



# PROJECT IDENTIFICATION FORM (PIF) <sup>1</sup>

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

## PART I: PROJECT IDENTIFICATION

Project Title:	Integrated and Environmentally Sound PCBs management in Ecuador		
Country(ies):	Ecuador	GEF Project ID: <sup>2</sup>	4741
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	4827
Other Executing Partner(s):		Submission Date:	2011-11-30
GEF Focal Area (s):	Persistent Organic Pollutants	Project Duration (Months)	42
Name of parent program (if applicable):		Agency Fee (\$):	200,000
<ul style="list-style-type: none"> <li>For SFM/REDD+ <input type="checkbox"/></li> </ul>			

### A. FOCAL AREA STRATEGY FRAMEWORK<sup>3</sup>:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
(select) CHEM-1	Outcome 1.4. POPs waste prevented, managed, and disposed of, and POPs contaminated sites managed in an environmentally sound manner.	Indicator 1.4.1 Amount of PCBs and PCB-related wastes disposed of, or decontaminated; measured in tons as recorded in the POPs tracking tool.	GEFTF	1,590,000	6,539,000
(select) CHEM-1	Outcome 1.5 Country capacity built to effectively phase out and reduce releases of POPs.	Indicator 1.5.2. Progress in developing and implementing a legislative and regulatory framework for environmentally sound management of POPs, and for the sound management of chemicals in general, as recorded in the POPS tracking tool.	GEFTF	230,000	761,000
(select) (select)			(select)		
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(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)	Others		(select)		
Sub-Total				1,820,000	7,300,000
Project Management Cost <sup>4</sup>			GEFTF	<b>180,000</b>	500,000
<b>Total Project Cost</b>				<b>2,000,000</b>	<b>7,800,000</b>

### B. PROJECT FRAMEWORK

<sup>1</sup> It is very important to consult the PIF preparation guidelines when completing this template.

<sup>2</sup> Project ID number will be assigned by GEFSEC.

<sup>3</sup> Refer to the reference attached on the [Focal Area Results Framework](#) when filling up the table in item A.

<sup>4</sup> GEF will finance management cost that is solely linked to GEF financing of the project.

**Project Objective: To promote the sound management of PCB's contaminated oil, equipment, sites and wastes in Ecuador, according to the Basel and Stockholm conventions.**

<b>Project Component</b>	<b>Grant Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>Indicative Grant Amount (\$)</b>	<b>Indicative Cofinancing (\$)</b>
1. Institutional Capacity Strengthening for sound and environmentally friendly management of PCBs.	TA	<p>A. Improved legislation about hazardous chemicals, including PCBs-COPs.</p> <p>B. Improved institutional capacity to adequately manage PCBs, including the skills to present proper reports to the Convention Secretariat.</p> <p>C. Awareness raised amongst the general public and the private sector about the importance of sound management of PCBs.</p>	<p>A.1. PCB legislation reviewed and updated.</p> <p>A.2. Norms and standards for environmentally sound management of PCBs are developed and adopted.</p> <p>B.1. National PCB Inventory updated and improved. Labeling of stocks.</p> <p>B.2. PCB stocks-tracking information system.</p> <p>B.3. National PCB management plan until 2020 elaborated.</p> <p>C.1. Sound management of PCBs training manual elaborated and published.</p> <p>C.2. Training of firms in the implementation of PCB management plans.</p> <p>C3. Communications campaign, knowledge dissemination</p>	GEFTF	230,000	750,000
2. Environmentally Sound Management of PCBs.	TA	D. Management practices related to PCBs are improved.	<p>D.1. Technical guidelines for PCB sound management are established.</p> <p>D.2. Safety regulations are revised, improved and implemented.</p> <p>D.3. Feasibility studies of different in-country and out-of-country sound management and disposal options for oil, equipment and wastes contaminated with PCBs.</p> <p>D.4. Prioritization of the different options available for disposal and/or management of oil, equipment and wastes contaminated with PCBs.</p>	GEFTF	450,000	150,000

			D.5. Pilot and replicable projects for the proper disposal of PCB-stocks executed and evaluated.			
3. Environmentally sound storage and disposal of PCBs waste.	TA	E. Proper storage of PCB-contaminated oil, equipment and other wastes.  F. Proper disposal of 50 % of currently identified stocks (750 MT).	E.1. Contaminated equipments, oil and wastes are classified and properly stored.  E.2. Environmental management plans for temporary storage facilities.  F.1. Coordination mechanisms between the Government and private holders of PCBs developed.  F.2. Disposal plan developed and disseminated.  F.3. Removal of PCB stocks for Galápagos  F4. Verification of capacity, safety and environmental performance of in-country disposal options  F.5. Disposal (in-country or abroad) of 750 MT PCB contaminated oils, equipments and wastes.	GEFTF	1,140,000	6,400,000
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
			Sub-Total		1,820,000	7,300,000
			Project Management Cost <sup>5</sup>	GEFTF	180,000	500,000
			<b>Total Project Costs</b>		<b>2,000,000</b>	<b>7,800,000</b>

**C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)**

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount (\$)
National Government	Government of Ecuador	In-kind	4,960,000
GEF Agency	UNDP-Ecuador	In-kind	40,000
Private Sector	Electricity Companies	Grant	2,800,000
(select)		(select)	

<sup>5</sup> Same as footnote #3.

(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
<b>Total Cofinancing</b>			7,800,000

**D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>**

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

<sup>1</sup> 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

<sup>2</sup> Please indicate fees related to this project.

## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

A.1.1 the [GEF focal area/LDCF/SCCF](#) strategies:

The project and the activities proposed are consistent with the Chemicals Focal Area Strategy, whose objective is “To promote the sound management of chemicals throughout their life-cycle in ways that lead to the minimization of significant adverse effects on human health and the global environment”. Moreover, objective (1) of the Chemicals Focal Area is “Phase out POPs and reduce POPs releases”. The specific contribution of each of the project’s components to the different Program outcomes and indicators are presented next:

<b>GEF-5 Outcomes and Indicators</b>	<b>Project Contribution</b>
<u>Outcome 1.4: POPs waste prevented, managed, and disposed of, and POPs-contaminated sites managed in an environmentally sound manner.</u>	
<b>Indicator 1.4.1. Amount of PCBs and PCB-contaminated wastes disposed of, or decontaminated; measured in tons as recorded in the POPs tracking tool.</b>	<p><b>Project Component 2: Sound and environmentally friendly management of PCBs.</b> Several steps are needed to be able to dispose of PCB-contaminated wastes. A crucial need is to establish appropriate technical guidelines and to revise, significantly improve and implement upgraded security rules for handling of PCBs. Another important step is to closely analyze the list of options to deal with the disposal of PCBs and their cost effectiveness, including in-country and export of PCBs. Establishing priorities amongst these will guide the future direction of the program. These alternatives will be tested by developing pilot experiences and evaluating the results.</p> <p><b>Project Component 3: Environmentally sound storage and disposal of PCBs.</b> Storing PCBs temporarily, while a definite solution to dispose of them is implemented requires building adequate infrastructure and the corresponding management plans. It is expected that 750 metric tons of contaminated oil will be disposed of (that represents 50% of the existing PCBs inventory in liquid state in Ecuador). Coordination mechanisms are to be established between the Government and private owners of PCB-contaminated waste to elaborate a “PCBs disposal plan” based upon an improved inventory. According to the results PCBs will be disposed of nationally or internationally.</p>
<u>Outcome 1.5: Country capacity is increased to effectively phase out and reduce releases of POPs.</u>	
<b>Indicator 1.5.2 Progress in developing and implementing a legislative and regulatory framework for environmentally sound management of POPs, and for the sound management of chemicals in general, as recorded in the POPS tracking tool.</b>	<p><b>Project Component 1: Institutional Capacity Strengthening for sound and environmentally friendly management of PCBs.</b> The Project seeks to improve the legal framework regarding the sound management of PCBs and the strengthening of the institutional capacities to, amongst other things improve the skills needed to present adequate information to the Convention’s Secretariat as required by the commitments.</p> <p>A very important task is to improve, expand and update the existing registries and accounting of oils, equipment, sites and wastes contaminated with PCBs in Ecuador, to feed an effective and updated information system.</p> <p>By providing information and disseminating knowledge about PCBs to the private sector and the general public, the project expects to increase compliance and increase participation. Also, by creating an Integrated Management Training Manual and providing training sessions for the private sector.</p>

A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities:

N.A.

A.2. National Strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

Ecuador's National Congress ratified the Stockholm Convention on June 7, 2004. **Since then, the Convention has required the adoption of measures to eliminate the production, the use, import and export of PCBs and other POPs.** Currently, the country has preliminary national POPs inventories that were developed with GEF support in 2003-2004. These inventories include dioxins and furans, POPs Pesticides and PCBs. There are also studies that deal with the health and environmental risks associated with the use of POPs. Using results from those studies the "National Implementation Plan of the Stockholm Convention" was developed in a participatory manner and with the participation of several institutions. A first version was presented at the Conference of the Parties in 2006. One of the specific objectives of this Plan was "total elimination of PCBs in Ecuador in 2020.

In 2008 a new Constitution was approved, which specifically refers to POPs in Article 15, Chapter 2 in reference to a clean and healthy environment: "... *the development, production, storage, trade, import, transportation and use of chemical, biological and nuclear weapons, persistent organic pollutants (POPs), internationally-banned pesticides and experimental technologies, ... is forbidden*".

Furthermore, Objective 4 of the "National Well-Living Plan" (equivalent to a national development plan) for 2009-2013 seeks to "guarantee Nature's rights and promote a sustainable and healthy environment" and, more concretely, Goal 4.4.3 is to "reduce 40% the amount of PCBs in 2013". Both are aligned with the Stockholm Convention.

In this context and to fulfill the State's commitments as a party to the Convention the Government of Ecuador updated the aforementioned plan was revised with the intention of improving sound management of PCBs. This Project addresses all three objectives set forth in the National Plan:

1. *Design intervention strategies to address specific problems and establish criteria to ensure the elimination when possible, and the reduction of POPs under the Stockholm Convention obligations;*
2. *Strengthen the institutional framework and coordination among stakeholders for the implementation of the various intervention strategies*
3. *Raise awareness, and train different stakeholders, about the risks associated with the use of POPs, and promote research.*

## **B. PROJECT OVERVIEW:**

B.1. Describe the baseline project and the problem that it seeks to address:

### **Context and Background:**

The electricity sector, **the main holder of PCBs is Ecuador**, is currently regulated by two authorities: the Ministry of Electricity and Renewable Energy and the National Electrification Council

(CONELEC). The latter works as an environmental regulation agency for enterprises engaged in the generation, transmission and distribution of electric energy through enforcement of Environmental Bylaw for Electric Activities. This enforcement activity includes issuance of “environmental licenses” to those found in compliance of the regulations, including implementation of verified Environmental Management Plans. In line with National Development plan objectives, management of PCBs is seen as a priority in these Environmental Management Plans given the expected important environmental and health risks.

In order to safely carry out their Environmental Management Plans and thus fulfill its commitments with the Stockholm Convention, enterprises as well as authorities in Ecuador needs to strengthen its capacities for the sound management of contaminated oil, hardware and waste.

Ecuador has limited experience in managing PCBs and lacks the adequate infrastructure, equipment and technologies to do so.

A preliminary inventory, carried out in 2003, estimated that there are currently more than 1,400 tons (metric) of PCBs contaminated oil. This estimative is still partial and limited to public enterprises. The current management of damaged or obsolete equipments is not environmentally sound and there is lack of knowledge and information about technical standards and procedures required to manipulate and dispose of these substances. Electric utilities are continuing making progress in the characterization of equipments to determine PCB contents, especially in transformers.

Ecuador’s National Implementation Plan - NIP, pointed out an urgent need to establish temporary storage sites for hardware and oil contaminated. Due to the legal obligations associated with the environmental licenses of the PCB holders, temporary storage sites are being prepared to hold retired and soon-to-be-retired equipments, until the country can offer an alternative for the phasing out of PCBs stocks identified.

Currently there are no facilities for the safe and adequate disposal of PCBs, neither the knowledge nor technical expertise to operate them. Although some trials were performed for PCBs destruction in concentrations less than 50ppm in cement kilns as a part of project “New associations with local authorities for sound management of hazardous wastes and other residues within the Basel Convention framework in South America”, there is no fully certified disposal facility in the country. For testing purposes restricted licenses for co-processing hazardous wastes were issued, but the incinerators capacity and standards must be fully addressed.

A committee, with representatives from the Ministry of the Environment, electricity companies and CONELEC, is preparing a manual with technical information about the environmentally sound management of oils, equipment and wastes contaminated with PCBs.

This work faces a number of challenges due to following:

- Methodology used in previous inventory provides no information about PCB concentrations. Only a limited number of pieces of hardware were sampled (about 400). As a result it is difficult to establish priorities and propose alternatives for their adequate treatment.
- The existing information is not suited for decision-making in terms of risk reduction strategies according to the concentrations found in different oils. Only some firms have started to improve and elaborate definite and improved inventories.
- There is still no national position about how to manage existing PCBs in terms of where to treat and dispose of them (in Ecuador or abroad) or about the technical conditions required.
- Existing inventories are not providing the needed information for sound management.

Since 2003 a limited number of activities towards the sound management of PCBs have been implemented in Ecuador both by public and private sector. There is strong interest in supporting the sound management and destruction of PCBs both politically as well as financially. These promising initiatives notwithstanding, the country still faces significant challenges regarding management of PCBs. However, given the lack of a well structured approach to meet the commitments set forth in international conventions, as well as in the National Well Living Plan, Ecuador still needs technical and financial assistance. The GEF funded project is expected to be able to generate exactly that structural change.

#### Barriers:

From above analysis it is clear that the first barrier for the sound management of PCBs in Ecuador is absence of a detailed and accurate PCBs inventory, which would allow the identification, at the national level, of contaminated oil and hardware, its PCBs concentration and its location. This is needed to prioritize the actions required to eliminate them in an environmentally sound manner and considering its concentration and location to minimize risks.

A confusing legislative structure for PCBs results in a system that is difficult to enforce. Another important barrier for adequate management of PCBs, and identified in an updated National Profile for Management of Chemical Substances, is the lack of monitoring, control and enforcement of the legislation.

Additional barriers (as described in the project components) include a well structured long term planning both for capacity building and institutional strengthening through implementing of training programs in sound management of PCBs at different levels of government and in the private sector as well as technology transfer, improved storage and management practices, and a plan for the final disposal of PCB containing equipment and oils domestically or internationally. These barriers will be addressed in the present project.

#### Project Strategy and Design:

The project objective is to dispose of **750 MT estimated** of contaminated oil, equipments and other wastes (such as transformers cases) in an environmentally soundly manner. **To achieve that goal, a comprehensive inventory must be carried out to sort the exactly types and quantities of contaminated materials.** Also, the project will support increasing the institutional capacity and skills needed to manage PCBs in an integrated and environmentally sound fashion. This will be achieved by establishing an Environmental Management System (EMS) for PCBs that will include the relevant stakeholders to meet the Country's obligation under the Stockholm Convention. The EMS will include actions and responsibilities for the different authorities as well as for the owners of oil, equipment and wastes contaminated with PCBs.

The strengthening of institutional capacity component of the project includes several activities. First, the project will improve the regulations associated to management of POPs in general, but PCBs in particular, by updating existing norms and developing specific legislation. Second, an inventory of PCBs will be carried out, improving and expanding what was done in 2003. This is an indispensable tool needed to improve the country's capacity to deal with this problem. The inventory will be complemented by an information system that may be updated continuously on PCBs stocks. Finally, an Integrated Management Manual will be developed to increase knowledge and share information with private and public entities. It will be used for training purposes also.

The sound and environmentally friendly management of PCBs component of the project intends to help Ecuador improve existing practices. The establishment of technical guidelines and improving



security rules will be a step in that direction. Moreover, an analysis of the options available to safely dispose of PCBs-related oil, hardware and wastes is needed to make decisions and determine a course of action. The particular conditions, benefits and costs of each option need to be outlined and presented in a coherent fashion.

The project will create national capacities to deal with PCBs throughout the whole life cycle, which at the moment does not exist in Ecuador. It will also start dealing with PCB management in a structured way, which will allow PCB possessors to make a long term planning with respect of PCB containing equipment. By developing the experience, creating national capacities and facilitating “learning by doing” it is expected that the Project will help Ecuador make long term planning for the management and disposal of their PCBs. Furthermore, the project would develop concrete guidelines and a timeline to meet the government objective of eliminating PCBs by 2020. An explicit long-term planning output has been added under outcome 1 (output B3.).

The Project will undertake feasibility studies for disposal of various PCB waste streams and develop options for treating PCB stocks (nationally or internationally). This will reduce the unit cost of disposing of remaining stocks and therefore contribute to sustainability and long-term planning. Please note that existing preliminary PCB inventory is likely to be incomplete and underestimated in terms of quantity.

The project will also focus on management practices in the servicing of equipment that may contain PCBs, and a strong effort will be made to avoid any further cross contamination of transformers. This is important to limit the size of the problem over time.

Therefore, the Project Design can be summarized as:

**Component 1 - Institutional Capacity Strengthening for sound and environmentally friendly management of PCBs.**

**Outcome 1.1** – A. Improved legislation about hazardous chemicals, including PCBs-COPs.

*Activities:*

- Revision of regulations associated to management of POPs in general
- Development of an Integrated Management Manual

**Outcome 1.2** – Improved institutional capacity to adequately manage PCBs, including the skills to present proper reports to the Convention Secretariat.

*Activities:*

- Comprehensive inventory of the PCBs
- PCBs stocking tracking system development

**Outcome 1.3** – Awareness raised amongst the general public and the private sector about the importance of sound management of PCBs.

*Activities:*

- Awareness of an Integrated Management Manual
- Training on PBC Management Plans
- Communications and knowledge dissemination

**Component 2 - Environmentally Sound Management of PCBs**

**Outcome 2.1** – Management practices related to PCBs improved.

*Activities:*

- Stakeholders Consultation Meetings
- Standardization of data, procedures and guidelines development
- Improve and implement upgraded security rules for handling of PCBs
- Cost-effectiveness analysis (pilot projects)
- Establishment of an Environmental Management System (EMS) for PCBs

**Component 3: - Environmentally sound storage and disposal of PCBs waste.**

**Outcome 3.1** – Proper storage of PCB-contaminated oil, equipment and other wastes.

*Activities:*

- Establishment of technical guidelines
- Standardization of storage procedures and sites

**Outcome 3.2** – Proper disposal of 50 % of currently identified stocks (750 MT).

*Activities:*

- Establishment of technical guidelines
- Coordination between Public and Private stakeholders
- Establishment of a Disposal Plan
- Removal of PCB stocks from Galápagos
- (Analysis of options and the) Safe disposal of PCBs contaminated materials

**Baseline Project:**

These above mentioned components are to be achieved by a baseline project complemented with the requested GEF grant. The baseline project is funded by in-kind contribution by the Government General Budget and UNDP, and also Grant contribution from the private sector, consisting of:

**Component 1:** Continue and expand efforts seeking the adequately management of PCBs such:

- (i) Prohibition (and effective control) of imports of dielectric oils containing PCBs (considered an important action since it can refrain future stocks of increasing);
- (ii) General guidance to owners and stakeholders about handling PCB stocks; and
- (iii) Wider and supportive legal instruments to promote the management of PCBs.

**Component 2:** The Government of Ecuador has made important efforts to develop guidelines that incorporate best practices in the PCBs Management. This component aims to continue and broaden these efforts by:

- (iv) Updating the PCBs national inventory;
- (v) Engaging with the private sector;

**Component 3:** Continue actions towards sound PCB management after replacement through the PCB destruction - in particular oils with concentrations of less than 50 ppm - throughout identifications of destruction facilities and trials burns. It is important to note that no options currently exist in Ecuador for PCB contaminated oils with concentrations above 50 ppm.

- (vi) Establish storage sites for contaminated materials and PCBs
- (vii) Disconnect and manage PCB containing equipment before disposal.
- (viii) Procure PCB-free replacement equipment.
- (ix) Study options for the safe disposal of PCBs that may include both domestic as well as international disposal options.
- (x) Co-financing towards safe disposal of PCBs.

### The GEF Contribution:

Besides all efforts put in place by Ecuador and the baseline project activities planned, information about PCBs (i.e. its quantities and location) is sketchy. The aforementioned preliminarily inventory was limited and has no information regarding the concentrations of PCBs found in oils, exactly type of equipments, sites or wastes. Also, finance is the most important limitation factor and there are no concrete plans to phase-out and destroy the PCBs' stocks. Risks to the public health and the global environment would remain. Even with the activities planned in the baseline project, in this scenario significant stocks would remain without disposal – and even lacking of proper identification. In this sense, the GEF intervention will provide to the Project:

- (a) A systematic effort to increase national capacities both in public and private sector;
- (b) Improve management and storage practices of PCBs in Ecuador to reduce the risk of exposure to people and the environment and to avoid further cross contamination of transformers in Ecuador.
- (c) Ways to develop a plan and start the disposal activities of PCB stocks.
- (d) Instruments to consolidate existing efforts and initiatives from different stakeholders, including the private sector, by centralizing and systematizing information and actions.

**Component 1:** GEF funds will be used to promote the enabling conditions needed for the implementation of an environmental management system to help Ecuador reach its PCBs final disposal goals. The action include Regulatory, Institutional and Operational improvement – The GEF support will ensure that this ground work is done as per best international practices and according to Stockholm Convention Rules and Guidelines.

**Component 2:** The GEF intervention seeks to provide the initial conditions for a systematic and continuous approach to the elimination of PCBs in an environmentally sound way by supporting and connecting all actors taking into consideration its different capacities and knowledge, by establishing adequate conditions and updating current information, helping to harmonize and disseminate information, guidelines and local rules. There are more than 20 companies involved in the generation and distribution of electricity that seek this kind of coordination and guidance. Other entities to be included are in the oil industry and hospitals.

**Component 3:** It will include mechanisms for institutions to improve coordination and work with owners of PCBs will develop a firm disposal plan. The project will provide much needed guidance in terms of the development of criteria and protocols for PCBs management and elimination and training of personnel.

GEF funds will be used to co-finance the improvement and creation of temporary storage facilities to hold stocks prior to the final disposition, to co-finance and accelerate (initiate) PCB disposal and to develop the institutional and technical capacities in Ecuador needed to eliminate 750 tons of oil contaminated with PCBs.

The following table shows the co-relation between the Baseline Project and the GEF Contribution:

Component	Baseline Project		GEF Contribution	
1. Institutional Capacity Strengthening for sound and environmentally friendly management	- PCBs Management Legal Framework Improved - Institutional Capacity Improved - PCB Inventory update - Awareness raising	750,000	- Support the harmonization and dissemination of information, political framework, legal and enforcement capacities	230,000

of PCBs	<b>Activities</b> - Coordination of public and private sector stakeholders. - Plan for PCB management in Ecuador up to 2020.		according to SC rules and in accordance with international standards and best practices. - PCB inventory updated according to SC recommendations	
2. Environmentally Sound Management of PCBs.	- <b>Managerial System</b> (practices) put in place - Stakeholders Consultation Meetings (Committee) - Implementation of safety and management guidelines. - Connect all involved actors and settle ground for replicable projects	150,000	- Develop safety regulations and technical guidelines and adopt to local conditions - Provide initial conditions for systematic and continuous approach for the elimination of PCBs - Establish adequate conditions and update current information on in and out-country options for PCBs disposal - Cost-effectiveness analysis of disposal options	450,000
3. Environmentally sound storage and disposal of PCBs waste	- <b>Environmentally Sound Storage of PCBs</b> - <b>Environmentally Sound Disposal of estimated 750 MT of PCBs and replacement of PCB containing transformers</b>	1,000,000  5,400,000	- Assure safe storage in compliance with SC Rules and Guidelines. - Establish pilot projects to verify and certify destruction standards aligned with international standards. - Accelerate PCB disposal to achieve project disposal volume goals.	240,000  900,000

B. 2. [Incremental /additional cost reasoning](#): describe the incremental (GEF trust fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated [global environmental benefits](#) (GEF trust fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

i) Incremental Cost Reasoning:

GEF resources will generate the enabling conditions for the implementation of an Environmental Management System for PCBs, and a disposal mechanism to allow Ecuador to fulfill its PCBs elimination goals. From a global perspective the project will retire from duty, and adequately dispose of oil, equipment and wastes that actually represent a health and environmental risk.

Lessons learned might be applied in other countries to facilitate compliance with the Stockholm Convention.

The main project outcome is an increased national capacity to manage PCBs efficiently and in an environmentally sound manner. This will be achieved by producing several outputs, including the introduction of an environmental management system (EMS) for PCBs in Ecuador, as mentioned above. The EMS will set forth actions and responsibilities for Government and for the private sector. Actions will include

- a) changes to regulations related to the Country's commitments under the Stockholm Convention.
- b) technical guidelines and protocols for management of PCBs throughout their life cycle, including the articles and residues that might be contaminated with them.
- c) fund mobilization to owners of PCB-contaminated equipment, oil, sites and wastes.
- d) mechanisms for execution.
- e) destruction of 750 MT PCB liquids and solids.

Clearly without GEF support most of these activities will not take place **and progress will be very slow and without real impact**. As mentioned above, there is no proactive management of PCBs. Users have stockpiled equipment, mainly transformers, contaminated with PCBs and have no viable or feasible option to dispose of them in an environmentally sound manner. It will be necessary to implement an integrated approach to PCB management and disposal in order to face the issues indicated in section B.1. and to strengthen the capacity of authorities and stakeholders in handling PCBs throughout their entire life cycle.

Furthermore the problem's dimension is not known, since there have been only partial inventories. And even though old transformers are being replaced, once decommissioned these are stored in places that are not adequate and in many cases under the weather. There are no facilities or infrastructure to temporarily store these equipments.

At national level the existing legal framework, its guidelines and standards need further development to guide companies (particularly distribution companies that have insufficient capacity to properly manage their PCBs) in following safe PCB management and handling practices. These companies lack the knowledge, standards and protocols to manage these substances.

Currently there are no conditions in Ecuador to adequately manage PCBs. And without GEF financing the situation will not change in the near future. In a Business-As-Usual scenario, Ecuador will face several challenges in complying with the Stockholm Convention regarding management and disposal of PCBs and as a consequence those involved in the handling of PCBs, communities living close to PCB contaminated areas as well as the global environment will remain at risk from exposure.

The incremental activities proposed by the project will address previously identified barriers and establish an integrated systematic approach to the environmentally sound management and destruction of PCBs. This approach will be supported by law and made possible through the strengthening of the local technical and institutional capacity and the establishment of a centralized system for PCB management, interim storage and transportation preparation for disposal abroad to reduce handling costs.

This project will provide for a strategy toward the sound disposal of all transformers in the country and improve substantially the safe management of transformers that contain or are contaminated with PCBs and their corresponding oils. The proposed project will ensure compliance with the Stockholm Convention commitments on PCBs in a way that environmental and health risks are properly managed. It will provide solutions for the proper disposal of up to 50 % of contaminated oil in the current inventory with concentrations higher than 50 ppm and will identify other sources of contamination.

ii) Demonstration on the cost effectiveness

The project aims to destroy at least 750 MT of contaminated oils and equipments. The cost efficiency in terms of the GEF grant will be US\$ 2.67 / kg of PCB destroyed. Real cost of destruction of PCBs is higher and will be determined via international competitive bidding processes and will be co-financed by national entities. The Government of Ecuador expects that the benefits of economies of scale will be achieved through the systematic approach that is proposed in this project. **Ecuador expects that it will adopt a mixed approach concerning oils concentration with less than 50 ppm being disposed in-country. The other contaminated oils and equipments may be destroyed abroad. However it is a product of this Project to analyze such capacity in order to give to tools and settle a proper Policy on PCBs management.**

iii) Explanations on why such activities are complementary

Project activities will build upon the efforts the country has already undertaken to improve its capacity to manage PCBs. As mentioned above there have been efforts in creating a national inventory of PCBs and other isolated initiatives. Furthermore, the SAICM initiative has provided support to update the National Chemicals Profile, has established an inter-institutional committee and is promoting adequate and rational management of chemicals, in a broader sense.

iv) Explanations of how the activities of the GEF/LDCF/SCCF projects will be replicated and catalyzed in the future; how will the positive effects of the project be maximized.

The project will help Ecuador fulfill its international commitments and at the same time protect global environmental benefits. Ecuador has an enormous responsibility in terms of biodiversity protection, is a pioneer in protected areas management (for example in Galapagos). Project execution will highlight the enormous importance of taking PCBs disposal seriously to protect global benefits, such as for example biodiversity. It is likely that other countries in the region will face similar issues, involving adequate management and disposal of PCBs.

v) Elaboration on why the funding level of each activity is considered to be appropriate.

In Argentina, Brazil, Mexico and Uruguay a very similar methodology has been applied, which was received with great enthusiasm by both power companies and PCB holding entities. Similar projects are currently being developed for Costa Rica and Colombia. After the necessary conditions had been created at national level, PCB holders were able to advance independently with disposal activities. Afterwards, they indicated that they found it much easier to undertake such endeavors once the necessary conditions were in place and standards had been clearly defined. This project is comparable to these initiatives and its funding level is proportional to the level of operation considering local conditions.

vi) Estimation of the global environmental/adaptation benefits of the project, including applied assumptions and methodologies

The proposed project's environmental benefits are concrete and measureable. The project would ensure that 750 tons of PCBs would be destroyed that would otherwise risk entering the global environment (global cycling). The project will create an enabling environment that will facilitate the destruction of the PCBs at the lowest possible cost as part of the proposed project but which will also facilitate the total elimination of PCBs present in the country as per the Stockholm Convention's established calendar.

B.3. 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) or adaptation benefits (LDCF/SCCF). As a background information, read [Mainstreaming Gender at the GEF.](#)":

Adequate management of PCBs stocks in Ecuador is a necessary condition for the wellbeing of its people in general, but especially for those whose daily activities require being exposed to these substances. This includes maintenance workers of electric companies and people working in recycling sites. Decreased exposure will result in economic benefits for public health systems; will reduce health care costs, workdays lost, and human suffering.

Furthermore, the lack of adequate management presents an enormous biological risk from water or soil pollution that can damage biodiversity resources and ecosystems of global importance. For Ecuador, this is very important, since an important part of its economy is based on tourism that is attracted to biological resources. For example, the Galapagos Islands have been declared by UNESCO a World Heritage Site and a Biosphere Reserve, recognition of its global importance and the benefits it generates.

**Gender Dimensions:** Efforts to ensure the Sound Management of Chemicals, including Persistent Organic Pollutants (POPs), have important gender dimensions. In daily life, men, women, and children are exposed to different kinds of chemicals in varying concentrations. Biological factors — notably size and physiological differences between women and men and between adults and children — influence susceptibility to health damage from exposure to toxic chemicals. Social factors, primarily gender-determined occupational roles, also have an impact on the level and frequency of exposure to toxic chemicals, the kinds of chemicals encountered, and the resulting impacts on human health.

Often, gender dimensions are considered to be ‘women affairs’, however UNDP considers “gender” to refer to the socially constructed rather than biologically determined roles of men and women (and children) as well as the relationships between them in a given society at a specific time and place.

With respect to the management and disposal of PCBs, it can safely be assumed that in Ecuador the majority of PCB handlers such as workers employed by electricity generation and distribution companies, maintenance companies, junkyards and recycling plants, large consumers and industries, retail consumers and industrial users among others, are men. On the other hand, women and children, who spent most time within their communities, might be at greatest risk from close proximity to PCB contaminated areas.

These gender dimensions will need to be reflected at both project and policy-level interventions pertaining to the sound management of chemicals in general and the sound management of PCBs in particular. Therefore, the PPG phase of the project anticipates assessing fully the gender aspects of the management of PCBs and their disposal. The participation, representation and buy-in of vulnerable worker populations and local communities in the project's formulation and the incorporation of gender dimensions into project activities will be explored as per the “UNDP Technical Guide on mainstreaming SMC” and the UNDP guidance note on "The why and how of mainstreaming gender in chemicals management".

B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:



Risk		Risk mitigation measures
Insufficient financial resources available for the sound management and destruction of PCBs.	M	Awareness raising among decision makers and managers of electricity distribution companies on the legal obligations Ecuador has assumed under the Stockholm Convention. Disseminating results about the economic benefits of environmentally sound management of PCBs.
Resistance from electric utilities to new norms and regulations.	L	Emphasize the long term benefits of proper management.
Institutional weakness to implement regulations.	L	The project seeks to address precisely those capacities. Ongoing training on related topics.
<b>Overall risk rating</b>	L	

B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

A full assessment of all relevant stakeholders that are to be involved in the project's development and implementation will be undertaken as part of the PPG phase, which will include a detailed mapping of actors who have an interest in or a role to play in the sound management and disposal of PCBs in particular and the sound management of chemicals in general.

At this stage the project proposal considers key stakeholders to be (list not exhaustive):

**Ministry of the Environment of Ecuador (MAE):** it looks over management of hazardous chemical products through the “National Regime for Hazardous Chemical Products Management” (or Régimen Nacional para la Gestión de los Productos Químicos Peligrosos). The technical executing agency, the Chemical Products and Hazardous Wastes Unit, works with the Environmental Control Direction, part of the Subsecretariat for Environmental Quality and is in charge of developing policies, bylaws, guidelines, technical criteria, lists of banned or severely restricted hazardous chemicals and the National Chemical Security Program to optimize management of hazardous chemicals in Ecuador. It also executes the instructions coming from the National Committee for Hazardous Chemicals Management and collaborates with other public and private organizations. Its goal is to comply with the National Chemical Security Program and be the entity in charge of executing international agreements. In this case MAE is responsible for project coordination and execution.

**Ministry of Electricity and Renewable Energy (MEER):** it formulates the national policy for the electricity sector and manages projects. Responsibilities include promoting an adequate and successful administration of this sector, using knowledge provided by people committed to the State’s energy sustainability. Its role in the project will be to provide support and coordination, together with CONELEC. Since the electricity sector holds a large percentage of PCBs in Ecuador this Ministry is very important for project success.

**National Electrification Council (CONELEC):** it operates at the national level regulating different aspects of electricity generation, transmission and distribution. Regarding the environmental aspects it enforces the Electricity Activities Environmental Bylaw, which specifies the environmental management system to reduce and prevent environmental pollution. It will support project coordination and execution.



**Electric Companies (public and private):** these companies must comply with established guidelines for management and environmentally sound disposal of PCBs. Some that have already made some progress regarding PCBs include: *Empresa Eléctrica de Quito* (EQQ), CATEG and *Empresa Regional Centro Sur*.

**Industrial Sector Organizations:** these organizations promote training, technological development, trade and corporate social responsibility. One of the most relevant organizations is the Trade and Commerce Association, which represents several private sector groups, including industry and business interests. There are also associations that represent key sectors of the chemical's industry. These organizations will be useful catalysts for change promoting compliance with existing guidelines for management and disposal of PCBs.

**NGOs:** There are non-governmental organizations that have experience in different dimensions of chemicals sound management. Some work developing public policy, others with environmental protection, sustainable production, community development, prevention of pollution and environmental education. *Fundación Natura*, *Acción Ecológica* and the *Centro Ecuatoriano de Derecho Ambiental* are examples.

**Workers' Associations:** these might be very relevant because of their role in improving conditions at the workplace and training. These include the *Confederación Ecuatoriana de Organizaciones Sindicales Libres* (CEOSL), and the *Confederación Sindical de trabajadoras y trabajadores del Ecuador*, two confederations of unions.

**Professional Associations:** some are very much related to the management of chemical substances. These include, amongst others, the *Colegio Regional de Ingenieros Químicos del Litoral*.

**Research Centers:** properly disposing of PCBs will require different areas of expertise; in Ecuador there are different credited research centers that provide services and carry out different types of analysis. These are usually related to a university.

#### B.6. Outline the coordination with other related initiatives:

This project will complement efforts started in 2003 with the initial PCB inventory that looked at oil used in the electric industry. That inventory should be improved, expanded and done at a much higher level of detail to provide much needed information for the sound management of PCBs.

The project will catalyze efforts to meet commitments under the Stockholm Convention that are presented in the National Implementation Plan, which include the total elimination of PCBs in 2020. It will also help Ecuador meet the intermediate goal stated in the National Well Living Plan: the elimination of 40% of PCBs in 2013.

Currently public and private and electric companies have been elaborating Environmental Management Plans, determining PCBs quantities and equipment contamination levels. They are expected to install interim storage sites to meet the requirements to obtain the "environmental licenses" that they need to operate.

For example, a manual for the environmentally sound management of equipments, oil and wastes contaminated with PCBs has been started. The project is in line with this and other initiatives and the national policies and actions.

Finally, Ecuador is part of the Strategic Approach to International Chemicals Management or

SAICM. Nearly US\$300,000 including national co-funding has been provided to Ecuador to implementing it. The project is making progress towards achieving its goals and completing individual outputs. It just produced an updated version of the National Situation Report that will provide significant and relevant information for the proper management of chemical products.

SAICM has helped consolidate the National Coordination Mechanism by sharing information and providing training in the different aspects of integrated and environmentally sound management of chemical substances. People involved have shown a large degree of compromise to disseminate the SAICM concepts. Members belong to important and respected national public institutions, the private sector and academia. Most are working in different aspects of chemicals management in Ecuador.

Clearly the project is aligned with national strategies regarding international initiatives and agreements.

To disseminate lessons learned during the project activities will be coordinated with similar UNDP projects being implemented in countries throughout the region. This cooperation happens through electronic means but also at meetings, the last being held in Mexico in 2011. The UNDP PCB programme countries in Latin America and the Caribbean include Argentina, Brazil, Mexico and Uruguay. These four countries combined are implementing a total of US\$13 million of GEF funds for the environmentally sound management and disposal of PCBs. IN addition PCB projects for Colombia and Costa Rica are being finalized in 2012.

Additionally, there are experiences in other regions where UNDP has provided technical and financial assistance for proper management and elimination of PCBs. Experiences in Ghana, Kazakhstan, Kyrgyzstan, Latvia and Morocco will provide important lessons to Ecuador.

### **C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

UNDP has a comparative advantage in the area of Persistent Organic Pollutants, in particular with respect to Capacity Building and provision of Technical Assistance. The proposed project will further benefit from UNDP's experience in integrated policy development, human resources development, institutional strengthening, and non-governmental and community participation.

The proposed project will introduce a comprehensive approach to PCB management, spanning from legislative to technical assistance and awareness raising and partnership building for the sound management of PCBs. Such elements are successfully being implemented in a number of UNDP PCB projects world-wide. To date, GEF funding has been approved for UNDP-supported PCB management activities in the following 12 countries: Argentina, Brazil, Colombia, Costa Rica, Ghana, Kazakhstan, Kyrgyzstan, Latvia, Mexico, Morocco, Slovak Republic and Uruguay. UNDP supports these countries in:

- Strengthening legal frameworks and improving enforcement capacity pertaining to PCB management by addressing gaps in national PCB management regulations and creating an enabling environment for the environmentally sound management and destruction of PCBs.
- Undertaking additional PCB inventories to identify remaining geographically dispersed PCBs and sensitive sites, for example by identifying small and medium-sized enterprises possessing a portion of the remaining inventory.
- Improving PCB management practices (such as handling, storage, transport, and destruction) by providing technical guidance on management and safe disposal of PCBs and training for government officials, handlers of PCB-containing equipment, and other private sector entities, to ensure the sound management of PCBs throughout their life cycle.

- Ensuring safe disposal of PCBs in collaboration with PCB-containing equipment holders, by developing safe domestic disposal facilities, facilitating export of PCB waste to safe disposal facilities abroad, and improving coordination among PCB holders to lower the cost of transport and destruction of PCBs.
- Implementing public awareness campaigns and communication strategies to support all of the above activities.

The proposed project will therefore benefit from UNDP's comparative advantages as a GEF agency in the implementation of PCB management and disposal related projects worldwide.

Based on the experiences from implementing chemicals related projects, UNDP's Country staff in Ecuador is well positioned in terms of their understanding of POPs and PCB issues as well as sector knowledge for handling this project. The UNDP Ecuador office is organized in two main clusters, each of which has a Cluster Manager and a Program Associate and combines on-the-ground experience of executing projects in experience within the environmental field and in project implementation.

From the Program side the project will be under the overall supervision of the Cluster Manager and supported by the Program Associate of The Environment and Disaster Risk Management Unit. The Manager also leads the UN Country Team on Environment and works closely with the UNDP Poverty Reduction and Governance Cluster which have experience relevant to this project in terms of capacity development and strengthening government/policy planning.

Implementation support on Operations will be provided through Procurement, Finance and Human Resources staff members under the direct supervision of the Operations Manager.

C.1 Indicate the co-financing amount the GEF agency is bringing to the project:

The United Nations Development Programme (UNDP) will contribute to the project US\$15,000 (grant) for the preparation of the project. Moreover it will provide additional funding for of 40,000 US\$ in-kind for the implementation of the project.

UNDP has already contributed with in-kind technical support and assistance for initial scoping meetings with Government counterparts and project stakeholders which took place in the preparation of this PIF and it will continue.

Considering the scope of the project, UNDP's in-house expert resources in energy sector programmes at country, regional and headquarters level will be mobilized and contribute towards project implementation. In addition to this, the Resident Representative functions and Country Office human resources and facilities will be available beyond strict cost recovery basis for the succesful project implementation. This value will be determined during the PPG phase.

UNDP's experience in integrated policy development, Capacity Development, institutinal strengthening and non-governmental and community participation will also benefit this project.

C.2 How does the project fit into the GEF agency's program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:

This project is consistent with the United Nations Assistance Framework (UNDAF 2010-2014) in Ecuador and specifically in terms of the "Environmental Sustainability and Risk Management" strategic concentration area. The project is in accordance with Result 1 that seeks harmonization of environmental, social and economic policies. Also, with Result 2 that aims to reduce the capacity gaps of national and local authorities. Result 5 is very specific in mentioning


people's access to reliable energy services but with low-emissions and without other contaminants. And given the potential risks to water resources from PCBs, the project is also associated with Result 7 that relates to the conservation of water resources.

**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 template. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Marcela Aguinaga	Punto Focal Operacional: Minister of Environment	MINISTRY OF ENVIRONMENT	11/25/2011

**B. GEF AGENCY(IES) CERTIFICATION**

<b>This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.</b>					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Yannick Glemarec		11/30/2011	Dr. Suely Carvalho	1-212-9066687	suely.carvalho@undp.org