



REQUEST FOR CEO APPROVAL

PROJECT TYPE: MEDIUM SIZE PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

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PART I: PROJECT INFORMATION

Project Title: Environmentally sound management and disposal of polychlorinated biphenyl (PCB) - containing equipment and disposal of DDT wastes, and upgrade of technical expertise in Guatemala			
Country(ies):	Republic of Guatemala	GEF Project ID: ¹	5816
GEF Agency(ies):	UNIDO	GEF Agency Project ID:	140298
Other Executing Partner(s):	- Ministry of Environment and Natural Resources (MENR) - Fundación Defensores de la Naturaleza (FDN)	Submission Date:	5/19/2015
GEF Focal Area (s):	Persistent Organic Pollutants	Project Duration(Months)	36 Months
Name of Parent Program (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/> ➤ For SGP <input type="checkbox"/> ➤ For PPP <input type="checkbox"/>		Project Agency Fee (\$):	190,000

A. FOCAL AREA STRATEGY FRAMEWORK²

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
CHEM-1	Production and use of controlled POPs chemicals phased out	Countries receiving GEF support to phase out the production or use of controlled POPs (other than new POPs)	GEF TF	2,000,000	13,771,100
(select)			(select)		
(select)			(select)		
(select)			(select)		
(select)			(select)		
(select)			(select)		
(select)			(select)		
(select)			(select)		
(select)			(select)		

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.

(select)					
Total project costs				2,000,000	13,771,100

B. PROJECT FRAMEWORK

Project Objective: To enhance Inclusive and Sustainable Industrial Development (ISID) through the strengthening of national capacities for the environmentally sound management (ESM) of POPs, including disposal of 15 tons of DDT and up to 400 tons of PCB and related wastes, and reduction/elimination of PCB releases from serviced equipment at workshops and interim locations to protect human health and the environment

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
Component 1. Legal, regulatory and institutional capacity for the ESM (environmentally sound management) of PCBs within the strengthened and appropriate framework of POPs for Guatemala	TA	Outcome 1. Strengthened national regulatory and institutional capacities for PCBs within the strengthened framework of POPs ESM	1.1. Legal instruments and technical tools are designed and available to regulate and control ESM of PCBs, including trans-boundary movement. 1.2. Guidelines for ESM of PCBs are developed for governmental bodies and other national organizations. 1.3. Relevant stakeholders are trained and able to use/apply the norms, policies and regulatory framework for ESM of PCBs. 1.4. Civil society	GEFTF	150,000	1,116,000

			(especially gender groups) aware of the proposed legal / regulatory framework and able to participate on its discussion, with due consideration of gender and other key issues.			
Component 2. Environmentally sound management (ESM) of PCB-containing electrical equipment and waste, and disposal of DDT	INV	Outcome 2. ESM of PCBs at private and public utilities established and disposal of PCBs and DDT achieved	<p>2.1. National reference laboratory for PCBs and DDT established and inventory data validated and geo-referenced.</p> <p>2.2. ESM system for PCBs established at each process step (identification , handling, collection, transport, safe interim storage and phase-out). BAT/BEP guidance for managing PCB wastes by hazardous waste operators available.</p> <p>2.3. Up to 400 tons of PCB wastes and</p>	GEFTF	1,250,000	10,000,000

			PCB-containing equipment and 15 tonnes of DDT are decontaminated or disposed of based on a decision resulting from the sound analysis of disposal strategies, including cost-benefit analyses			
	TA		2.4. A list of potentially contaminated sites, with PCBs or DDT, is prepared. 2.5. Long-term PCB and DDT elimination and disposal strategy, including financially feasible business plans, developed and approved (based on project results).	GEFTF	250,000	790,000
Component 3. Knowledge management and awareness raising	TA	Outcome 3. Information and knowledge on treatment and disposal of PCBs and DDT is made available. Owners of PCB and DDT,	3.1 Staff of MENR and relevant state organizations is trained on specific aspects of BAT/BEP for ESM of PCBs and wastes	GEFTF	90,000	824,990

		relevant organizations, government officials, and citizens are aware of it.	<p>3.2. Hazardous waste treatment operators are trained in depth on BAT/BEP for the ESM and disposal of PCB/DDT wastes.</p> <p>3.3. Transporters of PCB wastes are trained on BEP issues applicable to their activity.</p> <p>3.4. Members of pertinent professional, agricultural, industrial or other organizations, the electricity sector, NGOs and citizen groups participate in awareness workshops on ESM of PCB and disposal of PCB and DDT</p>			
Component 4. Monitoring and evaluation	TA	Outcome 4. Monitoring and evaluation established	4.1. Monitoring and evaluation framework designed and implemented according to GEF procedures	GEFTF	80,000	250,000
	(select)			(select)		
	(select)			(select)		

(select)		(select)	
Subtotal		1,820,000	12,980,990
Project management Cost (PMC) ³		(select) 180,000	790,110
Total project costs		2,000,000	13,771,100

C. SOURCES OF CONFIRMED CO-FINANCING 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 (\$)
Private Sector	Cementos Progreso	in-kind	410,980
		cash	531,825
Private Sector	Energuate	in-kind	595,073
		cash	144,327
Private Sector	INDE	in-kind	3,078,333
		cash	1,096,660
National Government	Ministry of Environment and Natural Resources	in-kind	367,074
Private Sector	Confederación Deportiva Autónoma de Guatemala	in-kind	63,367
		cash	617
Private Sector	EEGSA	in-kind	345,600
		cash	3,530,361
National Government	Empresa Eléctrica Municipal de Quetzaltenango	in-kind	513,72
		cash	133,700
National Government	Fegua	in-kind	22,640
		cash	38,573
National Government	Organismo Judicial	in-kind	80,357
		cash	104,452

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

Private Sector	Nutrica	in-kind	1,224
		cash	1,036
National Government	Empresa Eléctrica Municipal de Jalapa	in-kind	124,389
		cash	166,667
Private Sector	Selmet	in-kind	10,670
		cash	134,860
Private Sector	Electric power supply	in-kind	8,200
Others	Centro de Producción más Limpia	in-kind	57,276
		cash	55,357
National Government	Empresa Eléctrica de Guastatoya	in-kind	229,185
		cash	386,784
National Government	Empresa Eléctrica de Gualán	in-kind	112,320
		cash	302,940
Private Sector	Bandegua	in-kind	33,071
National Government	Empresa Eléctrica de Retalhuleu	in-kind	339,143
National Government	Hospital Roosevelt	in-kind	418,587
		cash	119,203
Private Sector	Compañía Guatemalteca de Níquel	in-kind	556,443
		cash	78,433
GEF Agency	UNIDO	Cash	40,000
Total Co-financing			13,771,100

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
(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
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	430,000	0	430,000
National/Local Consultants	250,000	800,000	1,050,000

G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No

(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 PIF

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 designed under this GEF-5 request for CEO approval is fully aligned with the approved project identification form (PIF), with improvements to further strengthen and elaborate the project concept as a basis for successful project implementation.
2. Guatemala is a developing country and a Party to the Stockholm Convention (SC). The National Implementation Plan (NIP) was prepared with grant assistance from the GEF and endorsed on May 6, 2010.
3. The NIP identified that the current legislative framework for persistent organic pollutants (POPs) does not fully comply with the SC, especially regarding the import, management and disposal of PCBs and DDT. Guatemala's Government has made efforts to build internal capacity and expertise to ensure that PCBs and DDT are handled, transported, stored and disposed of in an environmentally sound manner, but this goal requires international cooperation to ensure that all steps of the process adhere to international standards.
4. There is political willingness of Guatemala's National Government through the Ministry of Environment and Natural Resources (MENR) and the Ministry of Health. As stated in paragraph 1, Art. 13 of the SC, Guatemala is truly willing "to provide, within its capabilities, financial support and incentives in respect of those national activities that are intended to achieve the objective of this Convention in accordance with its national plans, priorities and programs." The GEF, as financial mechanism for the SC would provide adequate and sustainable financial resources to assist Guatemala in its implementation of the Convention, as stated in paragraphs 2 to 6, Art. 13 and Art. 14 of the Convention.
5. To provide additional support to the MENR on implementing the SC, on August 2013 the Government of Guatemala created the National Coordinating Commission on Persistent Organic Pollutants (Government Decree 256-2013), which will articulate relevant government sectors and provide advice to the MENR on POPs issues during a period of five years.
6. This medium-sized project (MSP) would be the first post-NIP project executed in Guatemala under cooperation with the Stockholm Convention Unit at the MENR.

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

7. The project is consistent with GEF-5 Chemicals Focal Area objective CHEM-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 plans under development and implementation".

A.3 The GEF Agency's comparative advantage:

8. The United Nations Industrial Development Organization (UNIDO) is a specialized UN agency whose mandate is to promote Inclusive and Sustainable Industrial Development (ISID) that is in line with the post-2015 Development Agenda currently under formulation to succeed the UN Millennium Development Goals (MDGs). UNIDO's comparative advantage lies in its mandate of promoting

competitive and environmentally sustainable industries. UNIDO has involved many industrial sectors in its GEF portfolio including: energy efficiency in industries, renewable energy, water resources management, and chemicals management. It has a unique comparative advantage in technical cooperation and industrial development projects, including technical assistance and technology transfer for PCB decontamination.

9. In particular, UNIDO has a long track record in assisting developing countries and countries with economies in transition to implement GEF projects on chemicals management. UNIDO's Environment Branch (ENV) pursues to integrate POPs-related projects into wider national chemicals management efforts. A document by the GEF Council highlights UNIDO's Stockholm Convention Unit (SCU) technical comparative advantage in the field of POPs elimination / reduction, which is a key component of the proposed project.

10. In particular, UNIDO has successfully implemented projects on PCB and DDT management and on BAT/BEP, which are the main components of this project. The aim of UNIDO's PCB projects is to assist countries to comply with the PCB-related obligations under the SC by eliminating or reducing the releases of PCBs into the environment. This contributes to strengthening the national regulatory framework, the institutional capacity at the national and local level, and raising awareness among relevant stakeholders, especially workers dealing with PCB-contaminated equipment and women and children living near sites with PCB-contaminated equipment. Improving the PCB inventory and strengthening the national laboratory capacity as well as promoting an ESM and environmentally sound disposal of PCBs are essential for the ESM of POPs throughout their lifecycle. UNIDO is highly involved in technology transfer of PCB decontamination technologies in case the project would require developing investment on this area. Stakeholder consultations with the government, private and public sector, NGOs and CSOs are other areas where UNIDO has been particularly successful in interacting with the national stakeholders, with the help of the national executing agency (NEA) and project coordination unit (PCU).

11. Within the LAC region, UNIDO has also accumulated extensive experience in the ESM of PCBs in Bolivia and Peru, which will also be beneficial for project implementation of this proposed MSP in terms of sharing regional information and exchanging experiences. The proposed project draws on these UNIDO experiences by strengthening national capacities for ESM and disposal of PCB-contaminated oil and equipment.

12. Through the technical assistance provided for the development of Guatemala's first NIP, and now through the assistance for the NIP review and update, UNIDO has first-hand knowledge about the PCB-related situation in Guatemala, which has been used for drafting the relevant action plans for the elimination and/or reduction of PCBs.

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

a) **BASELINE SCENARIO**

13. The baseline information for this MSP is based on data gathered during the first NIP, through the PIF of this project and particularly through consultations conducted during the PPG phase (e.g. stakeholder consultations with the Government, private sector and consultation workshops held in Guatemala City with participation of relevant private and public-sector stakeholders).

14. Without GEF funding, Guatemala would be unable to comply with the SC requirements related to PCB management and disposal by 2028, so the risks of exposure to PCBs that pollute the environment and threaten human health, will fuel high environmental and health concerns within the country, especially for workers dealing with PCB-oil, PCB-contaminated equipment and PCB waste, as well as environmental and health concerns for the general public and at the global level due to the POPs properties of PCBs.

15. Left without a proper technical and financial intervention, Guatemala could not develop and implement effectively an environmental management system (EMS) for PCBs, nor could adopt the necessary regulatory framework and develop its institutional capacity to monitor and control its PCBs. Due to its low technical capacity, a detailed PCB inventory could not be developed, nor analytical capacity be built, so no significant improvement in the existing storage conditions and environmentally sound management of PCBs could be achieved.

16. Currently the management of out-of-service equipment is not an environmentally sound activity and there is lack of knowledge and information on technical standards and procedures for proper handling and storage of PCB contaminated equipment, oils and waste. Staff from the smaller electrical utilities does not work in a safe way. There is no proper regime available for handling, storage and disposal, nor for operating, maintaining and phasing-out of electrical equipment. A device which cannot be repaired and re-used does not represent any commercial value to the workers, and therefore it is handled as scrap without any further precautions regarding safety to human beings or the environment. Additionally, some of the stakeholders are aware of cases of PCB leakages from inadequate storage and cases in which the practice of burial or interring was used. Regarding this situation, a list of potentially contaminated sites with PCB and DDT should be prepared.

17. Guatemala has not sufficiently developed the waste management sector to have facilities for the environmentally sound disposal of PCB contaminated equipment, oil and waste, nor for DDT. There are no companies in the country that have developed safe disposal or elimination alternatives. Therefore, the technical solution for the final disposal of up to 400 tons of PCB and 15 tons of DDT, and a long-term elimination and disposal strategy for PCB and DDT must be developed.

18. Under this scenario, PCBs will still be released into the environment and cross-contamination will continue, causing potential environmental and human health risks, especially to workers, communities living close to in-use and phase-out transformers, women and children. Occupational health, safety standards and awareness raising material will not be available to help protect workers and the population living nearby storage facilities from the exposure to PCBs.

19. Likewise, without the financial assistance from GEF and technical assistance from UNIDO, the remaining stock of DDT will not be disposed in an environmentally sound manner. Inappropriate safeguarding of the current DDT storage facility might led to DDT leakages into the surrounding soil; thus, posing risks to human health and environment.

b) BASELINE PROJECT

Guatemala's electricity sector, including distribution and use of transformers

20. Guatemala's electricity sector includes three main subsectors: generation, transport and distribution. Electricity generation relies basically on renewable sources (65, 6%), with a third of generation from non-renewable sources (34.4%) and renewable energy sources. It includes hydroelectric, geothermic, biomass, solar and wind energy plants. According with official data, in 2013 Guatemala had a total installed energy capacity of 1,982 megawatts.

21. The National Electrification Institute (INDE), an autonomous and self-financing state entity, was created in 1959. It is divided into three companies:

- One aims at generating electricity, basically hydro and thermal power.
- Another aims at transporting electricity continuously in the National Interconnected System (NIS).
- And the other seeks to foster, promote the commercialization of power, energy and services.

22. Currently the distribution of electricity is carried out by:
- EEGSA which operates in the departments of Guatemala, Sacatepéquez and Escuintla serving 1,177,726 users.
 - ENERGUATE that operates in all departments of East and West Guatemala serving 1,435,747 users.
 - 16 Municipal Electricity Companies (EEM) serving 125, 908 users, and
 - Two private enterprises: Services of Southern Tiquisate and the Hydroelectric Patulul, serving 719 and 699 users, respectively.
 - EEGSA and ENERGUATE serve 93,3% of the users.
 - In total there are more than 72,000 km of distribution network.

Figure 1: Electricity distribution network



Table 1: Distribution and use of transformers

No.	Nombre de Distribuidora	Usuarios	%	Cantidad de transformadores instalados en el país
1	Empresa Eléctrica de Guatemala, S.A.	1,177,726	42.04	61,743
2	Distribuidora de Electricidad de Occidente, S.A.	897,581	32.04	49,900
3	Distribuidora de Electricidad de Oriente, S.A.	538,166	19.21	39,900
4	Empresa Eléctrica Municipal de Quetzaltenango	47,432	1.69	NA
5	Empresa Eléctrica Municipal de Huhuetenango	27,500	0.98	NA
6	Empresa Eléctrica Municipal de Puerto Barrios, Izabal	20,728	0.74	NA
7	Empresa Eléctrica Municipal de Zacapa	15,314	0.55	NA
8	Empresa Eléctrica Municipal de San Pedro Sacatepequez, San Marcos	13,677	0.49	NA
9	Empresa Eléctrica Municipal de Jalapa	12,062	0.43	NA
10	Empresa Hidroeléctrica Municipal de Retalhuleu	10,733	0.38	NA
11	Empresa Eléctrica Municipal de Joyabaj, Quiché	10,656	0.38	NA
12	Empresa Eléctrica Municipal de San Marcos	8,083	0.29	NA
13	Empresa Eléctrica Municipal de Guastatoya, El Progreso	7,524	0.27	NA
14	Empresa Municipal Rural de Electricidad Ixcán, Quiché	4,147	0.15	NA
15	Empresa Eléctrica Municipal de Gualán, Zacapa	3,843	0.14	NA
16	Empresa Eléctrica Municipal de Santa Eulalia, Huehuetenango	3,245	0.12	NA
17	Empresa Eléctrica Municipal de Tacaná, San Marcos	1,073	0.04	NA
18	Empresa Eléctrica Municipal de San Pedro Pinula, Jalapa	1,042	0.04	NA
19	Empresa Hidroeléctrica de Patulul, Suchitépéquez	679	0.02	NA
	TOTAL	2,801,211	100	151,543

93.30%

6.70%

Baseline for project component 1: Legal, regulatory and institutional capacity for the ESM (environmentally sound management) of PCBs within the framework of POPs (including identification, handling, transportation and disposal)

22. The institutional framework is based on the entities listed in the General Electricity Law: the Ministry of Energy and Mines (MEM), the National Energy Commission (CNEE), and the Manager Market Wholesaler (AMM).

23. The MEM is responsible for energy policy that defines the principles and guidelines that should be considered when performing any action that is intended to strengthen the electricity sector. The legal framework for energy is enshrined in the Constitution since all natural resources with energy potential are considered national assets and state property. The regulations for the Electricity Law were issued in 1997, while the Wholesale Market regulations were issued in 1998.

24. The National Electricity Law allows private companies to participate in a number of projects opening up energy commercialization, distribution, transmission and generation from the control of the three major stakeholders: Instituto Nacional de Electrificación (INDE), Energuate Distribution Company (ENERGUATE) and Empresa Eléctrica de Guatemala Sociedad Anónima (EEGSA).

25. Guatemala's legal system for regulating POPs builds upon the National Constitution which states that the State, municipalities and inhabitants of the country will foster social, economic, scientific and technological development, to prevent pollution of the environment and maintain the ecological balance.

26. There are specific laws such as the Health Code (Legislative Decree 90-97) that aim at preserving the health of the population and the Law on Protection and Improvement of the Environment (Legislative Decree No.68-86) that aim at ensuring the maintenance of the ecological balance and the quality of the environment to improve the quality of life of the population of the country. There is also legislation for solid waste management that includes the National Policy for the integrated management of solid waste (Government Agreement 111-2005), Regulation for Hospital Solid Waste Management (Government Agreement 509-2001) and the Regulation for the Management of Radioactive Waste (Government Agreement 559-98).

27. Guatemala has not yet developed regulations for handling hazardous substances or wastes, so it does not have national legislation for the environmentally sound management of PCBs (including identification, handling, phase-out, collection, transport, interim storage of PCB contaminated equipment, oils and wastes and their final disposal); the same applies to DDT. So, in the absence of national regulations, each owner will continue handling and disposing of PCB oil, PCB-containing equipment or DDT as usual, and authorities will lack the information of these procedures.

28. Fortunately, these processes are supported by provisions of international conventions on chemicals and waste to which Guatemala is a Party. In this regard, Guatemala has signed the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal, on 22 March 1989, ratifying it on 14 February 1995 (Legislative Decree No. 3-95). It has also signed the Stockholm Convention on Persistent Organic Pollutants (POPs) on 29 January 2002, ratifying it on 31 July 2008 (Legislative Decree 60-2007); so, these international agreements automatically become country laws whenever there is no specific national regulation on a subject.

29. Government Agreement 284-2008 designates the Ministry of Environment and Natural Resources as the National Coordination Center for the exchange of information concerning the reduction or elimination of the production, use and release of POPs and alternatives to POPs, including information relating to their risks and their economic and social costs concerning the Stockholm Convention on Persistent Organic Pollutants. The National Implementation Plan (PNI) was prepared in 2009 pursuant to Article 7 of the Stockholm Convention that refers to the obligation of countries to formulate a National Implementation Plan for the safe handling and disposal of POPs.

30. The National Coordination Committee on Persistent Organic Pollutants (CNC -COP) was created by Government Decree 256-2013. It is an advisory body that supports the Ministry of Environment and Natural Resources, through the Coordinating Unit for the Environmentally Sound Management of Chemicals and Hazardous Wastes, to comply with the implementation of the Stockholm Convention through the activities set in the National Implementation Plan. This committee is composed of the following state organizations: Ministry of Environment and Natural Resources, Ministry of Agriculture and Food, Ministry of Communications, Infrastructure and Housing, Ministry of National Defense, Ministry of Economy, Ministry of Education, Ministry of Energy and Mines, Ministry of Public Finance, Ministry of Foreign Affairs, Ministry of Public Health and Social Assistance and Ministry of Labor and Social Welfare.

31. Regarding PCB, there is a standard issued by the National Energy Commission CNEE, in 2000 for low voltage transformers which states that the content of PCB should be less than 2 ppm.

32. Ministerial Decree 377-90 regulates the registration, sale, use and control of agricultural pesticides and related substances and activities, including the labeling, registration, import, processing, storage, transport, sale and use of pesticides in general, and the safety and protection of people at work where they are exposed to the risks of their application and also for the general population, the flora and the fauna. Legislative Decree No. 43-74 regulates import, production, storage, transport, sale and use of pesticides. Its Article 6, regulates the use of DDT, and states the need to establish rules to reduce its use to 20% annually.

33. Co-financing for component 1 will be mainly provided by the government as outlined in Table C. The private sector will provide co-financing for the awareness raising and training output.

Baseline for project component 2: Environmentally sound management (ESM) of PCB-containing electrical equipment and waste, and disposal of DDT

34. Guatemala and its electric utilities have limited experience on the ESM of PCB and lack the adequate infrastructure, equipment and technology to do it in an environmentally sound manner. The lacking

information from the preliminary inventory of PCBs makes it difficult to establish priorities and propose alternatives for the ESM of PCBs.

35. The National Health Laboratory, which belongs to the Ministry of Public Health and Social Assistance, is the unit responsible for conducting the physical, chemical and microbiological analysis necessary for veterinary reference food, medicines and related products. It also serves as a national reference laboratory in the diagnosis of human diseases, animals, plants, agricultural and environmental. To date there have been no analysis of PCBs, because the laboratory does not have the necessary standard of reference or analysis methodology; however it owns the electronic analyzers appropriate to conduct such analyses.

36. There is a need to improve the analytical capacity for field testing and chromatographic gas analysis in already established laboratories. The preliminary inventory developed during the NIP process did not quantify the total amount of PCB-contaminated equipment, oil and waste existing in Guatemala in 2010. The inventory done with Clor-N-Oil kits only covered phased-out transformers in electricity generation and distribution companies. Thus, the results do not represent the actual amounts of PCB contaminated equipment and oil at the moment.

37. In response to these findings, attempts have been made during the PPG phase to identify potential PCB holders in each sector and location of Guatemala (see Table 2). An additional analyzer and more reagents have already been purchased to screen-test whether the PCB quantities in the identified locations are likely to occur, and determine their likely concentrations and volumes.

Table 2: Potential PCB holders by sector and location in Guatemala

Company	Sector	Equipment	PCB (kg)	Equipmen t	Oil	Storage	Analysis	In use/ phase out
TRELEC S.A. - EEGSA	Transporte energia	Transformadores de potencia	287.497	201.248	86.249	En Uso	Sospechosos	En uso
Empresa Electrica Municipal de Pedro	Distribuid or energia	Transformadores de potencia	206	144	62	N/A	Chlor-N-Oil	N/A
Empresa Electrica Municipal de Santa Eulalia	Distribuid or energia	Transformadores de potencia	290	203	87	N/A	Chlor-N-Oil	N/A
Empresa Electrica Municipal de	Distribuid or energia	Transformadores de potencia	9.364	6.555	2.809	N/A	Chlor-N-Oil	N/A

Quetzaltenango								
Empresa Electrica Municipal de Huehuetenango	Distribuidor energia	Transformadores de potencia	529	370	159	N/A	Chlor-N-Oil	N/A
Empresa Electrica Municipal de San Marcos	Distribuidor energia	Transformadores de potencia	6.059	4.241	1.818	N/A	Chlor-N-Oil	N/A
Empresa Electrica Municipal de Guastatoya	Distribuidor energia	Transformadores de potencia	699	489	210	N/A	Chlor-N-Oil	N/A
Empresa Electrica Municipal de Gualan	Distribuidor energia	Transformadores de potencia	1.253	877	376	N/A	Chlor-N-Oil	N/A
Empresa Electrica Municipal de Retalhuleu	Distribuidor energia	Transformadores de potencia	3.264	2.285	979	N/A	Chlor-N-Oil	N/A
Empresa Electrica Municipal de Jalapa	Generacion energia	Transformadores de potencia	3.460	2.442	1.038	Bajo gradas estadio	Chlor-N-Oil	Fuera de Servicio
Empresa Electrica Municipal de Zacapa	Distribuidor energia	Transformadores de potencia	1.440	1.008	432	N/A	Chlor-N-Oil	N/A
Empresa Electrica	Distribuidor energia	Transformadores de potencia	479	335	144	N/A	Chlor-N-Oil	N/A

Municipal de Puerto Barrios								
Empresa Electrica Municipal Santa Eulalia	Distribuidor energia	Transformadores de potencia	290	203	87	N/A	Chlor-N-Oil	N/A
INDE-EGEE	Generacion energia	Transformadores de potencia	133.766	55.080	78.686	N/A	Chlor-N-Oil	Algunos en Uso otros fuera de servicio
INDE-ETCEE	Transporte energia	Transformadores de potencia	28.553	23.163	5.390	N/A	Chlor-N-Oil	Mal estado
Bodega Municipal de Jutiapa	Entidad Privada	Transformador de distribucion	124	87	37	N/A	Chlor-N-Oil	Buen estado
ENERGUATE	Distribuidor energia	Transformador de distribucion	22.259	12.993	7.638	Toneles certificados en estacion disenada especialmente para PCBs	Chlor-N-Oil	Fuera de Servicio
Alimentos Nutricionales de America	Entidad Privada	Transformador de potencia	333	233	100	N/A	Chlor-N-Oil	Buen estado
Centro Cultural Miguel Angel Asturias	Entidad Publica	Transformador de potencia	8.386	3.453	4.933	En Uso	Clophen en placa	En uso
Ferrocarriles de	Entidad Publica	Transformador de distribucion	965	397	568	Bodega	Chlor-N-Oil	Fuera de Servicio

Guatemala								
Hospital Roosevelt	Entidad Publica	Transformador de potencia	13.123	10.311	2.812	N/A	Chlor-N-Oil	N/A
Hospital Rodolfo Robles	Entidad Publica	Transformador de distribucion	1.339	551	788	Recinto cerrado no adecuado	Chlor-N-Oil	Fuera de Servicio
Palacio Nacional	Entidad Publica	Transformador de potencia	2.500	2.000	500	Recinto Cerrado	Placa	En Uso
EMPAGUA	Entidad Publica	Transformador de distribucion y tanques de almacenamiento	11.534	6.480	5.054	N/A	Chlor-N-Oil	Algunos en uso otros fuera de servicio
CONFED E	Entidad Publica	Transformador de distribucion	500	500	-	Bodega	Chlor-N-Oil	Fuera de Servicio, desmantelados
Organismo Judicial	Entidad Publica	Transformador de potencia	5.220	3.740	1.480	Recinto Cerrado	Clophen en placa	En Uso
Ingenio Santa Ana	Entidad Privada	Transformador de potencia y condensadores	3.815	2.837	979	N/A	Chlor-N-Oil y Pyranol en placa	Fuera de Servicio
TOTAL en Kg			547.247	342.205	203.415			
TOTAL En Toneladas			547.25	342	203			

38. Few companies reported to have in place environmentally sound management of PCBs due to the lack of PCB legislation (specific prohibitions and regulation), so these companies voluntarily have conducted detection, handling and phasing out of PCBs. However, there are no official reports to the authorities on these activities (since they are not mandatory).

39. It is important to highlight that Energuate and Cementos Progreso have intended to export 21 tons and 50 tons of PCB respectively. Neither of both has reached the objective yet, since problems with getting the corresponding permits were reported.

40. Guatemala's government has tried to export the remaining 15 tones of DDT for final disposal; however, this goal has not materialized yet.

41. In Guatemala there is no technology installed to treat PCBs and/or DDT exclusively. One option to be evaluated during project implementation will be the possible co-processing of waste by Cementos Progreso, a Guatemalan company that provides construction materials. Cementos Progreso produces and distributes Portland cement, pre-mixed concrete, dry pre-mixed concrete and other materials used in construction and it will provide co-financing to the project and expressed its interest in the co-processing of PCB and DDT.

42. Co-financing for the ESM of PCBs will be mainly provided by the private sector, especially by the companies directly involved in disposal activities (e.g. Cementos Progreso), local governments and companies of the electricity sector (e.g. EEGSA and others as outlined in Table B). For the final disposal of DDT, co-financing will be mainly provided by the Ministry of Environment and Natural Resources, the Organismo Judicial and the Hospital Roosevelt.

Baseline line for project component 3: Knowledge management and awareness raising

43. Staff of the MENR and other relevant state organizations has limited experience on the ESM of PCB and DDT. Some electrical utilities, maintenance companies and transporters lack the adequate infrastructure, equipment and guidelines to implement properly this ESM. In addition, targeted awareness-raising and knowledge management activities on POPs, particularly on PCBs and DDT, are lacking.

44. Co-financing for the knowledge management and awareness raising activities will be mainly provided by the Ministry of Environment and Natural Resources, local governments and the Centro de Producción más Limpia de Guatemala (an NGO).

45. Other projects relevant to ESM of PCB and DDT

46. The project will join other UNIDO-GEF funded initiatives in Latin America. Currently, Peru and Bolivia are each implementing a UNIDO-GEF project entitled "*Environmentally Sound Management and Disposal of PCBs*" (GEF ID 3709 and GEF ID 5646), so these will provide feedback, lessons learned and will contribute to the success of the project in Guatemala, since both share the same regional context and some similar challenges and opportunities.

47. UNIDO is also assisting Guatemala in the review and update of its NIP, and PCB inventory activities can be linked between both projects.

c) Problems/ barriers remaining for the project to be addressed

Project component 1: Barriers related to legal, regulatory and institutional capacity for the ESM (environmentally sound management) of PCBs within the framework of POPs (including identification, handling, transportation and disposal)	
(i) Lack of enforcement of PCB-related legislations, regulations and national standards	The lack of a formal legislative structure or regulation for PCBs is an important barrier for the implementation of an environmentally sound management system for PCBs. The necessary PCB management regulation should be accompanied by technical guidelines and training for proper compliance.
(ii) Complex process to obtain permits	<p>A barrier for successful project implementation might be the complex legal framework and internal MENR processes to obtain permits for storage, transport and treatment of POPs. At the moment it is not clear if each owner must obtain a permit. Some alternatives must be studied to simplify the process, perhaps the development of a Strategic Environmental Assessment could be considered.</p> <p>Another barrier will be the administrative processes to distinguish hazardous waste from the public institutional inventory. Some experiences about this situation were also reported by representatives of the Ministry of Health for DDT and for sure, the same barrier must be overcome in this project.</p>
(iii) Challenging situations	A few contaminated pieces of equipment are located in museums that have been declared as national heritage. It is important to consider special solutions for these cases because these devices are an essential part of the national heritage and must be conserved. For these special cases, particular solutions must be studied, independently of the cost, since the elimination of the equipment should not be considered as a viable option.
Project component 2: Barriers related to environmentally sound management (ESM) of PCB-containing electrical equipment and waste, and disposal of DDT	
(iv) Lack of commitment by relevant stakeholders	INDE, which is one of the main holders of PCBs, has become involved in the project and

	<p>provides a large share of the total co-financing. This has happened due to effective lobbying developed by the Ministry of Environment and Natural Resources. As already discussed regarding the context, other main holders of PCB are EEGSA and ENERGUATE. In particular INDE performs a large share of the generation, transmission and distribution of electricity, so INDE possess a lot of capacitors, large-sized transformers and probably older pieces of equipment than those that belong to EEGSA y ENERGUATE that focus on activities of electricity distribution.</p>
<p>(v) Lack of certainty regarding with stocks to treat and dispose of</p>	<p>Although the 400 tons of PCB oils and contaminated equipment estimated during the PIF elaboration seems reasonable for the expected size of the electricity sector in Guatemala, it is not yet possible to ensure that 400 tons are still ready to be disposed of. During the PPG phase some electricity utilities stated that some devices initially identified as containing PCBs remain missing. However the recent inclusion of INDE, the largest PCB owner, increases the likeliness that up to 400 tons of PCB can be reasonably identified.</p> <p>So, it would be essential to carry out the following activities:</p> <ul style="list-style-type: none"> • The main identified owners during the PIF should be soonest contacted, informed and motivated to join the Project. • It is crucial to study the inventories of different companies, seeking to identify manufacturers and year of manufacture of the equipment and implement a sampling aimed at finding PCB containing equipment. • The sampling should include not only transformers out of order, but also capacitors and transformers in operation.
<p>(vi) Lack of an updated and accurate PCB inventory</p>	<p>The inventory carried out during the initial NIP was incomplete as it did not target all equipments that are potentially contaminated</p>

	with PCB. Also the inventory was based on the application of Clor-N-Oil kits, which is not a precise and confirmatory method. Thus, a national inventory that includes all the stakeholders and processes is required: electricity generation, transmission and distribution companies, the dielectric oil stocks, private / small consumers and maintenance companies, to determine the location of the contaminated equipment, oils and wastes, as well as the likely PCB concentrations. Accurate information is required to implement an ESM management system, to determine the most economically-feasible technology for PCB elimination and to minimize risks and reduce the stocks of PCB-contaminated oil, equipment and waste in Guatemala.
(vii) Lack of analytical capacity, including laboratory and accreditation procedures	There is a need to strengthen existing laboratories through training and analytical capacity building for PCBs. There is no laboratory with analytical capacity for PCB analyses, even though the Laboratorio Nacional has a piece of gas chromatography equipment that could be used for this purpose.
Project component 3: Barriers related to knowledge management and awareness raising	
(viii) Low level of national expertise in identifying and assessing environmental management system (EMS) options for PCBs	This project should also help create adequate institutional capacity and a regulatory framework to enforce the implementation of a national PCB management system among all PCB owners. Training sessions should be developed for staff of the regulatory bodies and for PCB owners, so they can learn about their corresponding responsibilities and obligations for the fulfillment of the regulations.

d.) RELEVANT DATA/ PPG FINDINGS

48. Initial stakeholder consultations, especially the government and the private sector, have been conducted since the implementation of the first NIP enabling activities (EA) project, and have been further intensified during the development of the PIF and PPG stages of this project.

49. The interest shown by the participating stakeholders during the different PPG workshops will certainly help enhance and advance the project activities. However, since the workshop participants have been rather from the technical and mid-management level, it is essential that also top decision makers are

soon contacted, informed and motivated to show the same enthusiasm to participate in and commit themselves to the project.

50. Thanks to the lobbying of the MERN INDE that is one of the largest owners of PCB and a state agency, decided to participate in the project, and this is an important asset to reach the proposed goals and an adequate project impact.

51. Nonetheless, the inventory does not represent the situation within the country. MENR does not have quantified information about the exact dimension of the universe of electrical devices in Guatemala and sampling was focused on the out-of-order equipment, and only on transformers. To overcome this situation, an activity for developing a representative inventory should be included in the project, including the operational devices and capacitors.

52. Additionally, as already explained the 400 tons of PCB and related wastes estimated during the PIF need to be further identified and confirmed since some electric utilities reported missing devices that were previously sampled and identified as contaminated equipment. Therefore it is essential to further contact, inform, and motivate PCB owners to join the project.

53. Staff from the smaller electric utilities does not work in a safe way. There is no proper handling, storage or disposal regime for phased-out electrical equipment available yet. The workers usually consider that a device that cannot be repaired and re-used does not have any commercial value and therefore handle it as scrap, without any further precaution regarding safety to human beings or protection of the environment.

54. Additionally, some of the participants of meetings and workshops related cases of PCB leakages from inadequate storages and unsound interments (“enterramientos”).

55. Few companies reported having in place an environmentally sound management of PCB due to the lack of PCB legislation, so these companies have voluntarily decided to detect, handle and phase out the PCBs, but they do not report on these activities to the authorities, since it is not mandatory.

56. As explained, Energuate and Cementos Progreso have intended to export 21 tons and 50 tons of PCB respectively, but neither has reached its objective yet due to difficulties in getting a permit.

57. Nonetheless, Cementos Progreso has pledged to provide co-financing to the project and expressed interest in becoming involved in a potential co-processing of PCB and DDT.

58. MENR and the Ministry of Health (MoH) worked together with UNIDO and the project team during the PPG phase to ensure active participation according to adequate eligibility criteria. Towards this, they approached key partner companies that have shown previous activity and commitment on PCB elimination, including Cementos Progreso, Energuate, EEGSA, Municipal Electric Utility of Quetzaltenango, Municipal Electric Utility of Jalapa, Electric Utility of Guastatoya, Electric Utility of Gualán, Electric Utility of Retalhuleu, Guatemalan Nickel Company, Hospital Roosevelt, and others..

59. The most important achievement of these activities during the PPG phase has been a greater stakeholder involvement and a renewed interest by the Government, as expressed by the confirmed co-financing that exceeds the indicative amount proposed in the PIF by 344% (US\$13,776,103 now confirmed in contrast to US\$4'000,000 indicated in the PIF). It is important to mention that the GEF had recommended increasing the amount of co-financing by the CEO approval stage and UNIDO took this challenge very seriously. As a result, the current co-financing level is almost 7 to 1, which is a very large co-financing ratio for a project of this kind.

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:

60. Guatemala has demonstrated a strong technical, political and financial interest in developing the environmentally sound management and disposal of PCBs and DDT. So, it is necessary to develop a structured national approach towards this objective that will help the country to fulfill part of its SC commitments; nonetheless, Guatemala needs technical and financial assistance to strengthen its national capacity and this GEF-funded project will contribute towards that goal.

61. The proposed project is in line with the national POPs priorities developed during the first NIP in 2010, and fits the GEF-5 Focal Area Strategy Framework for Chemicals, particularly its Objective CHEM-1: Phase out POPs and reduce POPs releases. The GEF funding will support the development of an integrated ESM of PCBs in Guatemala to reduce up to 400 tons of PCBs and 15 tons of DDT, in line with CHEM-1 Outputs 1.1.1 Countries receiving GEF support to phase out the production or use of controlled POPs (other than new POPs); 1.4.1 PCB management plans under development and implementation; and, 1.5.1 Countries receiving GEF support to build capacity for the implementation of the Stockholm Convention.

62. Meeting the requirements set under the SC and addressing the national priorities for the ESM of polychlorinated biphenyls (PCBs), requires the development and implementation of the following instruments and tools:

(i) Action plan for the establishment of an environmentally sound management (ESM) of PCB-containing electrical equipment and waste:

- Production, use, labeling, storage and phase out plan for PCBs set.
- Handling, identification, use and database for the PCB developed.
- Laboratory capacity for the analysis of PCB strengthened.

(ii) Action plan for regulatory and institutional strengthening for the implementation of PCB related measures of the SC on POPs:

-Contaminated sites identified, and strategies for information exchange, education, communication and sensitization set.

(iii) Action plan for awareness raising and public information:

- Staff and PCB workers of different sectors sensitized and trained.

63. GEF assistance will contribute to the implementation of an EMS for PCBs that will reduce the current cross-contamination incidents with transformers that result in increases to the existing PCB inventory.

64. GEF assistance is also essential to avoid that PCB-containing equipment continues to deteriorate at the storage locations and that the contaminated oils are then released continuously into the environment causing exposure of workers and local population to PCBs.

65. If the instruments for effective PCB management are to be created, GEF assistance is then fundamental. Analytical capacity needs also to be created through the upgrading of a laboratory with PCB parameters and training for the accreditation. An updated inventory and regulation formulated and implemented will allow the regulatory institution to monitor and control inadequate storage. Enforcement of regulations to remove leaking equipment will reduce the exposure of workers and the population living nearby PCBs storage facilities, thereby reducing the risks to human health and the environment. Without GEF assistance this would not be possible.

66. Having GEF assistance in this project is also required for implementing the occupational health and safety standards for workers handling PCBs, which will reduce the exposure of these workers to PCB releases during maintenance.

67. In the absence of GEF funding and the technical assistance associated with it, Guatemala's capacity to formulate the required regulations and create institutional capacity to monitor and control compliance, implementation of an environmentally sound management system for PCBs would occur very slowly, resulting in the continuity of improper handling of PCB equipment, oils and wastes and the risks associated with these practices. In addition, the disposal of DDT would not occur.

68. The possibility of developing and implementing a disposal strategy that allows Guatemala to comply with its SC commitments in a cost-efficient way, resulting in the elimination of most of its inventoried PCBs and DDT, would be remote unless the country receives the corresponding GEF support.

69. The incremental activities proposed under this project will address the identified barriers and establish an integrated and systematic approach towards the environmentally sound management and disposal of PCBs. Not only compliance with the SC will be ensured, but also the reduction of the environmental and health risks that these POPs pose will be reached.

70. The global environmental benefits of the project are the prevention of releases of PCB-contaminated oils and of u-POPs into the environment. The project will eliminate 15 tons of DDT and up to 400 tons of PCB contaminated equipment, oil and wastes through the implementation of a disposal strategy that will be based on the inventory results.

71. Table 3 shows the correlation between the Baseline Project (based on the co-financing) and the GEF additional project (based on the GEF grant), which will be explained in further detail through the next section. In-kind and cash co-financing will be contributed by the national and local governments, private sector and an NGO (see Part I, Table C). Co-financing for component I will be mainly provided by the government as outlined in Table C. The private sector will provide co-financing for the awareness raising and training output. Co-financing for the knowledge management and awareness raising will be mainly provided by the Ministry of Environment and Natural Resources, local governments and the Centro de Produccion más Limpia (NGO). Co-financing for the ESM of PCBs will be provided by INDE and the private sector, especially by the companies directly involved in disposal activities (Cementos Progreso), local governments and companies belonging to the electricity sector (e.g. EEGSA and other companies). For DDT co-financing will mainly be provided by the Ministry of Environment and Natural Resources, Organismo Judicial and the Hospital Roosevelt for the final disposal of DDT.

Table 3: Correlation between the baseline project and the GEF additional project

Project Component	Baseline Project		GEF additional project	
	Co-finance		GEF grant support	
1. Legal, regulatory and institutional capacity for the ESM (environmentally sound management) of PCBs within the framework of POPs (including identification, handling, transportation and disposal)	<ul style="list-style-type: none"> -Institutional capacity improved. -Regulatory framework for PCB management and phase out implemented. -Main stakeholders trained on ESM of PCBs and system implemented. 	1,116,000	<ul style="list-style-type: none"> -Development of the regulatory framework and creation of the institutional capacity for PCB management. -Technical assistance in development of national ESM system for PCBs. 	150,000
2. Environmentally sound management (ESM) of PCB-containing electrical equipment and waste, and disposal of DDT	<ul style="list-style-type: none"> -National reference laboratory established. -Inventory updated -ESM system for PCBs established. -400 tons of PCB contaminated equipment, oil and waste eliminated. -15 tons of DDT eliminated -National disposal strategy for PCB, with financial scheme, developed and approved. 	10,790,000	<ul style="list-style-type: none"> -Provide conditions for laboratory upgrade and accreditation. -Develop ESM and technical guidelines. -Technical assistance with cost-effectiveness analysis of disposal options. 	1,500,000
3. Knowledge management and awareness raising	<ul style="list-style-type: none"> -Main stakeholders trained on ESM of PCBs and system implemented. 	829,993	<ul style="list-style-type: none"> -Technical assistance in training 	90,000

Project components, outcomes and outputs

72. The objective of this project is to establish an environmental management system (EMS) for PCB contaminated equipment, oil and waste in Guatemala and upgrade its technical expertise to develop a sustainable mechanism to complete the PCBs and DDTs disposal. The Ministry of Environment and Natural Resources (MENR) will be the entity responsible for project management.

73. The project has three technical components and one monitoring and evaluation component, each with its associated outcomes and outputs. Further details on project design are described below and summarized together with major risks, assumptions and impact indicators in the Project Results Framework (Annex A). The following paragraphs provide a brief description of the purpose of the project outputs and their contribution to the defined outcomes.

74. Component 1. Legal, regulatory and institutional capacity for the ESM (environmentally sound management) of PCBs within the strengthened and appropriate framework of POPs for Guatemala

75. Outcome 1. (GEF: US\$ 150,000; co-finance: US\$ 1,116,000). Strengthened national regulatory and institutional capacities for PCBs within the framework of POPs.

76. One of the most important outcomes of this project will be the establishment of the rules and regulations to strengthen the institutional capacity for monitoring and controlling compliance, in all instances, with the rules set during implementation of the environmental management system for PCBs. Especial focus will be put on the electricity sector companies that handle PCBs. The electricity sector companies have already been part of small and generally internal PCB projects, but it is now important to link their participation and commitments with their extended producer responsibilities through the formulation of a specific PCB management regulation. The existing POPs framework in Guatemala will also be further strengthened to ensure an integrated legislative approach to POPs management in the country. The regulatory institutions need to facilitate the awareness raising and training of their personnel on this topic and its corresponding PCB issues.

77. Output 1.1. Legal instruments and technical tools are designed and available to regulate and control ESM of PCBs within the framework of POPs, including trans-boundary movement.

78. This output involves the formulation of the regulatory framework under a participatory process with the main stakeholders and the necessary review by the legal departments of all the ministries involved on PCB management. Regulations on ESM of PCBs (e.g. incentives, taxation), standards and technical specifications will be drafted and approved by the Project Steering Committee (PSC).

79. Output 1.2. Guidelines for ESM of PCBs within the framework of POPs are developed for governmental bodies and other national organizations.

80. The preparation of guidelines for ESM of PCBs is essential to upgrade the knowledge of governmental bodies and especially the electricity sector in the identification of PCB devices, sampling facilities for transformer oils and other PCB-containing oils, proper waste handling and management of PCB-containing equipment, aspects of financial incentives for PCB management, treatment, disposal and remediation. The guidelines will be living documents in line with international standards to be used for trainings of the electricity sector. Fundación Defensores de la Naturaleza (FDN) will led the following activities by establishing several task teams:

- (i) Development of guidelines for the identification and sampling of PCB-containing equipment, including the use of field test kits and on-site analytical equipment, forms for data collection and reporting.

(ii) Development of guidelines for labeling electrical equipment according to relevant international guidelines to allow equipment traceability. It will include the design and printing of the labels for a) equipment from which samples were taken, b) PCB free equipment and c) PCB containing equipment.

(iii) Preparation of guidelines for a good maintenance practice and risk reduction practices including human safety measures and cross contamination avoidance: Guidelines will be developed jointly with major users of PCB-containing equipment to protect human health and the environment during the maintenance of the electrical equipment. That includes owners and service companies for transformers and capacitors, and other entities that could be involved in cases of accidents, such as fire brigades. Standardized procedures will be developed for draining PCB-contaminated oils from the transformers and its management and treatment. Existing regulations will be checked for suitability and regulatory gaps will be addressed. The project team will organize meetings for national and international experts to discuss the requirements for maintenance and the applicability of the existing international standards and practices

(iv) Development of safety measures to prevent PCB releases from operational equipment and storages facilities to the environment, including guidelines for the safe storage and handling of equipment and oils will be developed. These will include physical and organizational safety measures among others. As a result a guideline document will be published.

(v) Development of EMS and technical guidelines to identify the actions and responsibilities of the different PCB holders, specially owners and service companies, with regard to their PCB contaminated equipment, oils and wastes, their identification, storage, management, transport and disposal.

81. Output 1.3. Relevant stakeholders are trained and able to use/apply the norms, policies and regulatory framework for ESM of PCBs within the framework of POPs.

82. All relevant environmental technical government staff and local authorities will be trained by governmental representatives on the resulting PCB legislation and corresponding technical guidelines for PCB management to ensure its implementation. Relevant stakeholders in the electricity sector and others (e.g. INDE, Cementos Progreso, EEGSA, Nutrica, etc.) and high-level representatives of them will be trained by Defensores de la Naturaleza on these resulting PCB legislation and technical guidelines.

83. Output 1.4. Civil society (including CSOs, NGOs, ethnic groups and others) aware of the proposed legal / regulatory framework and able to participate on its discussion, with due consideration of gender and other key issues.

84. Outreach and awareness raising workshops will be the key activities under this output, to address health and environmental risks that occur due to the lack of appropriate handling of PCB contaminated equipment. Defensores de la Naturaleza will be in-charge of the design and implementation of the training and awareness raising campaigns for the society. The specific audiences will include workers dealing with PCB equipment and PCB wastes, people living close to facilities dealing with PCBs or PCB contaminated sites, as well as the general public. The target will be that at least 100 people (male and female) from the described audiences will be directly trained and that at least two awareness raising campaigns will be implemented during the project. Gender issues will be an integral part of these workshops (e.g. there will be gender-specific presentations and/or publications concerning health effects of PCBs on women and children and/or gender-specific technical guidelines), since there are communities, including women and children that are located close to the electricity facilities where PCBs are handled (hot spots).

85. The project will create awareness among local communities, especially women, children and indigenous populations on the health and environmental effects of PCB exposure, therefore contributing

to the closing of the gap between developed and developing countries that address POPs issues. All training and information material will be made available to the public through the MARN and Defensores de la Naturaleza (FDN).

86. Component 2. Environmentally sound management (ESM) of PCB-containing electrical equipment and waste, and disposal of DDT.

87. Outcome 2. (GEF: US\$ 1,500,000; co-finance: US\$ 10,790,000). ESM of PCBs established and disposal of PCBs and DDT achieved.

88. Output 2.1. National reference laboratory for PCBs and DDT established and inventory data validated and geo-referenced.

89. Activity 2.1.1. Development of analytical capacity, methods for PCB analysis and a national reference laboratory for PCBs selected, from existing laboratories

90. Methods of PCB analysis will be examined and, after decision-making, adopted. Then, selected existing analytical laboratories will be supported, upgraded and accredited regarding their capacity to conduct PCB analyses. Where required, the project will facilitate training and establishing of the analytical capacity and parameters.

91. Activity 2.1.2. Identification of PCB-containing equipment and establishment of priorities for further actions.

This activity will be based on the newly drafted and approved technical guidelines. Task teams will identify the equipment; take samples from it, for testing; document the status of the equipment; and ship the samples to the designated laboratory for each of the selected companies.

92. The monitoring will consist of a first screening with a kit or analyzer and confirmation by chromatography using a reference method. Based on the results, a list of PCB-containing equipment will be developed. The transformer data will be registered in a special form, collected, processed and put into a database. Information on risk assessment measures (like age of the electrical equipment, status of the electrical equipment, etc.) will also be recorded. Electrical equipment in critical conditions will be prioritized for immediate action.

93. Task teams will provide the required data to the competent authorities that will follow up the activities. They will also inform the local fire-fighting brigade about all PCB containing devices. Frequent updates will be fed into the central database.

94. For private and public owners, according to the foreseen legal framework it will be mandatory to declare all transformers and electrical equipment, supported by an analytical certificate. The sampling can be done by authorized companies which have to be determined, preferentially manufacturers or maintenance companies for transformers. These will be done according to the guidelines produced in this project.

95. Activity 2.1.3. Labelling all tested electrical equipment.

Task teams will label all equipment based on the officially approved format.

96. Activity 2.1.4. Development of a detailed inventory of PCB-containing equipment and wastes.

97. A comprehensive inventory including all potential PCB holders throughout Guatemala (Table 1) is essential to determine the types and quantities of contaminated equipment (transformers and capacitors), and contaminated oil and wastes along with their corresponding PCB concentrations. Data collected during the inventory will be included in an information system that will facilitate the continuous updating of the PCB findings through the use of methods for field collection and data analysis.

98. This activity will result in a detailed inventory of all PCB equipment with specifications on quality, quantity and location condition. It includes the uploading in the central database of the data corresponding to the monitoring results, data gathered through the demonstration projects and the declarations from owners as mandated in the foreseen legal framework. A priority list for phasing out will be also developed.

99. The national inventory will be updated and the information included in a database to allow the proper reporting to the Stockholm Convention and the monitoring of the elimination of contaminated equipment and oils.

100. Output 2.2. ESM system for PCBs established at each process step (identifying, handling, collecting, transport, safe interim storage and phase-out). (BAT/BEP guidance available for managing PCB wastes by hazardous waste operators included).

101. Activity 2.2.1. Training on practical implementation of the ESM for personnel involved in PCB handling.

102. Public owners and private companies that undertake activities with potentially PCB contaminated equipment will participate in training courses for handling of that equipment. The training will be held by national and regional experts involved in the on-going PCB projects (e.g. Peru and Bolivia) and will consist of two parts. The first part will be theoretical (e.g. knowledge of ESM of PCBs), which will be followed by a practical demonstration (e.g. demonstration of PCB analysis). This part of the training will be based on the guidelines and procedures, which will be developed through the Outcome 2 of the project.

103. Special training courses will be provided for the fire-fighting brigades.

104. Activity 2.2.2. Development of a timetable for phasing out PCB-containing electrical equipment.

105. One of the task teams will prepare a timetable with priority order for phasing out PCB-containing electrical equipment based on risk criteria. The first priority will be given to leaking devices and those which are located in critical places (food processing industries, hospitals, schools). This activity will also establish the legal deadline for the phase-out process depending on the priorities.

106. Activity 2.2.3. Interim storage of PCB-containing equipment and wastes including:

- Identification of possible interim storage locations

107. Based on the confirmatory PCB inventory a task team will estimate the required storage capacity and will investigate all potential locations that might be eligible for storing PCB wastes. This process will involve on-site inspections, which will include environmental assessing risks, aspects of accessibility, distance to human settlements, water bodies, site history and baseline, etc. Based on these assessments the task team will define a priority order for the locations. Financial assessments for upgrading the facilities will also be developed. These assessments will be submitted to the PSC. This activity will help advance in the facilitation of the procedure for environmental permits.

- Selection of interim storage locations

108. This selection will depend, among other things, on the support and commitment of the owners of the sites. After selecting the most suitable sites, MoUs for the cooperation on upgrading sites will be signed with local authorities and the site owners. The construction of the storage will not be covered by GEF financing. Contacts with the private sector have shown interest in the construction of such storage. This activity will allow advance in the facilitation of the procedure for environmental permits and the construction of storage facilities.

- Upgrading the interim storage locations

109. Experts will develop a feasibility study for upgrading the storage locations to meet the requirements for environmentally sound safe storages of PCB wastes. This activity will follow the guidelines produced

in Component 2. The feasibility studies will consider the design of the facility, emergency precautions, necessary infrastructures as well as human resources needed.

- Development and introduction of environmental monitoring systems at the interim storage area.

110. A PCB monitoring system will be established at the interim storage and working areas. Potentially contaminated areas will be checked on a regular basis. The exposure of the employees will also be monitored regularly. Inventory books, which will be controlled by local competent authorities will be provided and regularly updated. All transport of wastes will additionally be reported to the PSC during the project and to the POPs focal point afterwards in order to fulfill the reporting requirements under the Stockholm Convention.

111. Activity 2.2.4. Evaluation of alternative disposal strategies.

112. Based on the confirmatory PCB inventory assessment, at least two disposal options will be considered. One of them would be to export the collected PCB-containing waste and equipment for final disposal in line with international safety requirements. First, considering the current mass of PCB and DDT identified and the absence of local capacities, export would be a feasible option. Another option already identified would be national co-processing in a cement kiln (e.g. with support from Cementos Progreso). An economic, technical and social evaluation will be carried out for these or further options. Such evaluation may also consider replacement of PCB contaminated oil with PCB-free oil. The outputs of this activity will be useful for the implementation of a country-wide phase out and elimination plan.

113. Output 2.3. Up to 400 tons of PCB wastes and PCB-containing equipment and 15 tons of DDT are decontaminated or disposed of based on a cost-benefit analysis of the disposal strategies. (An appropriate strategy for the identification, collection and disposal of DDT and PCB-containing oil and PCB containing equipment will be developed during project implementation. The selection process will be done in line with UNIDO's procurement procedures and an open international competition).

114. Activity 2.3.1. Discussions with the representatives of the involved authorities for the selection of the demonstration projects.

115. Representatives from the involved authorities will be invited for a two-day discussion, aiming at raising awareness on the project and finalizing the criteria for the selection of the demonstration projects. These demonstration projects will cover all aspects related to PCB and DDT. In the case of PCB they will include safe handling of equipment, packaging, stowing for safe transportation, site remediation and requirements for treatment and final disposal. That holds for the practical execution and for the paperwork related to it.

116. These entities would provide a sound basis for the implementation of foreseen activities. The criteria for the selection of the demonstration projects will include the risks posed for the environment and human health, human resource capacities in managing PCBs, availability of potential storage locations, specific problems concerning PCBs, and potential contribution to the project. A list of criteria will be shared with the participants in order to identify the most suitable ones. Participants will be asked to describe how they could support the project and the planned activities of the demonstration projects. At the end of the meeting the criteria for selection will be finalized and submitted to the PSC for approval.

117. Activity 2.3.2. Selection of demonstration projects.

118. Involved authorities jointly with the owners of the PCB will submit their proposals to the PSC. These proposals will address all the criteria. The selection of the demonstration projects will be decided by the PSC. At least three demonstration projects will be selected, which will necessarily meet the average situation of the country. The information on PCBs in the demonstration projects will be extrapolated to the whole country with a high degree on reliability.

119. The PSC will support UNIDO with the identification of the demonstration projects. In line with UNIDO's procurement procedures, a MoU will be signed by the Executing Agency, the PSC, the involved authorities of the selected demonstration and the owner(-s) of the PCB and DDT.

120. Activity 2.3.3. Demonstration projects on disposal include phase-out, collection, storage and disposal of PCB equipment and disposal of DDT from the demonstration projects.

121. The PSC will consider and approve the phase-out and collection activities for treatment and final disposal. In line with UNIDO procurement procedures (para 173), tenders will be called for these pilot operations and will select the pilot operation implementation team, preferably a commercial company with experience in hazardous waste management. These tenders will be published for disposal operations. The most cost-effective solutions will be selected by the PSC.

122. The practical experiences learned from the selected pilot operations will be crucial inputs for the development of the countrywide phase-out and elimination plan. These pilot operations will be executed under the leadership of this team in joint cooperation with the involved authorities. The pilot projects will also be monitored by the PSC.

123. Output 2.4. A list of potentially contaminated sites, with PCBs or DDT, is prepared.

124. A task team will be established for the development of guidelines for the evaluation of contaminated sites. These guidelines will provide clear technical assistance with the suspected sites and methodologies for the sampling, testing and evaluation of the contaminated sites, including environmentally sound removal procedures for the identified sites. Then, a list of potentially contaminated sites will be prepared.

125. Output 2.5. Long-term PCB and DDT elimination and disposal strategy, including financially feasible business plans, developed and approved (based on project results).

126. Activity 2.5.1. Country-wide inventory estimation

127. Based on the activities of the project, countrywide inventory estimation will be developed. The lessons learned during the inventory operations will be used to develop a reasonable estimate of PCB containing equipment, wastes and sites for the country. These operations will also help to define a National Plan for PCBs management phase out and elimination that includes the time lines, human resources needed and costs of the countrywide inventory activities.

128. Activity 2.5.2. National business plan for long-term PCB elimination and disposal strategy, including financial schemes, developed and approved (based on project results)

129. A national business plan for the private sector dealing with PCB management, including financial strategies, will be elaborated based on the experience gained and outputs of the previous activities. The plan will consolidate a set of actions to be implemented at national level, in order to continue the actions started during this project. An agreed phase-out timetable will be included as long as an estimate the costs for maintenance of equipment and treatment of wastes and the monitoring and analytical costs associated to the remaining equipment. This action plan will also include an assessment of the country and global benefits achieved with it. The Plan will be submitted to the PSC for its approval. A MoU between the NEA, involved authorities and stakeholders will be signed.

130. The National Plan for PCB will include a time line that will consider the deadlines for the elimination of the existing inventories in line with Guatemala's commitment to fulfill the Stockholm Convention.

131. Component 3. Knowledge management and awareness raising

132. Outcome 3. (GEF: US\$ 90,000; co-finance: US\$ 829,993). Information and knowledge on treatment and disposal of PCBs and DDT is made available. Owners of PCB and DDT, relevant organizations, government officials, and citizens are aware of it.

133. This outcome will be mainly conducted by Defensores de la Naturaleza involving professional, agricultural, industrial and other organizations, including chambers, government institutions, other NGOs, citizens organizations, and owners of PCB and DDT. The methodology will involve a training of trainers' session for relevant government staff, the private sector, and targeted awareness raising activities, including relevant gender aspects of PCBs.

134. Output 3.1. Staff of MENR and relevant state organizations is trained on all aspects of BAT/BEP for ESM of PCBs and wastes, data tracking and reporting, including the use of on-line databases.

135. Staff of MENR and relevant state organizations will be trained to upgrade their knowledge in all the required fields for implementing, operating and controlling the ESM.

136. Output 3.2. Hazardous waste treatment operators are trained on BAT/BEP for the ESM and disposal of PCB/DDT wastes.

137. Hazardous waste treatment operators will be trained to upgrade their knowledge in all the required fields regarding BAT/BEP for the ESM and disposal of PCB/DDT waste.

138. Output 3.3. Transporters of PCB/DDT wastes are trained on BEP issues applicable to their activity.

139. Transporters will be trained to upgrade their knowledge in all the required fields related with transport of PCB/DDT wastes.

140. Output 3.4. Members of pertinent professional, agricultural, industrial or other organizations, the electrical sector, NGOs and citizen groups participate in workshops to become aware of ESM of PCB and disposal of PCB and DDT, and of alternatives for crop and disease protection.

141. Other stakeholders will be informed regarding the ESM of PCB and disposal of PCB and DDT.

142. Component 4. Monitoring and evaluation

143. Outcome 4. (GEF: US\$ 80,000; co-finance: US\$ 250,000). Monitoring and evaluation

144. Output 4.1. Monitoring and evaluation framework designed and implemented according to GEF procedures

145. As described in Part II, C, M&E plan, the activities associated with this outcome include organizing an inception workshop to validate or sharpen the project log frame and related baselines and indicators for the regular monitoring and evaluation procedures. These procedures will involve completion of an evaluation based on project design, project outcomes and impact indicators, development of an annual project financial audit, and preparation of 'APR/PIR reports. The completion of periodic reviews and a final evaluation are key activities that will be completed under this component.

146. UNIDO as the implementing agency will undertake field missions to provide technical input and to monitor the implementation process. Technical reviews will be done by a National Technical Advisor and the UNIDO Project Manager for the monitoring and evaluation of activities. At the end of the project, a terminal evaluation report will be prepared stressing the lessons learned through the project monitoring and evaluation. It will include the quality assessment of the achieved results versus the management practices, and the corrective measures taken throughout the implementation of the Plan.

A6. Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

Risks	Mitigation measures	Risk level
Lack of institutional support for PCB management related policy.	Get involved and support the National Commission on COPs composed by members of the main ministries and government organizations, so they contribute to project development, decision-making and seek the support from the relevant stakeholders.	M
Lack of interest from the public or private sector; due to fear for additional obligations to eliminate equipment containing PCB, without appropriate financial support.	The establishment of a business plan for replacing PCB-contaminated equipment and facilitating its elimination will be addressed at project implementation. These financial measures will be integrated into the PCB elimination and disposal strategy to be developed. Cost-benefit analysis and alternatives will be discussed with involved companies' coordinators.	L
Technical staff, particularly those having direct contact with PCB and DDT-wastes will be excessively exposed.	The technical staff will be trained on all safety precautions concerning handling, packaging, transportation and disposal of PCB and DDT-wastes. Protective clothes and equipment will be provided to the technical staff. Waste storage facilities will be properly guarded to prevent non-authorized admittance.	L
Environmental pollution through the management and transportation of PCB-containing equipment.	Training will be provided to all technical staff, project personnel and companies engaged on PCB management and transportation. Contingency plans will be developed in all stages of POPs waste management.	L
Occupational and environmental risks concerning the management of the interim storage sites are not properly understood and addressed.	Operational and safety standards will be introduced and well-trained staff will manage the interim storage facilities based on international technical guidelines. Emergency and contingency plans to address spill and accident response will be implemented and personnel trained accordingly. Worker health and safety issues will also be addressed in the technical guidelines.	L
PCB and DDT-waste management related legislations and standards will not be adhered to.	Frequent inspections will be developed and thorough documentation will be implemented to improve compliance of the legislation framework developed by the project.	L
Climate change risks	There will not be significant risks associated with climate change as the technologies chosen will be BAT/BEP, excluding the emission of additional CO ₂ or other GHG.	L

A.7. Coordination with other relevant GEF financed initiatives

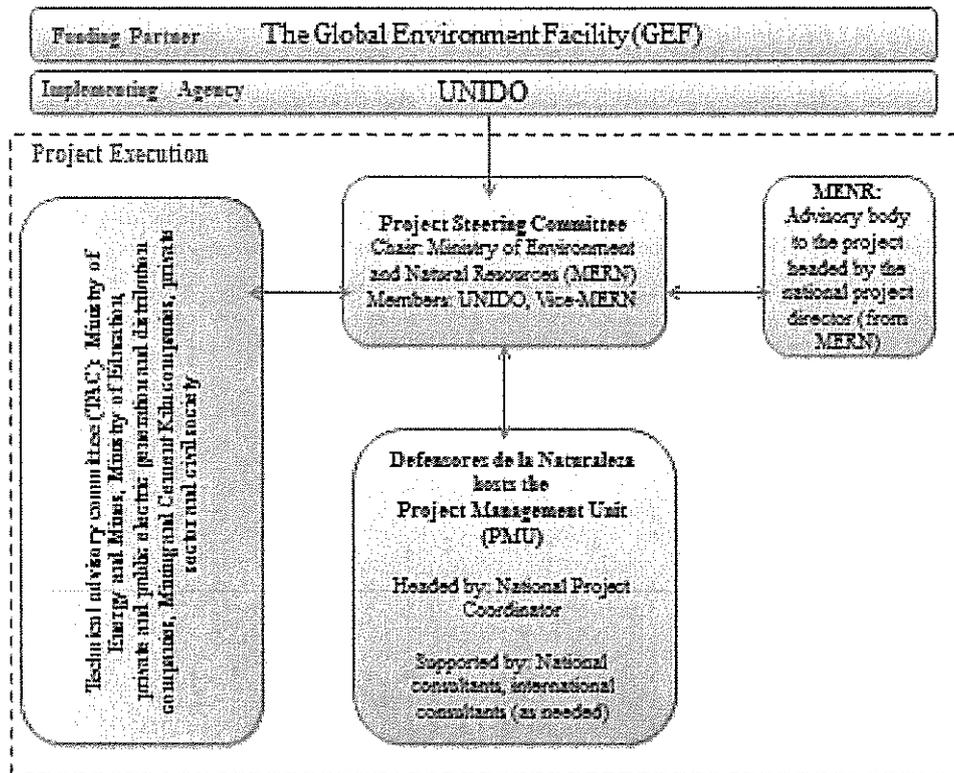
147. Since submission of the original NIP, Guatemala has not been able to implement any post-NIP project nor related POPs projects. Recently, the project "Enabling activities to review and update the national implementation plan for the Stockholm Convention on Persistent Organic Pollutants" has started its implementation with technical support from UNIDO and financial support from the GEF.

148. Guatemala is also part of the UNIDO-GEF project "Strengthening of National Initiatives and Enhancement of Regional Cooperation for the Environmentally Sound Management of POPs in Waste of Electronic or Electrical Equipment (WEEE) in Latin-American Countries", which is currently in its PPG phase.

149. Project implementation in Guatemala will also be based on lessons learned from the currently ongoing UNIDO-GEF PCBs projects in Peru (GEF ID 3709 *"Environmentally sound management and disposal of PCBs"*) and Bolivia (GEF ID 5646: *"Environmentally sound management of polychlorinated biphenyl (PCB) - containing equipment and wastes and upgrade of technical expertise in Bolivia"*).

B. Additional information not addressed at PIF stage:

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



Implementation arrangements

150. The GEF Implementing Agency for the Project will be UNIDO, with headquarters in Vienna and a regional office in Mexico City, Mexico. The executing responsibility will be with the Ministry of Environment and Natural Resources (MERN) assisted by NGO Defensores de la Naturaleza (FDN), which has been jointly selected as executing partner. A sub-contract, initially including training, capacity building, and awareness raising and project managerial tasks will be issued to FDN in accordance with UNIDO's procurement procedures. This arrangement may be reviewed by the Project steering Committee for its efficiency and tasks may be further expanded as mutually agreed. A National Project Coordinator will be recruited directly by UNIDO, in coordination with the MERN, to carry out project oversight activities in the field to ensure that project activities are fulfilled to achieve project objectives, outcomes and outputs. The Project Coordinator reports directly to UNIDO that is the main technical responsible body and MERN that is the main execution entity for the project.

151. The National Project Director, provided as government contribution, will oversee the project on behalf of the Government and chair the Project Steering Committee (PSC), assisted by the Project

Coordinator as PSC Secretary. Among its functions, the Project Steering Committee should approve the Annual Work Plan (AWP) and the Annual Budget. Any changes/amendments proposed to be done by the Project Steering Committee to the project and/or to the AWP or budgets should be done in accordance with approved project document and GEF policy C.39/Inf.09, UNIDO rules and regulations, and they have to be approved by UNIDO before they can enter into effect.

152. A Technical Advisory Committee (TAC), chaired by the National Project Coordinator, will be established for providing technical and practical input and coordination for project execution. The TAC will be integrated by representatives of the electricity generation and distribution activities, and the Health Sector on DDT. The Technical Advisory Committee will review technical outputs and advise on technical issues during project implementation.

153. As the GEF Implementing Agency (IA), UNIDO shall provide project cycle management services for this project, as defined by the GEF Council. UNIDO will also contract and manage project procurement activities as well as recruitment of international experts required.

154. As provider of funds for this project, the GEF logo will appear on all project publications. A quote on publications of GEF funded projects must also acknowledge the GEF's participation. UNIDO logo will be more visible and separated from the GEF logo, if possible, since for safety reasons UN visibility is more important.

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):

155. Socio-economic: The project will achieve the environmentally sound disposal of 15 tons of DDT and up to 400 tons of PCBs at the national level. It will also ensure that an environmentally sound management system is set-up for the remaining PCBs at the national level (legislation) and local level (private companies, hazardous waste operators). The EMS together with the knowledge management and awareness raising activities will ensure that PCBs will be handled within the framework of POPs without negative impacts on human health and the environment, and remaining PCBs, if occurring, will be handled safely and cost-effectively. This way Guatemala will fulfill its requirements for PCBs and DDT under the Stockholm Convention on POPs. Socio-economic benefits will be monitored throughout project implementation by UNIDO's relevant indicators (number Quantity of PCBs and DDT (tons) eliminated; number of companies adopting best practices; number of new businesses), creation of new jobs (male/female).

156. Gender: 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, men, 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 types of chemicals encountered, and the resulting impacts on human health. In line with UNIDO's gender mainstreaming policy of environmental management projects, the project will be prepared and implemented in a gender-sensitive and gender-responsive manner, e.g. through workshops (measured as participation by male/female; gender-specific presentations; gender-specific information material), trainings (measured as number of male/female, gender-specific presentations, gender-specific information material), gender-specific awareness-raising campaigns (e.g. targeted to women's group; gender-specific knowledge materials) and gender-specific technical trainings, wherever necessary.

157. Regarding the situation in Guatemala, it is expected that the majority of workers employed by electricity companies and the industrial and mining sectors, maintenance companies, junkyards, large

consumers and industries, among others, are men. Nonetheless there might be women and children in the communities surrounding electric maintenance facilities, who spend most of their time in potentially PCB / DDT contaminated areas which, if confirmed, may represent high human health risks. These gender dimensions will need to be present in both the project and on policy level interventions regarding the sound management of chemicals in general and of PCBs in particular. The project will ensure that relevant stakeholders are aware and have adequate knowledge of environmentally sound management of PCBs and special attention is to be given to women and children. Stakeholders will be informed about gender mainstreaming through regular project meetings and be kept informed about gender-related activities. Gender-sensitive actions might be raising awareness (e.g. gender-focused groups, number of gender-related events), knowledge dissemination (e.g. number of gender-sensitive publications) and conducting trainings (e.g. measured as number of female/male participants).

158. Global Environmental Benefits: The project will ensure that a significant quantity of PCBs and some DDT is destroyed, that would otherwise enter the global environment to compound global environmental problems. The project will thus contribute to the implementation of the Stockholm Convention to protect human health and the environment from persistent organic pollutants and will set an enabling environment that will facilitate the disposal of existing PCBs in Guatemala in a cost-efficient way. The project has secured funds for the destruction of up to 400 tons of PCBs owned by the public and private sectors, and 15 tons of DDT in hands of the health sector. Through co-financing, a long-term strategy for PCB elimination and disposal, including financial schemes, will be developed to ensure sustainability of the project. The improvements and lessons learned through this project will also offer global environmental benefits.

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

159. The proposed project is cost-effective in achieving its objective of disposing PCBs (in tons) and DDT (in tons) as it will work in coordination with already existing baseline activities that have invested in POPs management.

C. DESCRIBE THE BUDGETED M&E PLAN:

160. Project monitoring and evaluation (M&E) are conducted in accordance with established UNIDO and GEF procedures. The M&E activities are defined by project component 4 and the concrete activities for M&E that are specified and budgeted in the M&E plan. Monitoring will be based on indicators defined in the strategic results framework, and the annual work plan. Monitoring and evaluation will make use of the GEF Tracking Tool, which will be submitted to the GEF Secretariat at CEO and project closure.

161. UNIDO as the Implementing Agency will involve the GEF Operational Focal Point and project stakeholders at all stages of the project monitoring and evaluation activities in order to ensure the use of the evaluation results for further planning and implementation.

162. According to the Monitoring and Evaluation policy of the GEF and UNIDO, follow-up studies like Country portfolio evaluations and thematic evaluations can be initiated and conducted. All project partners and contractors are obliged to (i) make available studies, provide reports or other documentation related to the project and (ii) facilitate interviews with staff involved in the project activities.

M&E activity categories	Feeds into	Time frame	Budget USD *			Responsible Parties
			GEF (cash)	UNIDO (cash)	Gov't	
					In kind	
Measurement of GEF Tracking Tool specific indicators	Periodic review and Terminal Evaluation Reports	As needed and mainly at project completion	25,000	5,000	40,000	Project Coordinator or M&E consultants prepare reports to UNIDO Project Manager who then shares them with the MENR. M&E consultants submit final reports directly to UNIDO ODG/EVA and the Project Manager
Monitoring of project impact indicators (as per Log Frame)	Project Management; Semi-annual progress report; Annual GEF PIR	Semi-annually	30,000	5,000	40,000	Project Coordinator and Project Director, with the help of consultants prepare reports; then MENR submits them to UNIDO Project

Periodic Progress Reports	Project Management; Annual GEF PIR	Semi-annually or annually	45,000	10,000	40,000	Manager
Independent terminal evaluation	Terminal Evaluation Review (TER) conducted by UNIDO EVA and/or GEF IEO	Project completion (at least one month prior to the end of the project and no later than six months after project completion)	80,000	25,000	130,000	Independent evaluator for submission to UNIDO ODG/EVA and Project Manager
Total M&E budget			180,000	45,000	250,000	

163. A detailed schedule of project review meetings will be developed by the project management team in close consultations with the project implementation partners and stakeholders' representatives, and included in the Project Inception Report. The schedule will include: (i) tentative time frames for monitoring of GEF tracking tool and project impact indicators, periodic reports (ii) mid-term review and final evaluation.

164. Daily monitoring of the project activities in the field will be done by the National Project Coordinator (NPC) and supervised by UNIDO's project manager based on the approved Annual Work Plan (in line with the CEO approval and GEF guidelines) and its indicators. The Project Team will inform UNIDO of any delays or difficulties faced during the implementation so that the appropriate support or corrective measures can be adopted in a timely and preventative, rather than in a remedial manner.

165. UNIDO, through quarterly meetings with project counterparts or as frequently as deemed necessary, will undertake periodic monitoring of the project implementation process.

166. UNIDO will conduct periodic visits according with the project Inception Report/Annual Work Plan to assess project progress. Members of the Steering Committee may also accompany these visits. A Field Visit Report will be prepared by UNIDO and the project team and circulated to all Steering Committee members no later than one month after the visit.

167. Annual Monitoring will occur through Tripartite Project Review (TPR) meetings, which will take place at least once a year. The first such a meeting will be held within twelve months of the start of project implementation. The Project Management will prepare an Annual Project Report (APR) and submit it to UNIDO at least four weeks prior to the terminal evaluation for review and comments.

168. Project Monitoring Reporting: The national project team in conjunction with the UNIDO focal point will be responsible for the preparation and submission of the following reports that form part of the monitoring process. Items (a) through (f) are mandatory and are specifically related to monitoring, while

items (g) through (h) have a broader function and their frequency and nature are to be defined throughout project implementation.

169. (a) Inception Report

170. A Project Inception Report (IR) will be prepared immediately following the Inception Workshop. It will include a detailed First Year Annual Work Plan divided into quarterly timeframes, with detailed activities and progress indicators to guide the implementation during the first year of the project. The Work Plan will include the 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, including any monitoring or evaluation requirement to effectively measure project performance during the targeted 12-month timeframe.

171. When finalized, the report will be circulated to project counterparts, who will be given a period of one calendar month to respond with their comments or queries. Prior to IR circulation, UNIDO will review the document.

171. (b) Annual Project Report

172. The Annual Project Report (APR) is a UNIDO requirement and 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 TPR. The APR will be prepared on an annual basis prior to the TPR to reflect the progress achieved in meeting the project's Annual Work Plan and will assess project performance in meeting the intended outcomes through the specific outputs and partnership work.

173. The format of the APR is flexible but should include the following:

- Analysis of project performance over the reporting period, including outputs produced and information on the status of the outcomes;
- Constraints experienced in the progress towards results and the reasons for these;
- Expenditure reports;
- Lessons learned;
- Recommendations to address key problems in lack of progress, if applicable.

174. (c) Project Implementation Review

175. The Project Implementation Review (PIR) is an annual monitoring process mandated by the GEF. It is an essential management and monitoring tool for those responsible of the project and offers the main vehicle for extracting lessons from ongoing projects. Once the project is under implementation for a year, the project team shall complete the PIR. The PIR can be prepared any time during the year and ideally immediately prior to the TPR. The PIR should then be discussed at the TPR so the result will be a PIR that has been agreed upon by project staff, the national executing agency and UNIDO.

176. (d) Quarterly Progress Reports

177. Short reports outlining the main updates in project progress should be provided quarterly to UNIDO by the project team.

178. (e) Periodic Thematic Reports

179. As and when called for by UNIDO, the project team will prepare Specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written by UNIDO and will clearly state the issue or activities that need to be reported on. These reports will be used as a form of lessons learned exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered.

180. (f) Project Terminal Report

181. During the last three months of the project, the project team will prepare the Project Terminal Report (PTR). This comprehensive report will summarize all activities, achievements and outputs of the project, lessons learned, objectives met (or not met), and structures and systems implemented. The PTR will be the final summary of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may be taken to ensure sustainability and replicability of the project activities.

182. (g) Technical Reports

183. Technical Reports are detailed documents covering specific areas of analysis within the overall project. As part of the Inception Report, the project team should prepare a draft report list, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary, this report list will be reviewed and updated and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project and its sites. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

184. (h) Project Publications

185. Project Publications will constitute a key method of crystallizing and disseminating the project results and achievements. These publications may have scientific, technological or informational nature, and contain texts based on the project activities and achievements as journal articles, multimedia publications or other format for distribution. Publications can be based on Technical Reports or may be summaries or compilations of a series of Technical Reports or other research papers. The project team

will determine if Technical Reports merit formal publication and will also (in consultation with UNIDO, the government and other relevant stakeholders) plan and produce these publications in a consistent and adequate format.

186. Independent Evaluation: The project will be subjected to a final terminal evaluation: An independent Final Evaluation will take place within 6 months after the completion of project implementation. The final evaluation will also review 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. The Terms of Reference for this evaluation will be prepared by UNIDO in accordance with the TORs developed by the GEF Evaluation Office.

187. Audit Clause: The Government of Guatemala will provide UNIDO with certified periodic financial statements and with an annual audit of those financial statements regarding the status of the GEF funds according to the established procedures set out in the Programming and Finance manuals. The audit will be conducted by a legally recognized Government auditor, or by a commercial auditor engaged by the Government.

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)
Mrs. Michelle Melisa Martinez Kelly	Minister of Environment and Natural Resources (MERN)	MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES	04/10/2014

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 R. Scholtès, Managing Director, Programme Development and Technical Cooperation Division - PTC, UNIDO GEF Focal Point		05/18/2015	Alfredo Cueva Jacome 	+0043 1 260265228	a.cueva@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).

Interventions	Indicators	Baseline	Target	Sources of Verification	Assumptions
Project Objective	To enhance Inclusive and Sustainable Industrial Development (ISID) through the strengthening of national capacities for the environmentally sound management (ESM) of POPs, including disposal of 15 tons of DDT and up to 400 tons of PCB and related wastes, and reduction/elimination of PCB releases from serviced equipment at workshops and interim locations to protect human health and the environment				
Component 1	Component 1. Legal, regulatory and institutional capacity for the ESM (environmentally sound management) of PCBs within the strengthened and appropriate framework of POPs for Guatemala				
Output 1.1 Legal instruments and technical tools are designed and available to regulate and control ESM of PCBs, including transboundary movement.	Number of environment policies, strategies, laws, regulation approved/enacted	Lack of legal instruments and technical tools	At least one legal instrument and technical tool drafted in line with SC and country requirements	Legislation published	Commitment at the government level to enact the legislation
Output 1.2 Guidelines for ESM of PCBs are developed for governmental bodies and other national organizations.	Number of ESM guidelines for PCBs	Lack of ESM guidelines for PCBs	At least one ESM guideline for PCBs drafted	Guidelines published	Commitment at the government level and the main PCB holders to develop the guidelines International expert supports and supervises this activity
Output 1.3 Relevant stakeholders are trained and able to use/apply the norms, policies and regulatory framework for ESM of PCBs	Number of trainings Number of training participants/trainees (male/female)	Lack of knowledge on PCB-related legislation and lack of practical knowledge for ESM	At least 4 targeted trainings At least 100 stakeholders trained (70 male/ 30 female)	Reports of trainings held. List of participants (male/female) per course.	Interest and commitment in PCB management by the main holders. Proper announcement International expert will supervise this activity.

Output 1.4 Civil society (especially gender groups) are aware of the proposed legal / regulatory framework and able to participate on its discussion, with due consideration of gender and other key issues.	Number of awareness raising activities Number of participants (male/female) from civil society, especially women , workers and community people Number of gender-specific trainings	Lack of knowledge about the human health and environmental risks associate with improper handling of PCBs	At least 3 targeted awareness raising activities At least 1 gender-sensitive awareness raising activity	Reports of awareness raising activities List of participants reached (male/female) per activity	Interest in PCB management. Proper announcement
Interventions	Indicators	Baseline	Target	Sources of Verification	Assumptions
Component 2	Environmentally sound management system (ESM) of PCB-containing electrical equipment and waste, and disposal of DDT				
Output 2.1 National reference laboratory for PCBs and DDT established and inventory data validated and geo-referenced.	Number of accredited national reference laboratories Number of pieces of equipment sampled.	Analytical capacity by far insufficient. MENR has an inventory focused only on transformers out of service.	One analytical reference laboratory installed with the adequate capacity At least 6,000 devices sampled	Analysis / accreditation certificates. Central database for data collected during the inventory	Equipment and consumptions bought and available in time. International expert supervises this activity
Output 2.2 ESM system for PCBs established at each process step (identification, handling, collection, transport, safe interim storage and phase-out). BAT/BEP guidance for managing PCB wastes	ESM for PCB established and operative Number of people trained (male/female)	Lack of ESM for PCB	The ESM system for PCBs and DDT is available	ESM System reports. Training reports, work plans, alternative disposal evaluation Timetable for phasing out PCB available. Lists of participants (male/female)	Detailed training will be provided. Enthusiast participation of the private sector for

by hazardous waste operators available					
Output 2.3 Up to 400 tons of PCB wastes and PCB-containing equipment and 15 tons of DDT are decontaminated or disposed of based on decision resulting from the sound analysis of disposal strategies, including cost-benefit analyses	Quantity of PCBs and DDT (tons) eliminated/discontinued	Attempts to previous exports of PCBs and DDT were unsuccessful	Up to 400 tons of PCB disposed 15 tons of DDT disposed	An interim storage location upgraded. Copy of disposal plan; Technical documentation of PCB and DDT phase-out plan Reports on PCBs and DDT (tons) elimination/phase-out	Selection supervised by the PSC
Output 2.4 A list of potentially contaminated sites, with PCBs or DDT, is prepared.	Number of sites investigated/ number of contaminated sites identified	No precise data available	Contaminated sites identified	Final Report: "Potentially contaminated sites with PCBs / DDT"	Too many small remediation projects will cause too high costs International expert reviews this activity.
Output 2.5 Long-term PCB and DDT elimination and disposal strategy, including financially feasible business plans, developed and approved (based on project results).	Existence of long-term PCB / DDT phase-out strategy Number of new jobs (male/female)	Only individual actions are available and no country-wide plan exists for PCB / DDT management	National Plan developed At least 10 new jobs created (at least 2 female)	Copy of long-term phase out plan	Commitment International expert reviews this activity
Interventions	Indicators	Baseline	Target	Sources of Verification	Assumptions
Component 3	Knowledge management and awareness raising				
Output 3.1	Number of	Lack of			Interest and

Staff of MENR and relevant state organizations trained on all specific aspects of BAT/BEP for ESM of PCBs and wastes	training courses Number of participants / course.	experience / expertise	At least 10 relevant staff trained (7 male/ 3 female)	Reports of training events held. List of participants (male/female) per course/trainin g.	commitment on PCB management by the relevant organizations. Proper announcemen t International expert supervises this activity.
Output 3.2 Hazardous waste treatment operators are trained in depth on BAT/BEP for the ESM and disposal of PCB/DDT wastes.	Number of training courses Number of participants / course.	Lack of experience / expertise	At least 10 relevant operators trained	Reports of courses held. List of participants (male/female) per course.	Interest and commitment in PCB management by the treatment operators. Proper announcemen t.
Output 3.3 Transporters of PCBs wastes are trained on BEP issues applicable to their activity.	Number of training courses Number of participants / course.	Lack of experience / expertise	At least 5 relevant transporters trained	Reports of courses held. List of participants (male/female) per course.	Interest and commitment in PCB management by the transporters. Proper announcemen t.
Output 3.4 Members of pertinent professional, agricultural, industrial or other organizations, the electrical sector, NGOs and citizen groups participate in awareness workshops on ESM of PCB and DDT	Number of training courses Number of participants / course.	Lack of knowledge / lack of awareness	At least 50 relevant members trained	Reports of courses held. List of participants (male/female) per course.	Interest and commitment in PCB management. Proper announcemen t.

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

(i) **GEF comment 12.** Is the **project consistent and properly coordinated** with other related initiatives in the country or in the region?

UNIDO response: Since submission of the original NIP, Guatemala has not been able to implement any post-NIP project nor related POPs projects. Recently, the project "Enabling activities to review and update the national implementation plan for the Stockholm Convention on Persistent Organic Pollutants" has started its implementation with technical support from UNIDO and financial support from the GEF. Guatemala is also part of the UNIDO-GEF project "Strengthening of National Initiatives and Enhancement of Regional Cooperation for the Environmentally Sound Management of POPs in Waste of Electronic or Electrical Equipment (WEEE) in Latin-American Countries", which is currently in its PPG phase. Project implementation in Guatemala will also be based on lessons learned from the currently on-going UNIDO-GEF PCBs projects in Peru (GEF ID 3709 *"Environmentally sound management and disposal of PCBs"*) and Bolivia (GEF ID 5646: *"Environmentally sound management of polychlorinated biphenyl (PCB) - containing equipment and wastes and upgrade of technical expertise in Bolivia"*).

(ii) **GEF comment 16.** Is the GEF funding and co-financing as indicated in Table B appropriate and adequate to achieve the expected outcomes and outputs? Co-financing to be increased during PPG

UNIDO response: Co-financing of the PIF was USD 4,000,000. During PPG co-financing, stakeholder consultations were conducted. Mainly through the involvement of the private sector total co-financing of the CEO increased to USD 13,776,103.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS⁴

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

PPG Grant Approved at PIF: USD 85,000			
<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. International consultant for PPG draft	40,000	38,468.67	
2. National Travel	6,000	7,320.73	
3. National Consultants	14,000	18,992.86	
4. National workshops	8,000	3,492.72	
5. PCB analyzer and test kits	15,000	12,304.99	
6. Office supplies	2,000	135.82	
Total	85,000	80,715.79	4,284.21

⁴ 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.

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 GEF BUDGET ALLOCATION

Output Based Budget for the GEF Grant					
		GEF Grant Budget Component 1			
Outcome 1. Strengthened national regulatory and institutional capacities for PCBs within the strengthened framework of POPs ESM	Type of Expense	Year 1	Year 2	Year 3	Output Total
Output 1.1	International Expertise	10,000	10,000		20000
Legal instruments and technical tools are designed and available to regulate and control ESM of PCBs, including transboundary movement.	Local Travel				0
	National Expertise	5,000	10000		15000
	*Contractual Arrangement	10000	10000		20000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous				0
	Output sub-total	25000	30000	0	55000
Output 1.2	International Expertise	10000			10000
Guidelines for ESM of PCBs are developed for governmental bodies and other national organizations.	Local Travel				0
	National Expertise	5000			5000
	Contractual Arrangement	10000			10000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous		5000		5000
	Output sub-total	25000	5000	0	30000
Output 1.3	International Expertise	10,000			10000
Relevant stakeholders are trained and able to use/apply the norms, policies and regulatory framework for ESM of PCBs	Local Travel				0
	National Expertise				0
	Contractual Arrangement		10000		10000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous				0
	Output sub-total	10000	10000	0	20000
Output 1.4	International Expertise		10000		10000

Civil societies (especially gender groups) are aware of the proposed legal / regulatory framework and able to participate on its discussion, with due consideration of gender and other key issues.	Local Travel				0
	National Expertise		5000	5000	10000
	Contractual Arrangement		10000	5000	15000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous		10000		10000
	Output sub-total	0	35000	10000	45000
TOTAL Component 1		60000	80000	10000	150000

		GEF Grant Budget Component 2			
Outcome 2. ESM of PCBs at private and public utilities established and disposal of PCBs and DDT achieved	Type of Expense	Yr 1	Yr 2	Yr 3	Output Total
Output 2.1	International Expertise	10000	20000		30000
National reference laboratory for PCBs and DDT established and inventory data validated and geo-referenced	Local Travel				0
	National Expertise	8000	10000		18000
	Contractual Arrangement	10000	10000	10000	30000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous	5000	5000	3000	13000
	Output sub-total	33000	45000	13000	91000
Output 2.2	International Expertise	20000	20000	20000	60000
ESM system for PCBs established at each process step (identification, handling, collection, transport, safe interim storage and phase-out). BAT/BEP guidance for managing PCB wastes by hazardous waste operators available	Local Travel				0
	National Expertise	10000	10000		20000
	Contractual Arrangement	20000	20000	20000	60000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous		5000		5000
	Output sub-total	50000	55000	40000	145000
Output 2.3	International Expertise	30000	20000	20000	70000
Up to 400 tons of PCB wastes and	Local Travel	10000	10000	9000	29000
	National Expertise		10000	10000	20000

PCB-containing equipment and 15 tons of DDT are decontaminated or disposed of based on decision resulting from the sound analysis of disposal strategies, including cost-benefit analyses	Contractual Arrangement	10000	30000	30000	70000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment		1000000		1000000
	Miscellaneous				0
	Output sub-total	50000	1070000	69000	1189000
Output 2.4	International Expertise			10000	10000
A list of potentially contaminated sites, with PCBs or DDT, is prepared	Local Travel			5000	5000
	National Expertise			5000	5000
	Contractual Arrangement		10000	10000	20000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
					0
	Output sub-total	0	10000	30000	40000
Output 2.5	International Expertise		10000	10000	20000
Long-term PCB and DDT elimination and disposal strategy, including financially feasible business plans, developed and approved (based on project results).	Local Travel				0
	National Expertise			5000	5000
	Contractual Arrangement			10000	10000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous				0
	Output sub-total	0	10000	25000	35000
TOTAL Component 2		133000	1190000	177000	1500000

	GEF Grant Budget Component 3				
	Type of Expense	Yr 1	Yr 2	Yr 3	Output Total
Outcome 3. Information and knowledge on treatment and disposal of PCBs and DDT is made available. Owners of PCB and DDT, relevant organizations, government officials, and citizens are aware of it.					

Output 3.1	International Expertise		10000		10000
Staff of MENR and relevant state organizations trained on all specific aspects of BAT/BEP for ESM of PCBs and wastes	Local Travel				0
	National Expertise	5000	2500		7500
	Contractual Arrangement				0
	Training/Workshops		5000	5000	10000
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous				0
	Output sub-total	5000	17500	5000	27500
Output 3.2	International Expertise				0
Hazardous waste treatment operators are trained in depth on BAT/BEP for the ESM and disposal of PCB/DDT wastes	Local Travel				0
	National Expertise		2500		2500
	Contractual Arrangement		5000	5000	10000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous				0
	Output sub-total	0	7500	5000	12500
Output 3.3	International Expertise		10000		10000
Transporters of PCBs wastes are trained on BEP issues applicable to their activity	Local Travel				0
	National Expertise		2500	2500	5000
	Contractual Arrangement		5000	5000	10000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous				0
	Output sub-total	0	17500	7500	25000
Output 3.4	International Expertise		10000		10000
Members of pertinent professional, agricultural, industrial or other organizations, the electrical sector, NGOs and citizen groups participate in awareness workshops on ESM of PCB and DDT	Local Travel				0
	National Expertise		2500	2500	5000
	Contractual Arrangement		5000	5000	10000
	Training/Workshops				0
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous				0
	Output sub-total	0	17500	7500	25000
TOTAL Component 3		5000	60000	25000	90000

		GEF Grant Budget Component 4			
Outcome 4. Monitoring and evaluation established	Type of Expense	Yr 1	Yr 2	Yr 3	Output Total
<i>Output 4.1</i>	International Expertise			50000	50000
Monitoring and evaluation framework designed and implemented according to GEF procedures	Local Travel				0
	National Expertise	5000	5000	5000	15000
	Contractual Arrangement				0
	Training/Workshops	5000	5000	5000	15000
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous				0
	<i>Output sub-total</i>	10000	10000	60000	80000
TOTAL Component 4		10000	10000	60000	80000

		GEF Grant Budget Component 5			
Project Management	Type of Expense	Yr 1	Yr 2	Yr 3	Output Total
	International Expertise	40000	40000	30000	110000
Project Management	Local Travel	10000	10000	5000	25000
	National Expertise	5000	5000	5000	15000
	Contractual Arrangement				0
	Training/Workshops	4000	4000	4000	12000
	International Meetings/Workshops				0
	Equipment				0
	Miscellaneous	8000	5000	5000	18000
	<i>Output sub-total</i>	67000	64000	49000	180000
TOTAL PMC		67000	64000	49000	180000

		Yr 1	Yr 2	Yr 3	Output Total
TOTAL PROJECT COSTS		275000	1404000	321000	2000000

* Contractual arrangement include a sub-contract given to Fundación Defensores de la Naturaleza (FDN) for national project execution.

ANNEX F CO-FINANCING ALLOCATION

BUDGET DISTRIBUTION					
	GEF GRANT	National Co-financing (US\$)			Total
	(US\$)	In-Kind	Grant	UNIDO (Grant)	Co-financing (US\$)
Outcome 1. Strengthened national regulatory and institutional capacities for PCBs within the strengthened framework of POPs ESM	150,000	840,000	271,000	5,000	1,116,000
Output 1.1. Legal instruments and technical tools are designed and available to regulate and control ESM of PCBs, including transboundary movement.	5,000	40,000	100,000	5,000	145,000
Output 1.2. Guidelines for ESM of PCBs are developed for governmental bodies and other national organizations.	115,000	600,000	70,000	0	670,000
Output 1.3. Relevant stakeholders are trained and able to use/apply the norms, policies and regulatory framework for ESM of PCBs	15,000	100,000	50,000	0	150,000
Output 1.4. Civil society (especially gender groups) are aware of the proposed legal / regulatory framework and able to participate on its discussion, with due consideration of gender and other key issues.	1,5000	100,000	51,000	0	151,000
Outcome 2. ESM of PCBs at private and public utilities established and disposal of PCBs and DDT achieved	1,500,000	4,495,000	6,279,0000	16,000	10,790,000
Output 2.1. National reference laboratory for PCBs and DDT established and inventory data validated and geo-referenced	210,000	200,000	500,000	0	700,000
Output 2.2 ESM system for PCBs established at each process step (identification, handling, collection, transport, safe interim storage and phase-out). BAT/BEP guidance for managing PCB wastes by hazardous waste operators available	35,000	1,500,000	2,000,000	0	3,500,000
Output 2.3. Up to 400 tons of PCB wastes and PCB-containing equipment and 15 tons of DDT are decontaminated or disposed of based on decision resulting from the sound analysis of disposal strategies, including cost-benefit analyses	1,220,000	2,500,000	2,800,000	16,000	5,316,000
Output 2.4. A list of potentially contaminated sites, with PCBs or DDT, is prepared.	15,000	380,000	500,000	0	880,000

Output 2.5. Long-term PCB and DDT elimination and disposal strategy, including financially feasible business plans, developed and approved (based on project results).	20,000	95,000	474,000	0	569,000
Outcome 3. Information and knowledge on treatment and disposal of PCBs and DDT is made available. Owners of PCB and DDT, relevant organizations, government officials, and citizens are aware of it.	90,000	554,197.9	271,792.1	0	824,990
Output 3.1. Staff of MENR and relevant state organizations trained on all specific aspects of BAT/BEP for ESM of PCBs and wastes	30,000	200,000	100,000	0	300,000
Output 3.2. Hazardous waste treatment operators are trained in depth on BAT/BEP for the ESM and disposal of PCB/DDT wastes.	24,000	200,000	70,000	0	270,000
Output 3.3. Transporters of PCBs wastes are trained on BEP issues applicable to their activity.	10,000	100,000	50,000	0	150,000
Output 3.4. Members of pertinent professional, agricultural, industrial or other organizations, the electrical sector, NGOs and citizen groups participate in awareness workshops on ESM of PCB and DDT	26,000	54,197.9	55,792.1	0	109,990
Outcome 4. Monitoring and evaluation established	80,000	236,000	0	14,000	250,000
Output 4.1. Monitoring and evaluation framework designed and implemented according to GEF procedures	80,000	236,000		14,000	250,000
Project Management	180,000	780,110	0	10,000	790,110
Output: Project Management	180,000	780,110		10,000	790,110
	780,110				0
TOTAL PROJECT COSTS	2,000,000	6,905,307.9	6,825,795.1	45,000	13,776,100

ANNEX G WORKPLAN

Interventions	Year 1				Year 2				Year 3			
	Quarter (Q) 1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1. Legal, regulatory and institutional capacity for the ESM (environmentally sound management) of PCBs within the strengthened and appropriate framework of POPs for Guatemala												
Output 1.1 Legal instruments and technical tools are designed and available to regulate and control ESM of PCBs, including transboundary movement.												
Output 1.2 Guidelines for ESM of PCBs are developed for governmental bodies and other national organizations.												
Output 1.3 Relevant stakeholders are trained and able to use/apply the norms, policies and regulatory framework for ESM of PCBs												
Output 1.4 Civil society (especially gender groups) are aware of the proposed legal / regulatory framework and able to participate on its discussion, with due consideration of gender and other key issues.												
Environmentally sound management system (ESM) of PCB-containing electrical equipment and waste, and disposal of DDT												
Output 2.1 National reference laboratory for PCBs and DDT established and inventory data validated and geo-referenced.												

Output 2.2 ESM system for PCBs established at each process step (identification, handling, collection, transport, safe interim storage and phase-out). BAT/BEP guidance for managing PCB wastes by hazardous waste operators available													
Output 2.3 Up to 400 tons of PCB wastes and PCB-containing equipment and 15 tons of DDT are decontaminated or disposed of based on decision resulting from the sound analysis of disposal strategies, including cost-benefit analyses													
Output 2.4 A list of potentially contaminated sites, with PCBs or DDT, is prepared.													
Output 2.5 Long-term PCB and DDT elimination and disposal strategy, including financially feasible business plans, developed and approved													
Component 3. Knowledge management and awareness raising													
Output 3.1 Staff of MENR and relevant state organizations trained on all specific aspects of BAT/BEP for ESM of PCBs and wastes													
Output 3.2 Hazardous waste treatment operators are trained in depth on BAT/BEP for the ESM and disposal of PCB/DDT wastes.													
Output 3.3 Transporters of PCBs wastes are trained on BEP issues applicable to their activity.													

Output 3.4 Members of pertinent professional, agricultural, industrial or other organizations, the electrical sector, NGOs and citizen groups participate in awareness workshops on ESM of PCB and DDT							
Component 4: Monitoring and evaluation established							
Output 4.1. Monitoring and evaluation framework designed and implemented according to GEF procedures							

ANNEX H LEGAL CONTEXT

“The present project is governed by the provisions of the Standard Basic Cooperation Agreement between the Government of the Republic of Guatemala and UNIDO, signed on 11 October 2002 and entered into force on 3 January 2008.”

ANNEX I GEF Tracking Tool for Persistent Organic Pollutant

Separate file with name: “GEF-POPs-tracking tool”

