UNIDO is within the comparative advantage matrix set out in GEF/C.31/5 rev.1. UNIDO's operation has been extensively carried out projects in the POPs focal area of GEF, in particular, UNIDO has implemented environmentally sound management of PCBs in Europe, Asia and other regions and has accumulated sufficient knowledge and experiences in implementing GEF projects.
10. The project will be implemented by UNIDO HQ. The Ministry of Natural Resource and Environment will be executing agency of this project. The Ministry will ensure full coordination and timely execution of the project. UNIDO is represented in Lao by the National Cleaner Production Center with competent staff knowledgeable in the area of environmental protection. MONRE has full support of the relevant Ministries in the country working together to ensure the protection of the environment and the health of the population. Thus, commitment of these sectors guarantees the successful implementation of the project.
11. UNIDO plays a leading role in the implementation of the Stockholm Convention on POPs, assisting developing countries and transition economies to meet their obligations to the Convention. The organization focuses on the provisions of the Convention that are directly related to the industrial development, and provides technical assistance

based on an environmentally sustainable approaches, including POPs pollution reduction/elimination, industrial process changes, modification or substitution of materials and products, BAT/BEP and ESM of POPs. UNIDO will co-finance the project with US\$100,000 (\$50,000 in cash and \$50,000 in kind). The in-cash co-financing will be spent to compliment the GEF financing on international consultancy services. As the in-kind contribution UNIDO will provide the local partners with “soft materials”, like the framework for the computerized database for the national inventory, draft technical guidelines, other technical materials developed by the organization.

A.4. The baseline project and the problem that it seeks to address:

Baseline scenario:

a: Overview

12. Lao PDR has ratified the Stockholm Convention on Persistent Organic Pollutants on 28th June 2006 aiming at protecting human health and the environment. In order to fulfill its obligations under the Convention, Laos has developed its National Implementation Plan (NIP) to establish and prioritize action plans to comply with its obligation under the Convention. All relevant national stakeholders participated proactively in this process and their joint efforts resulted in the establishment of an informal system of cooperative approach and strong commitments towards the implementation of the formulated needs and readiness to continue this cooperation by implementing the crucial measures of the NIP. The finalized NIP was successfully endorsed by the national Government and transmitted to the SC COP on the 11th of August 2010.
13. Based on the identification and specific assessment of original POPs related issues, priority issues for the management of POPs in Lao PDR were built upon the participation of relevant institutions and stakeholders. The environmentally sound management of PCBs has been identified as one of the top priorities of the NIP. The following prioritized problems of PCBs were addressed in the NIP: (1) There is a need in human resources and technical facilities to effectively manage and phase out PCBs; (2) Specific laws and regulations on PCB management have to be developed/updated, including the use, storage and disposal of PCBs; (3) An appropriate laboratory capacity needs to be set up; (4) The proper management of used and obsolete transformers and dielectric capacitors have to be introduced; (5) There is a need in introduction of safety precaution and protection measures for handling PCB contaminated equipment and contaminated sites including workshops, warehouses, etc.; (6) The awareness on PCBs hazards at all levels needs to be raised, including awareness on the technical safeguard and hazard of PCBs amongst employees and workers; (7) The data records and database management system on PCBs needs to be properly organized; and (8) The country needs to participate in the international mechanism for information exchange and technological transfer. All these priority areas are addressed in this project.
14. During the NIP development, the "preliminary" PCB inventory was undertaken between January to August 2005 throughout six main provinces of Lao PDR. This information with minor changes, which took place during the last years, was used for the purposes of the project formulation. The inventory process revealed that Lao PDR did not produce PCBs and dielectric fluids. Presence of PCBs and dielectric fluid in the country is through import of the electrical equipment and devices such as transformers and capacitors. The preliminary PCBs inventory identified the presence of about 6,867 dielectric transformers in the country, but it contains records of 5,336 transformers: 5136 units were found to be in use, 45 units were standing-by for use, 86 (currently 82) units were awaiting repair, and 69 (currently 72) units were awaiting disposal. In addition, it has been recorded that of those units 773 are assumed to contain PCBs, and 238 contain PCBs dielectric fluid. The number of contaminated transformers and their details will be verified in the course of the project implementation. In particular, data for 1000 suspected transformers will be verified and at least 250 tones of equipment containing PCB will be decontaminated/disposed. The geographic allocations of the equipment to be included in the list for inventorying and disposal will be defined at the initial stage of the project implementation in order to select the most economic plan of their treatment (reduced transportation routes, degree of contamination, age of equipment, etc.).
15. The transformers acquired before 1990 might contain PCB in their fabrication. Of the about 655 transformers acquired before 1990, 418 units were tested for PCB. The results of these tests showed that 119 units or 29% of the transformers acquired before 1990 contain PCBs above 50 ppm. Based on the above contamination degree it is estimated that 190 units of the 655 transformers acquired before 1990 are contaminated with PCBs. The estimated total weight of these 190 units is about 144 metric tons.

16. The transformers acquired after 1990 were produced as PCB-free. The assumption that they are still PCB-free might be valid only for owners, which has a PCB management system that clearly segregates PCBs from non-PCBs transformers. This is not the case in Lao, as even at present time there is not test being carried out in transformers being repaired and/or maintained. From experience in other countries, it is logical to expect that some of these transformers, even if they were PCB-free at their acquisition time, may have been crossed contaminated during their service life. Based on experience of other countries, it is reasonable to accept the assumption that 10% of transformers are cross-contaminated during their service life. It is especially relevant for large transformers because, as a rule, power transformers in generating and transmission stations require regular maintenance. The amount of oil in the small number of this type of transformers is quite significant and therefore, if these transformers have been crossed contaminated, they would contribute a significant amount of PCB containing material in EDL. Thus, assuming that 10% of the transformers acquired after 1990 contain PCBs above 50 ppm, the additional number of transformers containing PCBs in Lao would be about approx. 600 units giving a total of about 790 transformers and the total weight of these transformers is estimated to be about 590 metric tons.
17. The data were gathered from information based on the manufacturing date, dielectric type, cooling system, historical repairing, and missing or illegible name plates. Furthermore, it is estimated that, considering the existing practice of using oil from decommissioned transformers for refilling the operational transformers during their repair or service and evaluating the findings of screening test analysis on dielectric fluid, up to 30% of the transformer park might be cross-contaminated with PCBs.
18. The inventory process also revealed that owners dealing with PCBs, PCB-containing equipment and wastes are in general aware about the hazardous characteristics of PCBs and their toxic effects to human health and the environment. Although the results of the preliminary inventory are available to the PCB owners, measures to undertake environmentally sound management, especially with respect to the protection and safety measures for workers, including women and children, dealing with PCBs as well as prevention of PCB leakage to the environment are still preliminary. There are currently no specific laws regulating the sound management of PCBs, PCB-containing equipment and wastes that will oblige PCB owners to introduce occupational safety and environmentally sound PCB disposal measures. Capacities to incinerate PCB waste are not available in Laos, thus leading to the only available option of exporting PCB-containing equipment and waste abroad to a qualified incineration company. The high costs of safe incineration abroad and unsafe disposal practice in the country are potential risk factors for this option.
19. Following the ratification of the Convention, the national Government of Lao PDR showed its willingness to meet its obligations under the SC on POPs and has already undertaking several measures to initiate its implementation. As a first step, they requested MONRE to start preparing the recommendations for incorporating the requirements of the SC on POPs in the local environmental legislation. However, knowledge capacity on PCB management, phasing out and disposal is currently not sufficient to ensure the development of policy and legislation with high international standards, so the PCB activities were given the highest priority and the Government applied through UNIDO to GEF for financing a relevant project for PCB management. It is important to mention that the country, despite the difficult economic situation, has already allocated resources required for the implementation of the SC (which can be seen in their co-financing commitments to the proposed project).
20. In view of this, the proposed project will facilitate the implementation of SC with respect to PCBs-containing equipment and wastes including the development of specific legislations, the implementation of environmentally sound management practices, inventory, testing and labeling of at least 1,000 suspected electrical equipment, safe storage of PCB-containing equipment and wastes and their safe disposal of at least 250 t. of contaminated equipment. During the PPG phase extensive consultations by the international and national consultants with the national GEF focal point, local counterparts and principle stakeholders were conducted on awareness issues.
21. The NIP identified limited public awareness on issues concerning POPs wastes including PCBs impact on health and the environment. Stakeholder agreement and dissemination of training and educational material on safe management, handling, safety storage, labeling, transport and disposal of PCBs are not sufficient to ensure the compliance with the SC.
22. The Government and the stakeholders understand that the issue of the limited local financial resources would delay the implementation of the SC obligation in respect of PCB, thus increasing the leakages of PCB to environment, spreading PCBs to currently PCB-free energy equipment through cross-contamination and will increase the

volumes of PCB wastes (equipment, oil and contaminated soil), which finally need to be decontaminated or disposed of. The efforts are undertaken and planned to be undertaken by the Government are not sufficient for timely implementation of the obligations of the SC on POPs in respect of PCBs. It could be estimated that the above delay of the PCB disposal without the requested support will result in annual increase of the total disposal costs by 8-10%. It does not include the estimation of the damages to the health of the population, which is difficult to calculate at this stage. Some technologies need investments in hard currency, which is limited in the country.

b: Regulatory Context:

23. At present the Lao PDR does not have specific regulations regarding the handling, use and disposal of PCBs. Government officials and PCB users are aware of the situation. With the absence of such legislation it will not be possible for the Government to manage the PCBs according to the requirements of the Stockholm Convention.
24. Since the late 1990's, the government has updated many positions of the environmental legislation and became a signatory to a number of international conventions and regional agreements. Nowadays, there are 60 environmentally related laws enacted. The following laws, decrees and regulations related to the chemical management were updated: Decree on the implementation of the environment protection law, decree on the control of import, export and use of ozone depleting substances, regulation on pesticides, notification on the prohibition of the list of good for import and export. However, there is no specific law or strategy for the chemical safety management of PCBs.
25. The most relevant legislation currently available in Laos regarding PCBs and the preservation of the environment is the Environmental Protection Law. This law was a base for developing guidelines for the methods and measures for environmental protection, conservation and rehabilitation, pollution control, environmental emergency actions and natural disasters, for creation of green, clean and beautiful environment without pollutions and negative influence on human health, animals, plants and ecosystem. This law contains several several articles that can be applicable to PCBs. The substances of the most related articles are given in Article 13 dealing with Environmental Protection Practices consisting of environmental pollution prevention, pollution control, toxic chemical control and waste disposal, and environmental certification and permission. Article 17 on Environmental protection includes integrated planning, strategic environmental assessment, preventive measures against natural disasters, initial environmental examination, environmental impact assessment, environmental management of household businesses, use of cleaner technologies, limitation of impacts caused by construction and other activities, environmental prevention against chemical leakages due to accidents, identification of the national environmental standards. Article 24 requires the use of cleaner technologies that improve emerging socio-economic conditions, provide manufacturing processes with less environmental footprint at least not exceeding the National Pollution Control Standards, and strictly pursue other technical standards existed for these industries.
26. The Environmental Protection Law also includes articles on waste management, like Article 36 on toxic chemical control defines toxic chemicals as substances used for production processes, businesses and services such as industry, agriculture, forestry, energy, mining, handicraft, or other activities including household consumptions, which can be harmful to human life and health, animals, plants and non-live forms; and are needed for controlling through treatment, dumping, burn, cremation, bury or elimination, with compliance to exact specific procedures and regulations. The natural resources and environmental authorities are directly responsible for coordinating with other line sectors their responsibility for permitting utilization (when required) of chemicals included in the toxic chemical lists with relevant control/management of the prescribed conditions of their use and disposal.
27. Article 38 on waste disposal: Disposal of general wastes, particularly rubbish, shall be segregated based on disposal or uses such as recycle, reuse, reprocess as new products and elimination with methods and techniques within identified areas based on regulations. Disposal of toxic and hazardous wastes including explosive materials, flammable objects, chemical substances, wastes or discharged water by hospitals, industrial factories, particularly chemical product manufacturing, radiation, and mineral processing, requires treatment, dumping, burn, cremation, bury or elimination, with methods and techniques within identified areas based on regulations. Landfills for districts, villages, households, health facilities, educational institutes, governmental offices, factories and others shall be determined by the sectors and by collaborating with the natural resources and environmental sector.
28. The Environmental Protection Law also covers the management of toxic wastes and as per Article 37 it prohibits the import of toxic and hazardous wastes that are contaminated with chemicals and radiation into Lao PDR excepted

under specific regulations allowing their ingress to the country. It also indicates that Persons, legal entities and organizations producing toxic and hazardous wastes due to its own production and business operations shall be liable with compliance to the law and shall keep, eliminate, bury and treat the waste in accordance to the standards and regulations; and medical wastes from hospitals shall be management and control with exact compliance to the regulations and standards enacted by the concerned sectors. Furthermore, it clearly indicates that the management of toxic and hazardous wastes shall be stipulated by the specific regulations.

29. The analysis of the existing Environmental Protection Law shows that there is in Laos the legal framework for establishing regulations regarding management of PCBs. However, the practical guidelines and regulations for implementation of this need to be developed. The relevant activities are included in this project.
30. The industrial hygiene standards for workers exposure to PCBs at the workplace do not exist. In order to prevent the exposure of workers to PCBs the methods to measure such exposure also need to be developed.
31. Laos has environmental standards for maximum concentration of PCBs in air, water and soil. However, there is no mechanism to measure the concentration of PCBs in these media and therefore nobody knows if these maximum concentrations are being exceeded. There is need to establish the analytical capacities in the country to be aware where the contamination existed in order to confirm workers and public in general are not being exposed to these toxic chemical or to prevent their contacts with the contaminated materials.
32. As in other jurisdictions, the existing legal framework does provide specific requirements for the use, management and removal from service of PCBs containing equipment making difficult for Laos to comply with the requirements under the Stockholm Convention for disposal of all PCB-containing materials till 2028. In this regards, the objectives to upgrade regulations and guidelines to help users and government officials to manage the existing inventory of PCBs would play an important roles in helping Laos to meet its obligations under the Stockholm Convention.

Baseline project:

33. The execution of the baseline project will be lead by MONRE with the active participation of all stakeholders and, in the first run, EDL. It will be based on the following components, deriving from the project profiles included in the NIP:

Policy and legal framework, institutional capacity (NIP Project profiles B1 and B8). This component includes the development of legal instruments or technical guidelines for managing PCBs, and the capacity building and public awareness on PCBs issue for institutional stakeholders.

Capacity building. (NIP project profiles B6, and B8). This component includes the development of laboratory capacity for PCB testing, and the capacity building and awareness raising on PCB issues among industrial and private stakeholders.

Inventory of PCBs (NIP Project profiles B2 and B9). This component includes carrying out of a detailed inventory of PCBs containing and contaminated equipment, as well as the establishment of the database for PCBs management.

Environmentally safe management of PCBs (NIP profiles B3, B4, B5, B7). This component includes the assessment of socio-economic aspects for phasing out of electrical equipment and accessories that are contaminated with PCBs, environmentally sound management for "in use" and "out of use" equipment, and methodologies for safe maintenance and repair of electrical equipment.

34. The baseline project arrangement and the financial commitments by the Government and EDL, which is the state company and the biggest owner of the PCB-contaminated equipment prove that the Government is willing to comply with its obligation under the SC for POPs and will continue to develop and update its administrative instruments for this purpose. However, most of the technical capabilities required for the successful carrying out of the activities envisaged under the baseline project, particularly, technologies for the ESM management of PCBs are missing in the country.
35. The proposed GEF project, in order to compliment the baseline project, is developed in close consultation between the MONRE and the private sector - Electric Du Lao (EDL). EDL is aware of the PCB problem and willing to initiate a large scale programme for "cleaning-up" their equipment. However, without the support from GEF, they

will not have the access to BAT/BEPs and the existing technological solutions for PCB disposal will be more expensive and less efficient. In addition, there is the concrete risk that some technological options, which are in use now for collection, transportation and storing of the contaminated equipment, will not be environmentally safe. The other mode of financing of the PCB disposal actions (loans) will result in delaying the economic development of the country as well as poverty alleviation, because it consumes the restricted financial resource from other sectors.

The GEF Project

36. The proposed GEF project will start in the situation where the efficiency of the high country commitment and proactive participation of stakeholders is reduced by limited technical capabilities, unavailability of disposal technologies, difficulties to procure advanced analytical equipment and BAT.
37. To maximize the effectiveness of technical assistance, the GEF project will integrate and support the ongoing activities and already started efforts aimed at eliminating PCBs. The ongoing process of the regulation updating will be supported by the international expertise in PCB-related legislation (component 1). On the capacity building side (component 1), the project will improve the human capacity and expertise, which is partially available after the completion of the POPs Enabling Activity project at MONRE and other institutions to guide the private and public sectors to develop and implement the economically efficient PCB disposal measures to comply with the requirements of the SC.
38. The project will upgrade the capacity for identification of PCB (Component 2) by assisting a laboratory (to be selected among several candidates recommended by MONRE) to have technical and human capacities and to be certified to undertake the inventory and testing for PCB.
39. Currently EDL is erecting a new workshop for repair/maintenance of transformers. As soon as it is complete, the project will assist to introduce at this facility procedures for the safe collection, packaging, transportation, storage of PCBs (Component 2). This facility will serve as a base for the disposal equipment and as the training center for PCB management. The project will consider the reality of the country, where exists the practice to repair the malfunctioning transformers instead of their phasing out. Such transformers are transported to the central repair facility of EDL, located in Vientiane. It makes easier the creation of a system for safe collection and transportation, because it will require only draining of oil to a reusable container before the transportation; the contaminated wastes will be collected at the repair facility after the rehabilitation of a transformer.
40. The project plans to bring to the country a technology for safe disposal of PCB waste. Through awareness raising actions (component 3) the project will address other owners of contaminated equipment from mining, rubber, manufacturing industries, etc. The project will initiate the collective actions of PCB owners from other sectors of economy, who will contribute to the disposal costs (packaging, transportation, labor costs and infrastructure support for operation of the disposal facility). The project awareness raising activities will address as well technical specialists and different groups of the population of the country to make them not only aware about the damage of contacting the PCB-contaminating equipment, but as well proposing the preventive and protecting measures and means to avoid these contacts. In general, the project will rely on the development of domestic treatment capacity; it does not envisage exporting of the contaminated wastes for disposal abroad, so the experience for PCB management will be complete and the technical facility will stay in the country to assure the sustainability of the PCB management actions. A non-exhaustive list of the technologies considered for the project could be chemical destruction technologies, based on the use of metallic sodium or hydrogen. These technologies produce non-hazardous residual sludge, so it will be no problem for their disposal at the existing local landfills. Although incineration may be considered as a BAT technology if based on up to date plants equipped with state of the art Air Pollution Control Systems (APCS), the extremely high investment cost prevents its use in the project.
41. Electricity Du Lao, main electrical company and owner-operator of most PCB-transformers in the country and the principle technical partner of the project, will receive full information about the availability of PCB in their network. By the end of the project EDL will have the technical facility, human capacity and experience allowing the company not only start disposal of limited volume of contaminated equipment, but also plan the elimination of the PCB beyond the duration of the project and within the timeframe provided by the Stockholm Convention for complete disposal of PCB. The project will also strive for enhancing the cooperation with large and medium enterprises, like mining, rubber, manufacturing, and with industrial associations, to ensure that the proper management of PCBs is pursued involving a large number of potential PCB owners.

42. The project will provide a permanent solution for the dechlorination of PCB contaminated oil, the most abundant PCB containing material scattered in EDL electrical network, therefore allowing the company to plan and carry out the total disposal of PCBs from the company in an orderly and planned manner.
 43. The operation of the dechlorination system will be carried out by trained local operators. The priority will be given to developing of local on-site treatment services thus avoiding the need to transport PCBs contaminated liquid and thereby reducing the environmental risk of PCB spills that might happen in transportation activities .
 44. The project will fully involve the National Cleaner Production Centre (NCPC) established by UNIDO for capacity building and awareness raising activities. The Center, through the previous activities accumulated human capacities and technical expertise in these areas. It established numerous professional contacts with local industries and the reputation as an experienced independent organization. It will be especially useful in organizing the training activities, assessment of the proposed technologies/disposal methods and conducting the inventory process.
 45. The proposed project will establish a project team, which includes the specialists that participated in the EA project and specialists from the NCPC, with the support of UNIDO international experts as these specialists will have sufficient advanced knowledge and practical experiences in different issues of POPs, their locations, ownership and barriers that prevent their safe disposal in the future as well as conducting inventory on PCBs, which is an important component of the proposed project. They will be able to train or assist the owners of PCB-contaminated equipment to test their transformers for the content of PCB and to organize this information in a database.
- A. 5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:
46. The project will assist the country to establish ESM of PCBs focusing on the largest owner of transformers – Electricity De Laos (EDL) that will allow the country to involve at a later stage other national owners of potentially RCB-contaminated equipment and replicate the best practices for PCBs management and disposal. ESM of PCB will include the identification, collection, packaging, registration and labeling system at the respective factory/industry, transport, safe interim storage and disposal of PCB-containing equipment and waste. The overall objective of the project is to facilitate the implementation of the Stockholm Convention on POPs in respect of sound management of PCBs and PCB-containing equipment and wastes including development of specific legislations, implementation of environmentally sound management practices, inventory, testing, labelling of at least 1000 electrical equipment and disposa/decontamination of 250 tones of PCB-containing equipment and wastes.
 47. The GEF project has 4 major components which provide a holistic framework to introduce environmentally sustainable management of PCBs, PCB-contaminated equipment and wastes in the country. The components include (1) Strengthening of policy and regulations; (2) Technology transfer; (3) Public awareness raising and (4) Effective monitoring and project evaluation, which will ensure the successful achievement of the desired project outputs.
 48. Component 1 focuses on the review, formulation and enforcement of policies or regulation directly relevant to PCB management in the country. The GEF project is envisaged to assist in the formulation of overwhelming legislation for PCB management, which includes investment and tax to encourage the use of safe technologies; policy to put code/label on equipment free of PCBs and those containing PCBs; policies for inspecting and monitoring PCB disposal; and guidelines on ESM and disposal of PCB wastes and decontamination of PCB-contaminated oil and equipment. As part of the output for this component, economic and market-based incentives will be proposed that will encourage the participation of PCB owners. Market analysis on the cost of testing and disposal options will be conducted and the incentive scheme will be developed and proposed. Financial implications/assessment of the proposed scheme will be done to ascertain its sustainability. The regulation on these policies is necessary because currently Laos does not have suitable technologies for the treatment and disposal of PCBs and other POPs. There is no disposal facility with proper air pollution control system necessary to dispose these materials safely. Without proper legislation, investors that maybe interested in developing needed alternatives would not have the assurances that owners of the PCB wastes would make disposal of these materials using suitable technologies.

49. Strategies for priority setting will be established and applied inviting all relevant stakeholders into the decision-making process. Cooperation of other stakeholders will be of utmost importance for proper assessment of priorities and selecting a strategy for economic and market based solutions for final PCBs disposal. The intensive training on PCB management will be provided by international experts to a core group of government staff on preventing the negative health and environmental impacts of PCBs, how to identify PCB, and how to formulate policies and code of practice.
50. Under Component 2, technical capacity building efforts will address the needs of government officials as well as managers and workers at the state-owned EDL. The following training activities are envisaged: (i) training on inventory and analysis will be provided to EDL staff and the inventory team for conducting of proper sampling, analysis, inventory and data analysis; and (ii) other PCB owners will be invited for the comprehensive training on the whole cycle of ESM of PCBs, including the conduct of inventory, proper registration, labeling and storage of PCB wastes and PCB contaminated equipment. This will also include the establishment of mechanism in industry to prevent leakage and cross contamination, safe handling and storage of the equipment in the industry site.
51. As an output for Component 2, technical resource capacity of an analytical laboratory will be developed. Based on the NIP, currently there is no laboratory in the country has technical capacity or accredited to analyze PCBs. A PCB inventory team will be established to undertake the task starting from the Vientiane region, as the most industrialized part of the country. Proper labeling and registration of the wastes to be prioritized for treatment should likewise will be carried out. The data generated from the in-depth inventory will permit the environmental authorities to develop a detailed PCB phase-out plan for the country.
52. This component of the project framework will address as well activities to be undertaken to demonstrate environmentally sound management and disposal of PCBs. ESM of PCBs will be demonstrated through proper collection, packaging, labeling, registration, transportation, storage and disposal of targeted PCB wastes and PCB contaminated equipment.
53. In order to carry out the disposal of 250 tones of PCB material, it is envisaged that the project will acquire a PCB treatment system. It is expected that this PCB treatment system will be sited at the workshop erected by EDL for transformer maintenance. However, being a mobile system, it will be available for operation at transformers that are on-line and located around the country. ESM of PCB wastes and PCB-contaminated equipment will be applied in the location of the contaminated equipment. Transportation protocols will be developed to ensure that geographical and climate risks are taken into consideration. MoNRE and EDL will ensure that only specialized transportation vehicles will be used for corresponding transporting of the PCB wastes from the storage site to the disposal facility.
54. An in-depth study will be done based on the inventory results and the baseline scenario assessment which will include cost-benefit analysis. Taking into consideration that the largest part of the PCB-containing materials are low contaminated, the technology will use the chemical decontamination processes. The high contaminated materials will be disposed by the same method, because the estimation of technical options fully evaluated by experts shows that it is, in general, more economically efficient, than to establish a specialized incinerator or export it abroad for disposal. A study will be prepared in this respect to find the most efficient way of disposal of low and high contaminated materials. Based on the identified needs and the priorities set, the terms of reference for procurement for PCB disposal facility will be developed to address environmental and safety requirements.
55. Throughout the project implementation, public awareness raising and involvement of interested NGOs and other organizations will be ensured under Component 3. The successful implementation of the project will provide a solid basis for sustainable management and destruction of PCBs and PCB containing equipment in Laos PDR. Other stakeholders and interested parties not directly benefiting from the project investment activities will be invited in all relevant capacity building, training and information dissemination in order to ensure replication of the outcomes in the whole country. It is also envisaged to solicit the support of women's group, research and academic institutions to support the implementation of the training and awareness raising component of the project.
56. Without the involvement of GEF, the legislative framework addressing POPs waste management and particularly the use, and handling and disposal of PCBs will continue to be scattered at best. The environmental authorities will not have legal instruments and trained capacity to control, track and guide local industries to implement the requirements of the SC on POPs. PCBs will continue to enter the environment. Decommissioned contaminated

transformers will continue to pile up without any leaking preventive measures and release PCBs into the environment. They will continue to stay on the premises of maintenance facilities and/or dumped without any precautions close to schools, hospitals and houses attracting scavengers as sources of secondary metals or curious children as playing grounds. There is also a significant risk of PCB wastes being handled in an unsound manner and environmental NGOs and international organizations will start questioning the preparedness of the country for POPs waste disposal and compliance to SC.

57. Without GEF intervention the efforts of EDL in managing its PCBs containing equipment will continue to be minor, without the possibility for company officials and workers to be familiar with the environmental and health risks associated with PCBs. Decommissioned transformes and other PCB containing material will continue to be disposed and/or handling as non-PCBs and therefore increasing workers exposure to PCBs and the health risk associated with such a exposure.
58. With the catalytic assistance of the GEF, the POPs waste management pattern will fundamentally change. By establishing a comprehensive legislative framework with clear working procedures for POPs waste import, handling, transportation and disposal, the Government authorities will be able to track, control and assure that POPs wastes are managed in the country in an environmentally sound manner. The implementation and demonstration of BAT/BEP in the disposal of PCB wastes and decontamination of the valuable metal parts for recycling will lead to a significant lower PCBs releases to environment.
59. Without GEF involvement the capacity building and public awareness raising regarding PCBs in Lao PDR will be very slow as the knowledge of the harmful effects of PCBs and POPs will be maintained by a very small number of people, contrary to the objectives of the Stockholm Convention.
60. The global environmental benefits of the project will be the reduction of the global POPs stockpiles by 250 tones of PCB-containing equipment and wastes in an environmentally sound manner. By applying BAT and strict environmental practices during the disposal of PCB wastes, the releases of unintentional POPs during the disposal process will be avoided.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

Assumptions and Risks	Risk Level	Mitigation Measures
Outcome 1: Strengthening of institutional, legislation, policy framework and enforcement for management of POPs including PCBs		
There is no unexpected risks in Component 1 of the project		All potential risks have been discussed with local stakeholders at the initial stage o the project formulation and considered in the CEO endorsement document
Outcome 2: Application of BATs and BEPs in all stages of PCBs waste management and disposal		
Lack of support from transformers owners to make their equipment available to the project for sampling and testing	L	With a very small industry base, most of the transformers in the country are owned and operated by EDL. EDL is a partner and fully committed to the project. The timely acceptance of the legislation updating will make undertake the identification and disposal of PCB contamination
Technical staff, working in PCB handling and disposal, as well as general population residing in the neighborhood where PCBs are being treated may be excessively exposed to PCBs	L	The possibility of such a risk under normal conditions is very low. Technical staff will be properly train in all aspects of PCBs, including the use of personal protective equipment. The technology to be selected using BAT/BET criteria amongst proven and commercially available with proven track record, therefore the risks for potential accidental releases of PCBs during operation of the technology will be minimized. In addition, the operation of such a system and

		<p>handling of PCBs will be carried out in a secured, control area.</p> <p>However, despite all the above, special instructions for actions of technical staff in case of emergency situations will be developed. NCPC will be monitoring these risks to the local population and, if required, recommend to the Steering Committee and MONRE preventive/protective measures to be done.</p>
Impact of adopted PCB treatment technology on climate change	L	The technology to be adopted will be a dechlorination system where the PCBs are chemically destroyed in a controlled ambient, allowing the recovery and use of the transformer oil. The formation of greenhouse gases is avoided
Accidental exposure to electrical shocks and/or PCB during transformer oil samples being taken during inventory exercise	M	Operators taken samples from transformers will be EDL employees with proper training working on or near energized transformers. They will be fully trained in dealing with PCBs to reduce any potential exposure risk
Resistance of stakeholders to accept results showing transformers in their system is contaminated with PCBs equipment containing PCBs	L	EDL is a state-owned company that has already supported other PCB projects, including during preparation of NIP. EDL is also a fully committed partner to this project.
Outcome 3: Increased public awareness on issues concerning PCBs impact on health and environment, and reduced number of accidents of unintentional contacts of people with PCB-contaminated materials		
Accidental PCB releases due to PCB dechlorination and/or decontamination equipment break down	L	Please look for the above risks mitigation measures
<p>Natural disasters on stockpiles and POPs containing articles may cause spreading of PCBs in the environment</p> <p>Lao's climate conditions will affect performance and efficiency of PCB treatment facilities or activities being carried out as part of the project .</p>	M	<p>The Terms of Reference for the equipment will include the requirements to consider the local geographical and climatic conditions for the design of the equipment and for its operation in case of emergency situation.</p> <p>Design of facilities will be made in compliance with the classification of the area in term of seismic risk.</p> <p>The operational plan will take into account emergency response to be adopted in case of natural disasters.</p> <p>Project's activities such as PCB handling and transportation will be carried out according to prevailing climate conditions to reduce the potential for environmental accidental releases</p>
Outcome 4: Assessment of the impact of project activities		
Difference of opinions between the stakeholders on project's objectives and their responsibilities versus the requirements of the SC on POPs.	L	Regular PSC meetings will be a forum for tracking and evaluating project's progress, making necessary changes and solving possible problems among the stakeholders. PSC members will be asked to be active in reviewing project's activities and results

A.7. Coordination with other relevant GEF financed initiatives

61. Currently in Lao PDR, there are no on-going initiatives addressing PCBs and related capacity buildings, therefore the project will be a stand-alone one. GEF also supports a project on National Capacity Self-Assessment (NCSA) for Global Environmental Management. The project is executed by the Ministry of Natural Resources and Environment. The human resources and technical capacity created by NCSA will be exploited during implementation. The project will also share the achievements with other GEF funded projects. The table below shows list of GEF-related projects in Lao:

List of GEF related projects (selection):

№	Project Name	GEF project ID	Project Status	Executing Agency	Coordination area
1	Southern Provinces Rural Electrification II Programme	2366	Under Implementation	IBRD & MEM	Coordinate and Collaboration with related ministry for Technical advisory on PCB in Transformer Monitoring and Management of PCB
2	Enabling Activities to Review and Update the National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs)	5095	CEO Approved	UNIDO & MONRE	Technical advisory, information sharing, reviewing and formulating related legal frameworks
3	Implementation of the POPs Monitoring Plan in the Asian Region	4898	Council Approved	MONRE for Lao PDR	Technical advisory, information sharing, reviewing and formulating related legal frameworks
4	Regional Plan for Introduction of BAT/BEP Strategies to Industrial Source Categories of Stockholm Convention Annex C of Article 5 in ESEA Region	3572	CEO Approved	UNIDO & MONRE	Technical advisory, information sharing, reviewing and formulating related National Plan as part of regional

62. Additional information not addressed at PIF stage:

UNIDO was the implementing agency for the Enabling Activity project, when the National implementation plan (NIP) was prepared, so the consultants of UNIDO were well aware about the situation in the country with PCBs, as well as other relevant information about the owners of electricity equipment. The data on the equipment has been confirmed by the engineering staff of EDL and, as one can see from paragraph 14 on p.7, not many changes in the number of transformers happened after the preliminary inventory. This information was used for drafting the PIF. It helped the consultants and local staff to address in it all principle issues.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Describe how the stakeholders will be engaged in project implementation.

There are several stakeholders that will be engaged in the implementation of this project, they are:

The **Implementing Agency (IA)** for the project will be UNIDO. It will be responsible for overseeing project budgets and expenditures, recruitment and contracting consultants, procurement of equipment and project evaluation as well as organizing independent audits to ensure the proper use of GEF/UNIDO funds. Financial transactions, auditing and reporting will be carried out in compliance with national regulations and UNIDO procedures. The project will be implemented from UNIDO HQ.

The **Ministry of Natural Resources and Environment of Lao (MONRE)** will be the National Executing Agency of the project. It will execute its day-to-day activities of the project through Environment Research Institute (ERI). The other technical/executing partner of the Ministry will be the UNIDO National Cleaner Production Center (NCPC)

According to the national legislation the Ministry is responsible for preparing the policy initiatives for updating the PCB-related legislation and its submission to the higher authorities for approval. The Ministry through its Environment Research Institute (ERI) will prepare the guidelines and administrative procedures for PCB management. ERI will participate in reviewing the inventory results, preparing plans for monitoring of the PCB disposal actions by PCB owners and formulating drafts of any other actions requiring MONRE approval or involvement.

The **National Executing Agency (NEA)** will be responsible for delivering the project inputs inside the country and producing or facilitating the production by local counterparts the expected outputs. NEA will be responsible for monitoring the execution of the activities to be financed by local donors. NEA will be accountable to UNIDO for the proper use of funds provided to it and for the quality, timeliness and effectiveness of the services it provides and the activities it carries out related to the project. NEA will be responsible for the day-to-day project execution and the timely and verifiable attainment of project objectives. Environment Research Institute (ERI) of the MONRE will be working with national technical partners and stakeholders on the day-to-day issues of the project execution. After successful implementation of the project, the Government of Lao PDR will nominate an authority to take over the activities. Therefore, the project aims to build capacity in ERI/MONRE (POPs Unit) and other main actors at the local level to enable them to progressively broaden their activities. The NEA will establish a project office at ERI. NEA in consultation with UNIDO will nominate a National Project Manager (NPM) on a full-time basis, who will report to the Project Steering Committee (PSC), the NEA and the IA.

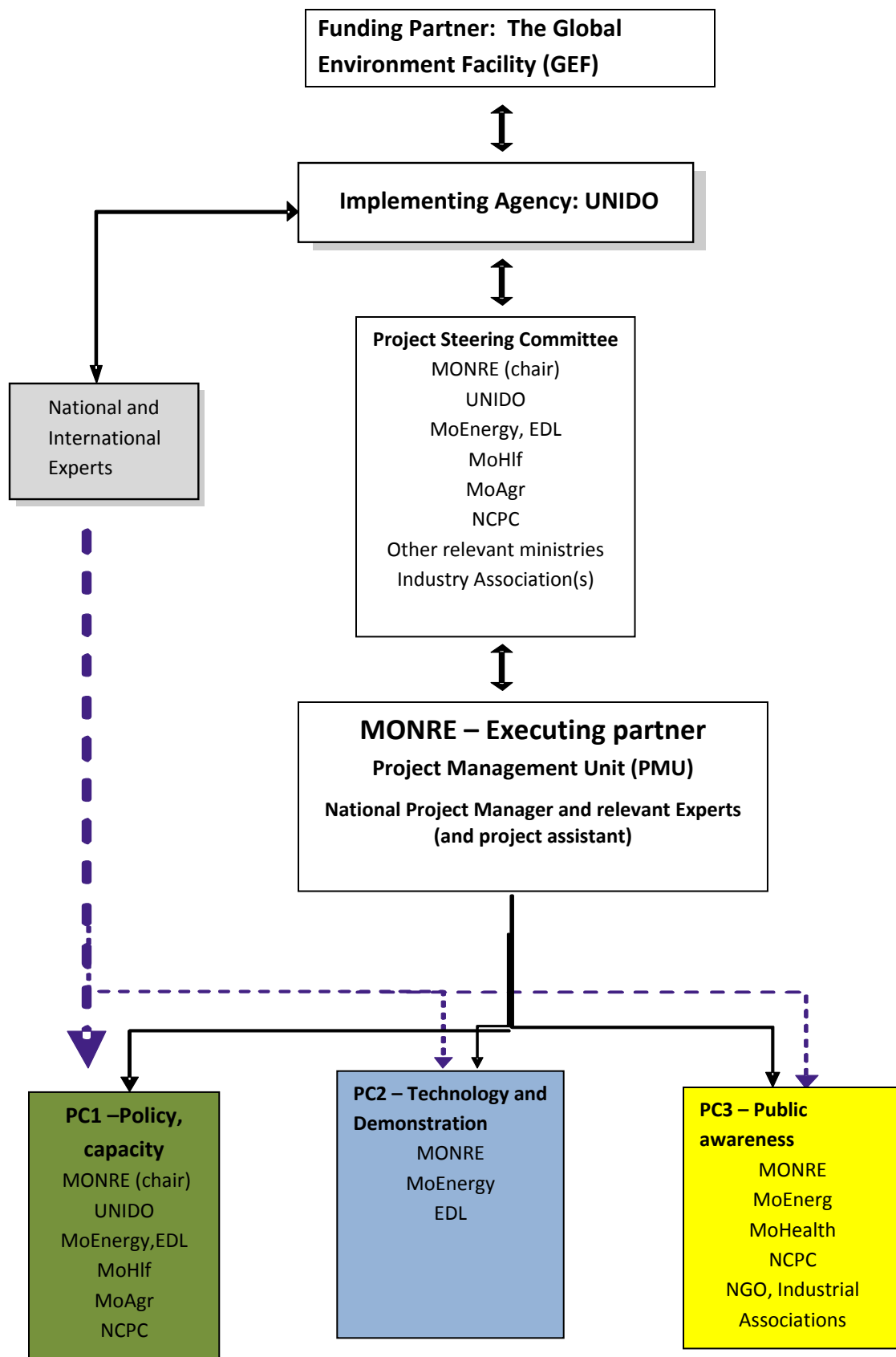
The **National POPs Steering Committee**, chaired by the Vice Minister of MONRE will serve as the **Project Steering Committee (PSC)** and decision making body of the proposed project. The PSC will hold its regular sessions throughout the project duration, but additional meetings could be held, if necessary. The PSC will oversee the project-related work of the National Project Manager (NPM) and the project team, review and approve the work plan. All decisions of the committee, such as respective responsibilities, timelines and the budget will be clearly communicated to those concerned. Terms of references for activities, which require sub-contracting and submitted tenders will be reviewed and evaluated by the PSC according to existing national procedures. Any major changes in the project plans or programmes will require approval from the PSC, UNIDO and GEF to take effect. PSC members will facilitate the execution of project activities in their respective institutions, ensure that cooperative activities are executed in a timely manner and facilitate the integration of project-inspired activities into existing programmes and practices. There is the good coordination established among the Stockholm Convention, the Basel Convention and the Rotterdam Convention at the country level. This helps to ensure that there is no duplication in project activities/implementation and formulation of regulations, thus, enhances the synergy.

The **National Project Manager (NPM)** will ensure adherence to the work plan. His/her main responsibilities will include timely and complete execution of all technical aspects of the project as well as the monitoring of the co-financing commitments of the project by the counterpart. The NPM will work in close cooperation with the respective departments of MONRE (legal, hazardous waste management, others) and the UNIDO project manager. The NPM will be responsible for the project monitoring, which includes preparing technical and financial reports to UNIDO, organizing meetings and appointments during field evaluations, and confirming the quality of the project's outputs. Task teams will be established for certain activities. These task teams will consist of representatives of the

stakeholders. The NPM will work closely with the task teams to coordinate project activities and make the link between project administration and execution as seamless as possible.

Other stakeholders involved will be: the **Ministry of Energy and Mines** for drafting the regulation related to electric standards and technical guidelines for management of PCB contaminated electrical equipment; **Ministry of Public Health** responsible for health saving measures; **NCPC** will assist in identification of local expertise and most efficient options for different project activities like inventory and labeling, awareness raising campaigns, and contribute to sustainability for the PCB disposal measures through distribution of PCB management experience to small PCB owners; **EDL**, as the base organization and major owner of electrical equipment and **NGOs** for promotion and awareness raising campaigns in particular among communities located close to PCB-contaminated wastes. Representative of environmental and women NGOs and industrial associations will be invited for the kick off workshop, where the specifics of their participations will be negotiated.

In addition representatives of other Ministries might be involved such as: Ministry of Agriculture and Forestry, Ministries of Industry and Handicrafts, Ministry of Communication, Transport, Post and Construction, Ministries of Defense and Finance, Ministries of Commerce and Foreign Affairs and the Ministry of Culture and Information. Their specific involvement will be decided in the course of the project implementation, as required by the needs of the project.



B.2 Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF):

64. Economic Benefits: The most important economic benefits from this GEF project is the reduction of disposal cost for the treatment of PCB contaminated oil and the recovery of valuable components such as the mineral oil and metals in contaminated electrical transformers. The cost of dechlorinating the oil within Lao is expected to be in the order of US 1.0 to \$ 2.0 per kilogram, depending on PCB concentration in the mineral oil. This is much lower than the alternative option to export the oil in European incinerators for an estimated cost of US \$ 7 to 10 per kilogram. The local decontamination will regenerate the transformer oil with the residual value of about US \$ 2.50 per kilogram. This value will be lost in case of exporting or incineration. This option will minimize the demand for the hard currency needed to pay to an international disposal company.
65. Social Benefits: The implementation of this GEF project will result in the adoption of state of the art technical solution for a serious environmental problem, the creation of jobs for implementing the technical activities of the project and afterward, , and providing sources of income for those workers involved in the operation of such systems. In addition, the sound management of PCBs containing equipment and wastes will reduce people exposure to PCBs, minimizing health risks and the need for future medical treatment due to exposure to PCBs
66. Gender Dimensions: The implementation of this project will create new job opportunities for women , in particular, for inventoring, recording the results, controlling the compliance of the owners of equipment with the environmental regulation. Participation of women in technical working groups and steering committees will be encouraged. In addition, it has been demonstrated that lactant mothers have been vehicles for transferring PCBs in the milk to newborn children. For women in general and for mothers in particular, the awareness raising activities planned in this project will make them aware of this risk, minimizing their exposure to PCBs and eliminating that children at early age in their lives, are unnecessarily exposed to these toxic chemicals. Involvement of national women groups and NGOs will be particularly sought for awareness raising activities. For this purpose one of the SC meeting will be held with participation of representative of those NGOs and a specific plan of actions will be developed, including the consultations and financial assistance to these groups.

The general gender issues will be addressed with due regard to UNIDO gender policy. The Ministry of Public Health will be engaged in the relevant regulatory activities and in ensuring that the regulation fully protects women from the impacts of POPs. The largest national NGO "Laos Women's Union" will be involved in the awareness raising activities planned in this project to bring the awareness to this group of population and to make them aware of the PCB-related risks, minimizing their exposure to PCBs and eliminating the risk that children at early age in their lives are exposed to these toxic chemicals. The awareness raising will be particularly active at local levels, where the energy units and wastes are located. For this purpose one of the PSC meeting will be held with participation of representative of those NGOs and specific measures will be developed, including the consultations and financial assistance to these groups.

B.3. Explain how cost-effectiveness is reflected in the project design:

67. The project aims to provide the country with an innovative way for PCBs disposal that are proven and well known for their safety, effectiveness and economic benefits. The technology to be transferred will stay in Lao beyond the duration of the project providing the country with local solutions for the disposal of their PCBs waste. The cost associated with the acquisition of such a decontamination system in Lao is known to be much less than the cost associated with shipping and disposing of the 250 metric tons of PCB wastes in European incinerators.
68. The in-depth/refining inventory to be carried out as a part of this project will be used for selection of the most efficient scenario of treatment of identified PCB contaminated transformers, taking into consideration the available human, technical and financial resources, location of transformers and their conditions in order to maximize the final outputs of the project in respect of volumes of decontaminated equipment. Some of these transformers, particularly large working units, will be retrofilled to achieve the decontamination status, while other units will be drained and dismantled. The PCB contaminated oil from the transformers being retrofilled

or dismantled will be dechlorinated in a dechlorination unit, while the metal and porous material will be decontaminated. Dechlorination of the PCB contaminated oil and its recovery is the most cost-effective manner of treating this waste stream, while decontamination of the metal components, particularly copper allows the high-value recovery of these metals.

69. The review of the transformer maintenance practice undertaken by UNIDO consultants during the PPG phase shows that the existing transformer maintenance practice is to restore damaged transformers. So, it is possible with the high degree of assurance to state that many transformers are contaminated with a low concentration of PCB that makes it economically feasible to clean them through a decontamination process. UNIDO implemented a number of similar projects, where a decontamination technology (either a cyclical or a batch mobile or stationary units) was applied. UNIDO has a list of vendors of such technologies and knows about advantages of each technology. It will help to identify the most efficient technology for the conditions of Laos.
70. While the project will study all the technical options available based on the results of the extensive inventory and feasibility study, cost comparison at this stage maybe made between incineration and dechlorination options. The estimated disposal cost for PCB wastes in European incinerators for local PCB owners is about US \$ 7-10/kg, independently of the PCB waste stream. This cost, based on proposed services to local potential clients, include packaging, transportation and disposal costs. The cost associated with dechlorination of PCB-contaminated mineral oil (low level contamination) is approximately US \$ 1-2/kg, depending on PCB content in the oil, significant saving can be achieved by PCB owners that may have PCB contaminated transformers in their electrical systems. Moreover, with the relatively easy cleaning of metallic components from PCB contaminated transformers, the saving in decontamination cost can be further augmented by the recovery of valuable metals. About 30% of the total weight of the mineral oil filled transformer is copper and with an estimate price of US \$ 3.00 per kg, the recovery of copper from electrical transformer can realize a significant saving for the owners of the PCB transformers or the operators of the PCB treatment facility. The comparison of the costs of local disposal with the export option confirms that the local decontamination of transformers will be the most efficient option. In view that there is only small quantity of high contaminated equipment, it will be, on the total, economically more efficient to decontaminated them through processing the oil several times, then arrange the export of this small volume of high contaminated material abroad, because, as a rule, the transportation costs do not change substantially for small and big volumes. The local option will save recycled material in the country.

C. DESCRIBE THE BUDGETED M & E PLAN:

71. Monitoring and evaluation will facilitate tracking implementation progress toward the outcomes and objectives. Likewise, it will facilitate learning, feedback, and knowledge sharing on results and lessons among the primary stakeholders to improve knowledge and performance. This section of the project document presents a concrete and fully budgeted monitoring and evaluation plan of the project.

Monitoring and evaluation budget and timeframe

Monitoring and evaluation	GEF	Cofinancing	Timing
<i>Design and implement an M&E mechanism according to GEF M&E procedures</i>			
Measure impact indicators on an annual basis	10,000	100,000	Annually
Prepare Annual Project Reports, Annual Work Plan and Project Implementation Reviews		80,000	Annually
Hold annual Project Steering Committee meetings	15,000	80,000	Annually
Carry out mid-term external evaluation	20,000		To be completed within 36 months from project start
Carry out final external evaluation	20,000		To be completed within 6 months after project completion
Complete the Terminal Report		40,000	At the end of project implementation
Total for M&E	65,000	300,000	

Project Inception Phase:

72. The project Inception Phase will involve the establishment of the PMU, appointment of the members of the Steering Committee, the project launching through an Inception Workshop (IW) and convening of the first Project Steering Committee (PSC) meeting.
73. The IW is aimed at launching the project with the full project team, relevant government counterparts, co-financing partners, key stakeholders, UNIDO and the other related organizations in Lao PDR, as appropriate. This will provide the platform to disseminate project objectives, general workplan and implementation structure to relevant stakeholders.
74. The 1st PSC is aimed at convening the project team to better understand and assimilate the goals and objectives of the project, as well as to finalize the preparation of the project's first annual work plan on the basis of the project's results framework matrix. This work will include reviewing the results framework as necessary (indicators, means of verification, assumptions), imparting additional detail as needed, and completing an Annual Work Plan (AWP) for the first year of project implementation, including measurable performance indicators.
75. Additionally, the meeting will: (i) introduce project staff to the UNIDO team, which will support the project during its implementation; (ii) delineate the roles, support services, and complementary responsibilities of UNIDO staff vis-à-vis the project team; (iii) provide a detailed overview of UNIDO and GEF reporting and Monitoring & Evaluation (M&E) requirements, with particular emphasis on the content and format of the Annual Project Implementation Reviews (PIRs), the Annual Project Report (APR), the Annual Work Plan (AWP), meetings, as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the project team on UNIDO project related administrative and financial procedures, budgetary requirements and reviews and mandatory budget rephrasing. In the course of the project, the structure of the project's Management Information System will be also introduced.
76. The 1st PSC will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines and conflict resolution mechanisms. Specific targets for the first year implementation progress indicators together with their means of verification will be developed and agreed in this workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the AWP.
77. The Inception (Phase) Report will be drafted and circulated for comments and approval by project partners within one month from the meetings.

Monitoring responsibilities and events:

78. One month before the starting of each implementation year, the PMU will draft an Annual Work Plan, complying with requirements and formats established for the first Annual Work Plan at IW. The AWP will be submitted to UNIDO for approval. The Annual Work Plan will set the target against which project performance shall be measured at the end of each implementation year.
79. Day to day monitoring of project execution progress will be the responsibility of the National Project Manager (NPM) based on the project's Annual Work Plan (AWP) and its indicators. The NPM will coordinate the planning and monitoring activities with the National Project Coordinator. The PMU, via the NPM, will inform UNIDO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.
80. Targets and indicators will be reviewed annually as part of the internal evaluation and planning processes undertaken by the Project Management Unit (PMU)
81. UNIDO through meetings with project counterparts as frequent as deemed necessary but not less than twice per year will undertake periodic monitoring of the project implementation progress. This will allow parties to troubleshoot any problems pertaining to the project in a timely fashion to ensure the smooth implementation of project activities.

82. UNIDO will conduct periodic visits based on agreed schedule to be detailed in the project's Inception Report / Annual Work Plan to assess project progress. Other members of the National Steering Committee may also accompany these visits. A Field Visit Report will be prepared by UNIDO and will be circulated to the project team no less than one month after the visit.
83. Annual Monitoring will occur through PSC meetings, which will take place at least once every year. The national project manager will prepare an Annual Project Report (APR) and submit it to UNIDO at least two weeks prior to the PSC for review and comments.
84. The PSC has the authority to suspend funds disbursement if project performance benchmarks are not met.

Key impact indicators for the project:

85. As the primary objective of this project is to introduce in the country the system for PCB management and to carry out ESM disposal of PCBs and PCB-containing equipment, oil and wastes, the most direct indicators to characterize the impacts of this project should include the institutional capacities, the nation-wide database of contaminated equipment and wastes and metric tons of decontaminated dielectric oils in PCB-containing equipment and PCB-containing mineral oil and wastes.
86. The important indicator is the number of PCBs contaminated equipment labeled and registered in the project database, which have been committed for disposal. This indicator reflects the fact that specific PCB equipment have been identified, kept under control and are currently pending disposal. Securing stockpiles for future disposal is one of the most important tasks in any POPs management project; the amount of PCBs equipment secured for future disposal has also to be considered an indicator of the soundness and practicability of the PCB management plan.
87. The other relevant indicators (regulatory instrument adopted, and PCB identification and disposal facility established and permitted) provide insights not only on project impact, but also on the future sustainability of the project outcomes.

Key project Impact Indicators

Key Impact Indicator	Baseline	Target (at Year 5)	Means of Verification	Frequency of verification	Location
Set of guidelines and regulatory instruments on the management of PCBs are prepared and adopted	General hazardous waste regulation that by default includes PCBs	One set of guidelines and regulations on management of PCBs adopted and being utilized	Copy of the guidelines being distributed amongst PCB users and copy of legal instrument (Decree, law)	Annually	
PCB Treatment facility built, commissioned, permitted and operational for the disposal of PCB containing equipment and wastes	0	1	Certificate of disposal for PCB wastes treated at the site, Site visits, testing reports, official permitting documents	Within the first 36 months of project implementation	Treatment facility site

Number of transformers being sampled and tested for PCB contamination, and registered in created database	0	1,000	Laboratory reports and inventory registry	Annually	Transformers owners sites
Amount of PCB-containing equipment and waste treated in PCB treatment facility	0	250 metric tons	Hazardous waste manifested, PCB owners records, PCB Treatment facility certificate and records	Annually	PCB owners sites, PCB treatment facility, and interim storage sites

Terminal Project Workshop

88. The terminal project meeting will be held in the last month of project operation. A draft final report will serve as the basis for discussions in the final workshop. This will serve as a venue to consider the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results and acts as a means, which lessons learned can be captured for use in other projects under implementation or formulation.

Project Monitoring Reporting

89. The national project team will be responsible for the preparation and submission of the following reports that form part of the monitoring process.

(a) Inception Report

90. A Project Inception Report (IR) will be prepared immediately following the Inception phase. It will include a detailed First Year Work Plan divided into quarterly timeframes, which detail the activities and progress indicators that will guide the implementation during the first year phase of the project. The Work Plan will include the tentative dates of specific field visits, support missions from UNIDO and/or UNIDO consultants, as well as timeframes for meetings of the project's decision-making structures. The report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 month timeframe.
91. When finalized, the report will be circulated to the members of the project team and relevant stakeholders, as necessary, who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, UNIDO will review the document.

(b) Annual Project Report

92. The Semi-Annual Reports required by UNIDO is a part of UNIDO central oversight, monitoring, and project management. It is a self-assessment report by project management to UNIDO, as well as a key input to the PSC. The APR will be prepared on an annual basis prior to the annual PSC to reflect the progress achieved in meeting the project's Annual Work Plan and assess performance of the project in contributing to the intended outcomes through outputs and partnership work.
93. The format of the APR is flexible but should include the following: (a) Analysis of project performance over the reporting period, including outputs produced and information on the status of the outcome; (b) Constraints experienced in the progress towards results and the reasons for these; (c) Expenditure reports; (d) Co-financing accounting and mobilization (resources provided both as in kind or cash contribution); (e) Lessons learned; (f) Recommendations to address key problems in lack of progress, if applicable.

(c) Project Implementation Review

94. The Project Implementation Review (PIR) is an annual monitoring process mandated by the GEF. It is an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project will be under implementation for a year, the project team shall complete the PIR. The PIR can be prepared any time during the year (July-June) and ideally, immediately prior to the PSC.

Independent Evaluations

95. The project will be subjected to at least two independent external evaluations as follows:

- (a) Mid-term Evaluation. An independent Mid-Term Evaluation will be undertaken at the end of the third year of project implementation. The Mid-Term Evaluation will measure progress made towards the achievement of outcomes and will identify corrections if needed. The evaluation will focus on the effectiveness, efficiency, and timeliness of project implementation; highlight issues requiring decisions and actions; and present initial lessons learned on project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the second half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this mid-term evaluation will be prepared by UNIDO in accordance with the generic TORs developed by the GEF Evaluation Office.
 - (b) Final Evaluation. An independent Final Evaluation will take place 2 months prior to the completion of the project implementation, and will focus on the same issues as the mid-term evaluation, with a greater focus on project impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities future projects, based on lesson learned and success stories. The Terms of Reference for this evaluation will be prepared by the UNIDO in accordance with the generic TORs developed by the GEF Evaluation Office.
96. A Project Management Information System will be established to support the Project Manager and the project management team to ensure that all the project activities be completed on time, in quality and within budget. The MIS will include a searchable database containing (in electronic format or scanned PDF) all the project technical and administrative documentation. The MIS will keep baseline records of Annual Work Plans and contracts with consultants and subcontracts with performance indicators, result reports, responsibilities and budgets, allowing the easy comparison of them with the progresses of the activities.
97. According to the Monitoring and Evaluation policy of the GEF and UNIDO, follow-up studies including Country Portfolio Evaluations and Thematic Evaluations can be initiated and conducted. All project partners and contractors are obliged to (i) make available studies, reports and other documentation related to the project and (ii) facilitate interviews with staff involved in the project activities.

Legal Context

The Government of the Lao People's Democratic Republic agrees to apply to the present project, mutatis mutandis, the provisions of the Standard Basic Assistance Agreement between the United Nations Development Programme and the Government, signed and entered into force on 10 October 1988.


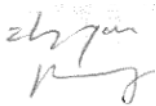
PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

- A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this form. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Mr. Khampadith KHAMMOUNHEUANG	GEF Operational Focal Point, Deputy Director General	ENVIRONMENT DEPARTMENT SCIENCE TECHNOLOGY AND ENVIRONMENT AGENCY	01/01/2013

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Mr. Philippe Scholtès, Officer-in-Charge, Programme Development and Technical Cooperation Division-PTC, UNIDO GEF Focal Point		12/03/2013	Mr. Zhengyou PENG 	+43-1-26026-3831	z.peng@unido.org

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Project Development Objective: To facilitate the implementation of the Stockholm Convention on POPs in respect of sound management of POPs and PCB-containing equipment and wastes including development of specific legislations, implementation of environmentally sound management practices, inventory, testing, labelling of at least 1000 electrical equipment and disposal / decontamination of 250 tones of PCB-containing equipments.

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Component 1: Policy, legal framework and institutional capacity					
Outcome 1.: Strengthening of= institutional, legislation, policy framework and enforcement for management of PCBs	A package of guidance documents concerning PCB identification, labeling, tracking, packaging, transportation and disposal developed. The text of a new set of regulatory instruments compliant with Stockholm requirements on PCBs (Annex A, part II) to be submitted to the state regulatory body drafted and discussed with the relevant stakeholders.	Currently, the Lao PDR legislation does not contain specific provision on management and disposal of equipment and waste containing PCBs.	Regulatory instruments, including a framework regulation on PCBs and official guidance on PCB management is drafted, submitted to the relevant legislative bodies, and officially adopted.	Meeting reports, copy of the officially adopted guidance regulatory instruments, official acts adopting legislation text and guidance documents.	The government of Lao PDR is committed to timely establish official guidance documents and a new regulation which will obligate and promote stakeholders at managing PCB in an environmental sound manner. Agreement among stakeholders on the content of the regulatory tool will be reached rapidly and effectively.
Output 1.1: 1 Specific policy / legal framework drafted, adjusted and enacted in accordance with the requirements of the SC.	The current regulatory framework will be assessed in comparison with Stockholm Conv. requirements, Basel convention and international regulation on PCBs; A new set of regulatory instruments and guidance documents	No legislation on PCBs management and disposal is in place. Lao PDR however has submitted a NIP which includes PCBs as a priority.	Official guidance documents concerning PCB identification, labeling, handling and disposal drafted and officially approved. Text of the framework regulations on PCBs drafted. Official guidance documents approved	Meeting reports, copy of the officially adopted guidance, reports concerning the discussion on the draft regulation.	Lao PDR governmental stakeholders are supportive in providing information on the best and fastest way to implement new regulation and guidance documents.

	compliant with Stockholm requirements on PCBs (Annex A, part II) adopted.		and demonstrated in the project. Draft regulation submitted to the Lao PDR regulatory body.		
Output 1.2. Strategy for enforcement developed and implemented	A practical strategy for implementing the new PCB regulation is elaborated agreed with the stakeholders and implemented.	An enforcement strategy, made of clear assignment of role and responsibilities, incentives and penalties, reporting obligations is missing.	An enforcement strategy which will clearly define the role and responsibilities of the local and central authority, deadline, incentive and penalties for the PCB owners, reporting and management obligation, and financial plan for the implementation of the PCB legislation is drafted and agreed with relevant ministries and industry representatives (MONRE, MIMEE)	Meeting reports, preliminary and final draft of the enforcement strategy.	Lao PDR governmental stakeholders together with industry stakeholders are proactive in identifying proper mechanisms, specific for Lao, for the enforcement of the PCB legislation.
Output 1.3 Technical and human capacities for management PCBs disposal strengthened.	A PCB training center will established with the support of MONRE and EDL.	Currently, capacity of EDL, private stakeholders and governmental institutions, on properly implementing the provisions of the Stockholm Convention on PCBs is scarce.	Establishment of a training center at the EDL premises, or at MONRE with the support of MONRE and EDL. Establishment of curricula at Universities.	Visit to the training center, training attendance sheet, training reports, enrolment and after training test.	MONRE is fully supportive to all the activities envisaging training and awareness raising the project. EDL will provide specific knowledge to the management and maintenance of transformers.
Component 2. Technology transfer for sound management of PCBs in energy sector					
Output 2.1 Detailed inventory and labelling of at least 1000 transformers	Availability of a PCB inventory including sample and monitoring data concerning at least	Analytical capacity for PCBs is missing in the country. Preliminary	One laboratory is upgraded with equipment for carrying out PCB analysis using	Technical specifications Bidding and procurement	MONRE has the willingness to set up facilities for carrying out PCB analysis as

undertaken	1000 transformers.	information concerning transformers and electrical equipment available on NIP suggested that up to 29% of the transformers tested may have a PCB content higher than 50 ppm. However, this inventory was carried out on older units and not valid to estimate total number of transformers containing PCBs in Lao, therefore an exhaustive inventory of PCB equipment is missing.	an international standard method and accredited. Standard Operating Procedures (SOP) for identifying, labeling, tracking, screening and laboratory analysis of PCBs is drafted. At least 10 operators trained on the implementation of such SOP, in the course of desk and field lessons. Inventory teams established throughout the country and an inventory coordination unit established. Inventory including sampling and analysis of 1000 transformers carried out.	documents; Laboratory accreditation official documents; PCB analytical reports; Training reports. SOP for identifying, labeling, tracking, screening and laboratory analysis of PCBs; PCB inventory report. PCB sampling plan. Site visits reports. Sampling and analysis reports, containing data of a verifiable chain of custody of samples.	required by the project. The upgrading of laboratory equipment and methodology can be carried out timely to ensure completion of the required analytical tasks. With the commitment of project partners, the completion of the countrywide inventory envisaging sampling and analysis of 1000 transformers can be carried out within the required timeframe.
Output 2.2 PCB phase-out plan developed and accepted for implementation	Availability of a PCB management plan drafted and agreed by relevant stakeholders.	In Lao PDR, because of the lacking of relevant legislation, data on PCBs contaminated equipment are not available to establish a sound PCB management plan. A database platform for the management of PCBs, which will be the proper tool for PCB management, is also missing.	Database of PCBs contaminated equipment containing serial numbers, positioning and all the other relevant data for identifying and managing the PCB equipment created. A PCB management plan for the project, based on inventory outcome and priority considerations, which can be used as a model for the country PCB management plan,	Database created and filled with all the PCB inventory data. PCB management plan, developed by using the PCB database, drafted and agreed.	An inventory database linked to a GIS system where all identified PCBs equipment are registered is a crucial tool for securing PCBs equipment to be disposed within project timeframe. The system will be established before starting of the inventory effort so that all the process of data collection, data entering, labeling and tracing will be

			drafted and agreed among relevant stakeholders.		facilitated. A PCBs management plan, based on an extensive and accurate data set and on priority considerations, and agreed among stakeholders, is the proper instrument for planning the ESM of PCBs within project timeframe. The experience gathered in drafting and implementing the PCBs management plan will ensure replicability and sustainability after project end.
Output 2.3 Technical options selected for the safe disposal of 250 tones of PCBs containing equipment and wastes	A technical and economical analysis of available PCB treatment technologies, based on the specific situation of Lao PDR, identifying the best option for PCB treatment, carried out. Technical specification for the plant to be procured clearly identified,	As it is not required by the current legislation, proper technologies for the ESM disposal / treatment of PCBs containing equipment and waste were never assessed.	A set of technologies for the disposal / treatment of low contaminated PCB equipment, metal carcasses and porous material is identified and their relevant parameters (both concerning disposal capacity requirements, reliability and environmental performance) identified and quantified.	Technical specifications compliant with SC requirements of the PCBs disposal technologies to be used for the drafting of bidding documents.	It is possible to identify and select a suitable and a cost effective technology, to be either rented or procured, for the treatment of 250 tons of PCB containing equipment.
Output 2.4 Operation of the decontamination BAT sustained after	A system for the packaging, temporary storage and transportation of PCBs	There is no disposal capacity in the country to satisfy the need of PCBs disposal in	Guidance procedures for the packaging, temporary storage, transportation and	Procedure documents for the safe handling of PCBs. Reports and	EDL is committed to provide infrastructures for the temporary storage and

the termination of the project.	equipment and PCBs waste, including both procedures and infrastructures ensuring capacity beyond project objectives, is established. Suitable disposal technology for the ESM disposal of PCBs equipment/waste tested and permitted, for an overall disposal capacity suitable to satisfy or exceed project need (250 tons of PCBs). Amount of PCBs equipment and waste successfully disposed.	compliance with the SC BAT/BEP criteria and deadline. There is currently no enough treatment capacity for either decontaminating or disposing the 250 tons of PCB equipment committed for under the project.	disposal of PCBs in Lao PDR put in place and verified. At least one temporary storage facility established or upgraded for the storage, packaging and transportation of PCBs. One suitable disposal or treatment facility, compliant with the SC BAT/BEP criteria, for a capacity suitable to fulfill or exceed project needs, established, tested and permitted. At least 250 tons of PCBs equipment or waste treated or disposed by means of such facility.	documentation concerning storage, packaging and transportation of PCBs. Supervision at PCB storage facility. Supervision reports. Bidding documents and reports for disposal technology. Proof of Performance test report of the PCB disposal facility. Hazardous waste manifests of the disposed PCBs waste. Project PCB tracking sheets (certificates of delivery to the facility and successful disposal/treatment).	transportation of PCB containing equipment. Guidance documents for the ESM packaging, storage, transportation can be implemented before the starting of disposal of the committed 250 t PCB equipment. A disposal facility will be procured, successfully tested and permitted within project timeframe (within first 30 months of the project). The disposal facility will work reliably maintaining the required disposal capacity to exceed the treatment of 250 tons of PCBs within project timeframe. PCB owners will maintain their commitment to dispose their PCBs under the project. The PCBs equipment committed for disposal reaches or exceeds the amount of 250 tons.
Component 3. Public awareness raising, education, dissemination of project results					
Output 3.1 Assessment of health and environmental impact, including	Existing studies and researches conducted in Lao PDR on the health aspects related	A case study concerning the health risk assessment of the Sok Pa Loung	Risk Management Measures including the proper use of PPE for operators carrying out	Risk Management Measures and HSE procedures for operators working at	MONRE, MOH and EDL are highly committed in establishing quality

management of public and occupational safety issues.	to PCBs reviewed with the purpose to identify quality criteria at workplace and for the environment.	warehouse carried out with WB support in the framework of the regional project “Regional Capacity Building Programme for Health Risk Management of POPs in South East Asia”. The study contains risk management measures for PCB workers and the environment.	sampling, maintenance, dismantling of transformers drafted and disseminated. Quality criteria for PCB contaminated soil established.	any stage of electric transformers sampling, maintenance, transport, disposal established.	criteria for PCBs at workplace and in the environment. The project can benefit from studies previously carried out by Hatfield with World Bank funds.
Output 3.2 Stakeholder engagement, including NGOs and civil society established	Number of stakeholders targeted and participating in raising awareness initiatives.	Limited Identification of target stakeholders for raising awareness on PCBs issues is carried out.	At least 1 university, one NGO, 2 public institutions, one waste management companies identified and participating in raising awareness initiatives.	Awareness raising plan and strategy report. List of targeted stakeholders contacted. Reports / recording of raising awareness initiatives. Questionnaire surveys carried out before and after raising awareness initiatives.	Identification of the proper target, which is not necessarily the public at large, is crucial for an effective awareness raising on PCB. Target stakeholders identified are willing to participate in raising awareness initiatives. The level of awareness is measurable by means of properly conducted questionnaire surveys.
Output 3.3 Training and educational material developed	Awareness raising material.	No awareness raising material on PCBs is available in the country, either for the general public or for specific stakeholders.	Awareness raising material specifically developed for: Universities Operators of PCBs owners (i.e. utilities, large factories), public institutions and NGOs.	Dissemination materials specifically prepared for each target group identified.	A suitable expert on communication can be identified who can properly interact with technical experts to develop effective and appealing awareness raising materials.
Output 3.4 Awareness raising programmes	Number of awareness raising events held. Outcome of	Limited awareness raising initiatives carried out in the	At least 2 awareness raising workshops and 2 training courses	Awareness raising workshop material and minutes.	The government of Lao, and more specifically MONRE,

implemented	questionnaire surveys.	recent years; most of them were on the side of assessing health effect and human exposure of PCBs.	carried out.	Questionnaire survey (before/after) List of participants to workshop and training courses. Enrolment and final test related to training courses.	is highly committed to increase the awareness of the PCB issue, on both the sides of specific stakeholder and the general public. The proper awareness raising targets can be individuated and it is expected that there is great interest in participating in raising awareness initiatives.
Outcome 4.: M&E mechanism designed and implemented					
4.1 Impact indicators designed and applied	Use of indicators for evaluation of the results of the project implementation			Formal approval of the indicators by the Steering Committee	IR, APRs, AWP, PIRs, evaluation reports will be timely drafted and their content properly communicated and used for an effective project management
4.2 Project implementation and impacts evaluated				Final evaluation report	

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work programme inclusion and the Convention Secretariat and STAP at PIF).

<p>(i) Although the PIF identifies most of the steps involved in tackling the PCB security and disposal problem, it could be improved by recognizing that the development of a sustainable POPs disposal system should include collection, packaging, transportation, and disposal of targeted POPs and POPs containing equipment, with active involvement of government, communities, and relevant stakeholders in the targeted areas.</p>	<p>We are grateful for the comment which provides us with an opportunity to clarify the project document. It is a standard procedure, adopted throughout all the projects implemented by UNIDO, to include in the environmentally safe PCB management all the aspects related to the several processes involved, not only collection, packaging and transportation but also identification, labeling and tracking or PCHs.</p> <p>As such, this aspect has been carefully considered and detailed in several parts of the project document. Among the risks, "<i>Poor handling and storage of PCB contaminated equipment representing an environmental or health/hazard</i>" has been identified as one of the risks to be considered.</p> <p>Among the actions, the project envisages the formulation of <i>official guidance documents concerning PCB identification, labeling, handling and disposal; the framework regulations on PCBs; and operating procedures (SOP) for identifying, labeling, tracking, screening and laboratory analysis of PCBs is drafted</i>. Operators will be trained on <i>implementation of the SOP, in the course of desk and field lessons the guidance procedures for the packaging, temporary storage, transportation and disposal of PCBs in Lao PDR will be put in place and verified. At least one temporary storage facility will be upgraded for the environmentally safe storage, packaging and transportation of PCBs</i>"</p> <p>The word in bold above have been added to the project document to further clarify the compliance with the comment provided.</p>
<p>STAP suggests that a careful consideration of each element would identify mechanisms and support infrastructure that may be absent, resulting in a better stakeholder and risk analysis. For example, the stakeholders analysis could include the private sector (though reference is made to looking into cooperation with a private-sector initiative), and the informal sector, to assess their roles, and the risks associated with these groups in sustainable measurement of PCBs. Thus a re-assessment here could be beneficial.</p>	<p>In compliance with STAP comment, further clarifications to the text have been added. In term of further analysis it has to be considered that: 1) the informal sector is marginal to the project as practically all the electrical equipment potentially contaminated by PCBs pertains to the electricity production or to large industries. 2) concerning the industrial sector, it has additionally to be considered that the economy of Lao PDR is still dominated by micro-scale industries. Medium-large size industries do exist in the sector of mining (copper, tin, gold, and gypsum); timber, electric power, rubber, construction, garments, cement, tourism. The project will therefore add to its original scope the involvement of medium-large enterprises potentially owning PCBs.</p>
<p>(ii) The risk analysis does not look at climate-related risks appropriately, that should influence transportation protocols and criteria for site selection for the mid to long term storage of PCB wastes, and the stability necessary for storage facilities. Indeed the climate risk in the risk table focuses only on mitigation elements as opposed to climate resilient elements. Laos</p>	<p>In all UNIDO projects, new installation/facilities undergo feasibility analysis and EIA, where these risks are identified and addressed. In compliance with the STAP comment, the project wording has been duly modified taking into account the climate-related risks and seismic risks to be considered as critical factors for the establishment of storage and disposal sites.</p>

<p>has a varied topography (e.g. mountain ranges where it borders with Vietnam and Thailand). The Mekong River makes a significant feature at its western border with Thailand. The Nam Ma fault exists at its border with Burma, and there is a long rainy season of 5 to 6 months a year. Laos was also impacted by an earthquake as late as March 2011. Therefore management plans should take into account the potential consequences of natural disasters on stockpiles and POPs containing articles.</p>	
<p>The potential of informal, repurposed use of POPs containing containers should be included in any targeted awareness in communities. There may be a large gender component to this (e.g. if women do water collection and other gathering of food using repurposed containers). It is unknown if this is indeed an issue in Laos as it is in many other countries, but it should be formally ruled out.</p>	<p>The issue was clarified in the project document. The reusable containers will be marked properly. They have value for owners and will be properly secured. The disposed and damaged containers will be treated as contaminated wastes, so secured in the protected place till proper disposal. PCBs and PCBs contaminated oil is contained in oil-filled electric transformer or capacitors, or pending their use may be stored in large industrial containers or in commercial steel drums for oil (>200 L). In addition, due to the strong and persistent odor and the oily characteristic of pure PCB oil and of PCB contaminated oil, these containers are never used for storing water. On the other side, there is the concrete risk that these contaminated containers, as well as contaminated pumps, are used for storing or transferring non-contaminated industrial oils, therefore causing the cross-contamination of these oils and / or of electric equipment. The issue of cross-contamination of electric equipment is one of the key aspect considered in the project, and indeed it will represent one of the key basis to be considered for the identification of PCBs contaminated equipment.</p>

<p>(iv) It is hoped that attention will also be paid to the handling of residuals from disposal processes. In developing the project document, and determining disposal options, though UNIDO's strengths in BAT/BEP are elaborated, there does not seem to be explicit mention of Basel guidance (critical if offshore disposal becomes necessary), and this could be further enhanced through use of the GEF guidance on technology selection for POPs disposal and the overall development of the ESM system for PCBs and pesticides. This would ensure that a comprehensive set of parameters be used to select technologies for GEF investment (e.g. environmental performance, ability to manage residuals and transformation products of the destruction and decontamination processes, full assessment of pre-treatment steps required and attendant associated risks, and required resources and capacities to manage them). Consideration, and where needed, implementation of the aforementioned management guidelines would be desirable, and would also ensure that the true costs of a technology are brought to light since pre-destruction steps (e.g. characterization of the PCB congeners to be handled, prioritization, capture and transport, containment and pre-treatment) can carry their own significant resource demands and capacity burdens. This can often be a significant barrier to implementation of technologies in developing countries and CEIT.</p>	<p>It has been clarified in the text that as the project relies on the development of domestic treatment capacity, it does not envisage packaging and transportation abroad of contaminated equipment for disposal, thus avoiding the need prepare documentation for international transportation of hazardous wastes. It is however evident that in case transportation for safe disposal in other countries will be necessary, the stakeholders will be provided with the proper training and assistance to fulfill Basel convention requirements and the other relevant national or international legislation. Indeed to ensure that all the steps of the technology are BAT/ BEP compliant is also a standard procedure adopted by UNIDO in all stages of implementation of PCB projects worldwide. This normally includes drafting TORs for technology selection based on clear compliance with SC requirements, evaluation of technical offers, conduction of Proof of Performance testing, monitoring of the residues and emissions, and environmental monitoring. We recognize that, although in the project document <i>“Infrastructure, procedures and technologies for the Environmentally Sound Management of PCBs, from inventory to disposal, are established.”</i> is explicitly listed as key indicator, this could be not sufficient to detail the proposed activities related to the evaluation, testing and monitoring of the technology. Therefore the text has been duly amended.</p>
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ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS⁵

A. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:

The project was designed based on reliable information. The project preparation group consisting of national and international consultants and representative of different local organizations, as well as UNIDO staff in Vienna and the Vientiane had prolonged discussion with the management of EDL, with top administrators of MONRE and with other stakeholders. So, there are no visible reasons that might affect the project design.

B. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

The PPG implementation started with the reviewing the changes that took place since the time of preparation of the National Implementation Plan (NIP). For this purpose UNIDO recruited 3 national consultants (an industrial economist from the Environment Research Institute, a legal consultant from MONRE and an electrical engineer from EDL, who reviewed the changes in the legislation approved during the last years, changes happened in the administrative system of the Government for environmental management, availability of capacities for environment management, the results of the preliminary inventory and changes in the transformers inventory (new commissioning and decommissioning of transformers). The national consultants were assisted by three international consultants (consultant in PCB management, consultant in chemical safety and consultant in PCB treatment technologies), who visited Laos several times to discuss the most efficient concept to be included in the present project. Much attention was paid to discussions with the stakeholders, in the first run, MONRE and EDL and evaluation of co-financing contribution required from the Government.

The review shows that the most changes happened in the legislation improvement/updating due to the intention of the Government to introduce the requirements of the SC on POPs in the national legislation. However, due to the economic problems, not many changes happened at the industrial and energy sectors: EDL and other owners of transformers have a low awareness level about the technological options for safe decontamination of their equipment. The lack of investments in new equipment makes them repair the damaged transformers instead of their decommissioning and procurement new ones.

Based on the information collected during that PPG phase, which showed that most of contamination is of low degree, it was decided that the project will make accent on decontamination of low-contaminated equipment. This was approved as the most efficient approach to the total PCB-management problem in Laos. The volume of high-contaminated oil and wastes is small and could be disposed by the same technology after the dilution and/or repeated decontamination cycles. Although this will be more expensive, but, in general, it will be more economic than procure a suitable technology. It was estimated even more economic than export a small volume of contaminated materials, because of high constant costs for packaging, paper works and transportation.

Hereafter the approved PPG budget and current expenditures spent and committed.

⁵ If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

PPG Grant Approved at PIF:			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
1. Refine the preliminary inventory	10,000	5,000	
2. Define the strategies for the sustainability of the environmentally sound management and PCB-containing equipment and waste	28,000	20,000	8,000
3. Stakeholders analysis and mobilization of co-financing	10,000	10,000	8,000
4. Development of CEO endorsement document and endorsement by stakeholders	10,000	10,000	
Total	<u>58,000</u>	<u>42,000</u>	<u>16,000</u>

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

N/A

ANNEX E: TIMELINE OF ACTIVITIES

Timeline for Component 1		Year 1				Year 2				Year 3				Year 4			
		1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q
Component 1:	Policy, legal framework and institutional capacity																
Outcome 1.:	Strengthening of institutional, legislation, policy framework and enforcement for management of PCBs																
Output 1.1:	Specific policy / legal framework drafted, adjusted and enacted in accordance with the requirements of the SC																
Activity 1.1.1:	Review and assessment of the existing legal and regulatory framework on PCBs and drafting of a gap analysis report																
Activity 1.1.2:	Development and adoption of a PCB official guidance.																
Activity 1.1.3:	Communication and dissemination on the official guidance.																
Activity 1.1.4:	Development of a PCB regulatory legislation.																
Activity 1.1.5:	Adoption of a PCB regulatory legislation.																
Output 1.2:	Strategy for enforcement developed and implemented																
Activity 1.2.1:	Design and adopt an enforcement strategy on PCBs, including a PCB labeling and tracking system.																
Activity 1.2.2:	Training for local authorities, environmental inspectors and decision makers at the local level on the PCBs enforcement strategy.																
Activity 1.2.3:	Implement the enforcement strategy, including a PCB labeling and tracking system																
Output 1.3:	Technical and human capacities for management of PCBs strengthened																
Activity 1.3.1:	Training of environmental inspectors on the SC, PCBs and corresponding legislations																
Activity 1.3.2:	Training for local authorities and decision makers at the local level on the SC and PCBs																
Activity 1.3.3:	Establishment of a training centre within EDL for providing training to other organizations																

Timeline for Component 2		Year 1				Year 2				Year 3				Year 4			
		1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q
Component 2:	Technology transfer for sound management of PCBs in energy sector+F36																
Output 2.1:	Detailed inventory and labeling of at least 1000 transformers undertaken at major PCB owners																
Activity 2.1.1:	Establish, equip and train the inventory team																
Activity 2.1.2:	Update the inventory of equipment possibly contaminated by PCBs countrywide																
Activity 2.1.3:	Carrying out sampling and analysis of 1000 transformers																
Output 2.2:	PCB phase-out plan developed and implemented																
Activity 2.2.1:	Establish a data base for the PCBs contaminated equipment																
Activity 2.2.2:	Select, assess and authorize infrastructures for PCB storage and disposal																
Activity 2.2.3:	Establish system and procedures for the transportation of PCBs equipment																
Activity 2.2.4:	Training of the relevant operators on the Environmentally safe packaging, storage and transportation of PCBs is carried out																
Output 2.3:	Technical options selected for the safe disposal of 250 tones of PCBs containing equipment and wastes																
Activity 2.3.1:	PCB disposal options are reviewed and assessed based on international standards, availability, country needs and capabilities.																
Activity 2.3.2:	Technical Specification for PCBs disposal technologies are drafted																
Output 2.4:	Operation of a decontamination BAT sustained after the termination of the project																
Activity 2.4.1:	PCB disposal technologies and services are procured and established																
Activity 2.4.2:	Operators of PCB management facility selected and trained																
Activity 2.4.3:	Transportation of 250 tons of PCBs to the disposal facilities																
Activity 2.4.4:	Safe disposal of 250 tons of PCBs is carried out																

Timeline for Component 3		Year 1				Year 2				Year 3				Year 4			
		1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q
Component 3:	Public awareness raising, education, dissemination of project results																
Output 3.1:	Health and environmental impact issues assessed																
Activity 3.1.1:	Review existing studies on health and environmental impact of PCB in LAO																
Activity 3.1.2:	Develop draft environmental quality standards for PCBs																
Activity 3.1.3:	Development draft occupational standards for PCBs																
Activity 3.1.4:	Development and dissemination of worker safety guidelines for the stakeholders																
Output 3.2:	Stakeholder engagement including NGOs and civil society established																
Activity 3.2.1:	Identification of stakeholders: NGOs, PCB owners, academic and scientific institutions, central and local authorities																
Activity 3.2.2:	Develop a PCB raising awareness plan																
Activity 3.2.3:	Training and educational material developed																
Activity 3.2.4:	Awareness raising programmes implemented																

ANNEX F: BUDGET GEF GRANT

	GEF Outputs	Budget lines	Description	Year 1		Year 2		Year 3		Year 4		Total	
				US\$	w/m	US\$	w/m	US\$	w/m	US\$	w/m	US\$	w/m
Output 1.1:	Specific policy / legal framework drafted, adjusted and enacted in accordance with the requirements of the SC	11-00	Consultants	20,000	2.00	0	0.00	0	0.00	0	0.00	20,000	2.00
		17-00	Nat. Experts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		51-00	Sundries	4,000		0		0		0		4,000	
		15-00	Project staff travel	6,000		0		0		0		6,000	
		45-00	Equipment	0		0		0		0		0	
		30-00	Workshops	10,000		0		0		0		10,000	
		21-00	Subcontracts	0		0		0		0		0	
		Sub-total		40,000	2.00	0	0.00	0	0.00	0	0.00	40,000	2.00
Output 1.2:	Strategy for enforcement developed and implemented	11-00	Consultants	0	0.00	10,000	1.00	0	0.00	0	0.00	10,000	1.00
		17-00	Nat. Experts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		51-00	Sundries	0		3,000		0		0		3,000	
		15-00	Project staff travel	0		0		0		0		0	
		45-00	Equipment	0		0		0		0		0	
		30-00	Workshops	0		3,000		0		0		3,000	
		21-00	Subcontracts	0		4,000		0		0		4,000	
		Sub-total		0	0.00	20,000	1.00	0	0.00	0	0.00	20,000	1.00
Output 1.3:	Technical and human capacities for management of PCBs strengthened	11-00	Consultants	0	0.00	25,000	2.50	0	0.00	0	0.00	25,000	2.50
		17-00	Nat. Experts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		51-00	Sundries	0		0		0		0		0	
		15-00	Project staff travel	0		2,000		0		0		2,000	
		45-00	Equipment	0		0		0		0		0	
		30-00	Workshops	0		13,000		0		0		13,000	
		21-00	Subcontracts	0		0		0		0		0	
		Sub-total		0	0.00	40,000	2.50	0	0.00	0	0.00	40,000	2.50
Sub Total for Component 1				40,000	2.00	60,000	3.00	0	0.00	0	0.00	100,000	5.00

	GEF Outputs	Budget lines	Description	Year 1		Year 2		Year 3		Year 4		Total	
				US\$	w/m	US\$	w/m	US\$	w/m	US\$	w/m	US\$	w/m
Output 2.1:	Detailed inventory and labelling of at least 1000 transformers undertaken at major PCB owners	11-00	Consultants	16,000	1.50	4,000	0.50	0	0.00	0	0.00	20,000	2.00
		17-00	Nat. Experts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		51-00	Sundries	0		0		0		0		0	
		15-00	Project staff travel	0		0		0		0		0	
		45-00	Equipment	71,000		24,000		0		0		95,000	
		30-00	Workshops	5,000		0		0		0		5,000	
		21-00	Subcontracts	0		0		0		0		0	
		Sub-total		93,000	1.50	28,000	0.50	0	0.00	0	0.00	120,000	2.00
Output 2.2:	PCB phase-out plan developed and implemented	11-00	Consultants	0	0.00	9,000	1.00	0	0.00	0	0.00	9,000	1.00
		17-00	Nat. Experts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		51-00	Sundries	0		1,000		0		0		1,000	
		15-00	Project staff travel	0		3,000		0		0		3,000	
		45-00	Equipment	0		15,000		0		0		15,000	
		30-00	Workshops	0		26,000		0		0		26,000	
		21-00	Subcontracts	0		17,000		0		0		17,000	
		Sub-total		0	0.00	70,000	1.00	0	0.00	0	0.00	70,000	1.00
Output 2.3:	Technical options selected for the safe disposal of 250 tones of PCBs containing equipment and wastes	11-00	Consultants	8,000	0.50	2,000	0.00	0	0.00	0	0.00	10,000	1.00
		17-00	Nat. Experts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		51-00	Sundries	1,000		0		0		0		1,000	
		15-00	Project staff travel	7,000		2,000		0		0		9,000	
		45-00	Equipment	0		0		0		0		0	
		30-00	Workshops	3,000		2,000		0		0		5,000	
		21-00	Subcontracts	3,000		2,000		0		0		5,000	
		Sub-total		22,000	0.50	8,000	0.00	0	0.00	0	0.00	30,000	1.00
Output 2.4:	Operation of a decontamination BAT sustained after the termination of the project	11-00	Consultants	0	0.00	8,000	0.50	17,000	1.50	5,000	0.50	30,000	3.00
		17-00	Nat. Experts	0	0.00	0	0.00	8,000	2.00	8,000	2.00	15,000	4.50
		51-00	Sundries	0		0		2,000		2,000		3,000	
		15-00	Project staff travel	0		12,000		9,000		6,000		27,000	
		45-00	Equipment	0		550,000		150,000		0		700,000	
		30-00	Workshops	0		12,000		13,000		5,000		30,000	
		21-00	Subcontracts	0		47,000		28,000		0		75,000	
		Sub-total		0	0.00	629,000	0.50	226,000	3.50	25,000	2.50	880,000	7.00
Sub Total for Component 2				115,000	2.00	734,000	2.00	226,000	3.50	25,000	2.50	1,100,000	10.50

	GEF Outputs	Budget lines	Description	Year 1		Year 2		Year 3		Year 4		Total	
				US\$	w/m	US\$	w/m	US\$	w/m	US\$	w/m	US\$	w/m
Output 3.1:	Health and environmental impact issues assessed	11-00	Consultants	8,000	0.50	17,000	1.50	0	0.00	0	0.00	25,000	2.50
		17-00	Nat. Experts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		51-00	Sundries	4,000		6,000		0		0		10,000	
		15-00	Project staff travel	0		0		0		0		0	
		45-00	Equipment	0		0		0		0		0	
		30-00	Workshops	2,000		0		0		0		2,000	
		21-00	Subcontracts	0		3,000		0		0		3,000	
		Sub-total		14,000	0.50	26,000	1.50	0	0.00	0	0.00	40,000	2.50
Output 3.2:	Stakeholder engagement including NGOs and civil society established	11-00	Consultants	8,000	1.00	7,000	0.50	0	0.00	0	0.00	15,000	1.50
		17-00	Nat. Experts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		51-00	Sundries	3,000		5,000		0		0		8,000	
		15-00	Project staff travel	0		0		0		0		0	
		45-00	Equipment	1,000		1,000		0		0		2,000	
		30-00	Workshops	5,000		0		0		0		5,000	
		21-00	Subcontracts	0		0		0		0		0	
		Sub-total		16,000	1.00	14,000	0.50	0	0.00	0	0.00	30,000	1.50
Sub Total for Component 3				31,000	1.50	39,000	2.00	0	0.00	0	0.00	70,000	3.50
	GEF Outputs	Budget lines	Description	Year 1		Year 2		Year 3		Year 4		Total	
				US\$	w/m	US\$	w/m	US\$	w/m	US\$	w/m	US\$	w/m
Output 4.1:	M&E mechanism designed and implemented	11-00	Consultants	6,000	0.50	1,000	0.00	16,000	1.50	16,000	1.50	40,000	3.50
		17-00	Nat. Experts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		51-00	Sundries	0		0		0		0		0	
		15-00	Project staff travel	7,000		3,000		3,000		2,000		15,000	
		45-00	Equipment	6,000		1,000		1,000		1,000		10,000	
		30-00	Workshops	0		0		0		0		0	
		21-00	Subcontracts	0		0		0		0		0	
		Sub-total		19,000	0.50	6,000	0.00	21,000	1.50	19,000	1.50	65,000	3.50
Sub Total for Component 4				19,000	0.50	6,000	0.00	21,000	1.50	19,000	1.50	65,000	3.50
Project total				204,000	6.00	839,000	7.50	247,000	5.50	44,000	4.00	1,335,000	23.00
Project management cost		11-00	Consultants	6,000	0.50	8,000	0.50	8,000	0.50	8,000	0.50	30,000	3.00
		17-00	Nat. Experts	2,000	0.50	3,000	1.00	3,000	1.00	3,000	1.00	10,000	3.00
		51-00	Sundries	2,000		3,000		3,000		3,000		10,000	
		15-00	Project staff travel	2,000		3,000		3,000		3,000		10,000	
		45-00	Equipment	1,000		1,000		1,000		1,000		5,000	
		30-00	Workshops	0		0		0		0		0	
		21-00	Subcontracts	0		0		0		0		0	
		Sub-total		13,000	1.00	17,000	1.50	17,000	1.50	17,000	1.50	65,000	5.50
Project total including management cost				217,000	7.50	856,000	9.00	264,000	7.00	62,000	5.50	1,400,000	29.00

ANNEX F: SUMMARY OF FUND DISTRIBUTION

Titles	Financing		
	GEF	COFI	Sum GEF+COF
Component 1: Policy, legal framework and institutional capacity	100,000	400,000	500,000
Outcome 1. Strengthening of institutional, legislation, policy framework and enforcement for management of PCBs			
<i>Output 1.1: Specific policy / legal framework drafted, adjusted and enacted in accordance with the requirements of the SC</i>	<i>40,000</i>	<i>170,000</i>	<i>210,000</i>
Activity 1.1.1: Review and assessment of the existing legal and regulatory framework on PCBs and drafting of a gap analysis report	10,000	20,000	30,000
Activity 1.1.2: Development and adoption of a PCB official guidance.	10,000	20,000	30,000
Activity 1.1.3: Communication and dissemination on the official guidance.	10,000	40,000	50,000
Activity 1.1.4: Development of a PCB regulatory legislation.	10,000	40,000	50,000
Activity 1.1.5: Adoption of a PCB regulatory legislation.	-	50,000	50,000
<i>Output 1.2: Strategy for enforcement developed and implemented</i>	<i>20,000</i>	<i>130,000</i>	<i>150,000</i>
Activity 1.2.1: Design and adopt an enforcement strategy on PCBs, including a PCB labeling and tracking system	10,000	40,000	50,000
Activity 1.2.2: Training for local authorities, environmental inspectors and decision makers at the local level on the PCBs enforcement strategy.	10,000	40,000	50,000

Activity 1.2.3: Implement the enforcement strategy, including a PCB labeling and tracking system	-	50,000	50,000
Output 1.3: Technical and human capacities for management of PCBs strengthened	<i>40,000</i>	<i>100,000</i>	<i>140,000</i>
Activity 1.3.1: Training of environmental inspectors on the SC, PCBs and corresponding legislations	20,000	30,000	50,000
Activity 1.3.2: Training for local authorities and decision makers at the local level on the SC and PCBs	20,000	30,000	50,000
Activity 1.3.3: Establishment of a training centre within EDL for providing training to other organizations	-	40,000	40,000
Component 2: Technology transfer for sound management of PCBs in energy sector	1,100,000	4,400,000	5,500,000
Outcome 2. Application of BATs in all stages of PCB waste management and disposal			
Output 2.1: 1 Detailed inventory and labeling of at least 1000 transformers undertaken at major PCB owners	<i>120,000</i>	<i>480,000</i>	<i>600,000</i>
Activity 2.1.1: Establish, equip and train the inventory team	20,000	80,000	100,000
Activity 2.1.2: Update the inventory of equipment possibly contaminated by PCBs countrywide	50,000	200,000	250,000
Activity 2.1.3: Carrying out sampling and analysis of 1000 transformers	50,000	200,000	250,000
Output 2.2: PCB phase-out plan developed and implemented	<i>70,000</i>	<i>280,000</i>	<i>350,000</i>
Activity 2.2.1: Establish a data base for the PCBs contaminated equipment	20,000	80,000	100,000

Activity 2.2.2 Select, assess and authorize infrastructures for PCB storage and disposal	10,000	40,000	50,000
Activity 2.2.3: Establish system and procedures for the transportation of PCBs equipment	10,000	40,000	50,000
Activity 2.2.4 Training of the relevant operators on the Environmentally safe packaging, storage and transportation of PCBs is carried out	30,000	120,000	150,000
Output 2.3: Technical options selected for the safe disposal of 250 tones of PCBs containing equipment and wastes	<i>30,000</i>	<i>120,000</i>	<i>150,000</i>
Activity 2.3.1: PCB disposal options are reviewed and assessed based on international standards, availability, country needs and capabilities.	10,000	40,000	50,000
Activity 2.3.2: Technical Specification for PCBs disposal technologies are drafted	20,000	80,000	100,000
Output 2.4: Operation of a decontamination BAT sustained after the termination of the project	<i>880,000</i>		
Activity 2.4.1: PCB disposal technologies and services are procured and established			
Activity 2.4.2: Operators of PCB management facility selected and trained			
Activity 2.4.3: Transportation of 250 tons of PCBs to the disposal facilities			
Activity 2.4.4: Safe disposal of 250 tons of PCBs is carried out			
Component 3 Public awareness raising, education, dissemination of project results	70,000	250,000	320,000
Outcome 3			
Output 3.1: Health and environmental impact issues assessed	<i>40,000</i>	<i>150,000</i>	<i>190,000</i>
Activity 3.1.1: Review existing studies on health and environmental impact of PCB in LAO	-	40,000	40,000

Activity 3.1.2: Develop draft environmental quality standards for PCBs	10,000	40,000	50,000
Activity 3.1.3: Development draft occupational standards for PCBs	20,000	40,000	60,000
Activity 3.1.4: Development and dissemination of worker safety guidelines for the stakeholders	10,000	30,000	40,000
Output 3.2: Stakeholder engagement including NGOs and civil society established	<i>30,000</i>	<i>100,000</i>	<i>130,000</i>
Activity 3.2.1: Identification of stakeholders: NGOs, PCB owners, academic and scientific institutions, central and local authorities		25,000	25,000
Activity 3.2.2: Develop a PCB raising awareness plan	10,000	25,000	35,000
Activity 3.2.3: Training and educational material developed	20,000	25,000	45,000
Activity 3.2.4: Awareness raising programmes implemented		25,000	25,000
Component 4.: Impact monitoring and evaluation	65,000	250,000	315,000
Outcome 4.: Assessment and monitoring of the impact of project activities			
<i>Output 4.1: M&E mechanism designed and implemented</i>	<i>65,000</i>	<i>250,000</i>	<i>315,000</i>
Activity 4.1.1: Establish the Project Steering Committee and hold inception meeting	-	40,000	40,000
Activity 4.1.2: Recruit technical experts based on project requirements	-	40,000	40,000
Activity 4.1.3: Measure impact indicators on an annual basis	-	20,000	20,000
Activity 4.1.4: Prepare Annual Project Reports, Annual Work Plan and Project Implementation Reviews	-	30,000	30,000
Activity 4.1.5: Hold annual Project Steering Committee meetings	20,000	50,000	70,000

Activity 4.1.6: Carry out mid-term external evaluation	10,000	20,000	30,000
Activity 4.1.7: Carry out final external evaluation	20,000	-	20,000
Activity 4.1.8: Complete the Terminal Report	15,000	30,000	45,000
Activity 4.1.9: Establish a project management information system (MIS).		20,000	20,000
Project management cost	65,000	300,000	365,000
PROJECT TOTAL	1,400,000	5,600,000	7,000,000

ANNEX G: SUMMARY OF UNIDO IN-KIND CONTRIBUTION

Nature of in-kind co-financing	Year 1	Year 2	Year 3	Year 4	Total
UNIDO Laos in-Country focal point contribution (in terms of staff time, space and services, related to: oversight of consultant services, monitoring and evaluation and consultation with local stakeholders.)	5,000	5,000	5,000	5,000	20,000
Participation of project beneficiaries/stakeholders in non-GEF funded UNIDO events (participation in workshops, conferences and consultation meetings).	5,000	5,000	5,000	5,000	20,000
Usage of UNIDO COMFAR for feasibility studies	4,000				4,000
Publishing information in UNIDO's publication and news leaflets on the progress of the project	1,500	1,500	1,500	1,500	6,000