



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
 TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	Environmentally Sound Management and Destruction of PCBs in Mexico: Second Phase		
Country(ies):	Mexico	GEF Project ID: ¹	
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	5479
Other Executing Partner(s):	SEMARNAT	Submission Date:	2015-06-29
GEF Focal Area(s):	Chemicals and Wastes	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of parent program:	[if applicable]	Agency Fee (\$)	456,000

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
(select) CW-2 Program 3 (select)	GEFTF	4,800,000	20,000,000
Total Project Cost		4,800,000	20,000,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: Minimize the risk of exposure from PCBs to humans and the environment, while promoting Mexico's timely compliance with the Stockholm Convention requirements for PCB management, including convention decommissioning and destruction provisions. The project will eliminate 5,000 MT of oils and PCB containing equipment.						
Project Components	Financing Type ³	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Implementation of Integrated Services Management System (ISMS) for PCBs destruction in the entire country	TA	1.1. Individual states PCB inventories obtained 1.2. Operating Unit (PPP) for PCBs destruction established and operational 1.3. Integrated Services Management System (ISMS) implemented at national scale 1.4. Financing scheme developed, based on previous feasibility	1.1.1. Individual PCB inventories developed for 4 States 1.2.1 PPP Established: administrative/legal instruments approved, and PPP operational structure tested and operative. 1.3.1. National Outreach framework and strategy established and ISMS established and operational 1.4.1. Financing mechanisms concept developed, assessed	GEFTF	650,000	1,400,000

¹ Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

² When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCE](#).

³ Financing type can be either investment or technical assistance.

		studies, for destruction of PCBs in sensitive sites in all country.	and tested.			
2. Improvement of PCBs Management Services and Certification of PCBs Destruction	TA	2.1. Existing decontamination and/or destruction facilities upgraded. 2.2. Decontamination and/or destruction facilities certified 2.3. Electrical Maintenance facilities certified	2.1.1. Two (2) existing facilities upgraded and certified 2.2.1. One (1) new facility evaluated, tested, licensed and operational. 2.3.1. Two hundred (200) Electrical Maintenance facilities certified	GEFTF	1,800,000	7,000,000
3. Destruction of identified stock of PCBs	TA	3.1. PCBs destroyed by project in sensitive sites and industry; 3.2. PCBs destroyed by Mexican state-owned electric utility (CFE)	3.1.1. 5,000 MT of PCBs contaminated materials destroyed, from owners categorized as sensitive sites and industry as well as from CFE (Mexican state-owned electric utility)	GEFTF	1,930,000	10,500,000
4. Capture lessons-learned, monitor project progress and provide adaptive feedback and evaluation.	TA	4.1. Project results monitored and sustained, adaptive feedback and evaluation undertaken and results replicated	4.1.1 M&E and adaptive management applied in response to needs, mid-term and final evaluation findings with lessons learned extracted. 4.1.2 Results and best practices captured in knowledge management products and disseminated at national and international level.	GEFTF	180,000	600,000
Subtotal					4,560,000	19,500,000
Project Management Cost (PMC) ⁴ (Including Direct Project Cost (DPC) of up to 72,000)				GEFTF	240,000	500,000
Total Project Cost					4,800,000	20,000,000

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ()

⁴ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Recipient Government	SEMARNAT	In-kind	800,000
Recipient Government	SENER (CFE)	Grants	7,500,000
Recipient Government	Selected Provinces/Local Governments	In-kind	200,000
Private Sector	Owners of PCBs	Grants	4,000,000
Private Sector	Maintenance and Destruction Companies	Grants	7,000,000
Others	Development Financing Institutions	Loans	500,000
Total Co-financing			20,000,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS ^{a)}

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b) ^{b)}	Total (c)=a+b
UNDP	GEFTF	Mexico	Chemicals and Wastes	POPS	4,800,000	456,000	5,256,000
Total GEF Resources					4,800,000	456,000	5,256,000

a) Refer to the [Fee Policy for GEF Partner Agencies](#).

E. PROJECT PREPARATION GRANT (PPG)⁵

Is Project Preparation Grant requested? Yes No If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: \$					PPG Agency Fee:		
GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee ⁶ (b)	Total c = a + b
UNDP	GEF TF	Mexico	Chemicals and Wastes	POPS	100,000	9,500	109,500
Total PPG Amount					100,000	9,500	109,500

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁷

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	5,000 metric tons
	Reduction of 1000 tons of Mercury	N/A
	Phase-out of 303.44 tons of ODP (HCFC)	N/A

⁵ PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF up to \$2m (for MSP); up to \$100k for PF up to \$3m; \$150k for PF up to \$6m; \$200k for PF up to \$10m; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

⁶ PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

⁷ Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and/or SDCF.

PART II: PROJECT JUSTIFICATION

1. *Project Description.* Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area⁸ strategies, with a brief description of expected outcomes and components of the project, 4) [incremental/additional cost reasoning](#) and expected contributions from the baseline, the GEFTF, LDCE, SCCF, and [co-financing](#); 5) [global environmental benefits](#) (GEFTF) and/or [adaptation benefits](#) (LDCE/SCCF); and 6) innovation, sustainability and potential for scaling up.

I. GLOBAL ENVIRONMENTAL PROBLEMS AND ROOT CAUSES:

1. The section 5 of the Stockholm Convention on Persistent Organic Pollutants points out that each party shall adopt the measures as deemed necessary to reduce the total releases derived from anthropogenic sources belonging to each and all of the chemical products included in Annex C to protect the health of the population and environment globally. In line with this, Mexico is facing the challenge to phase-out, by 2025, all PCB-contained equipment, and dispose PCBs through an environmentally sound manner by 2028, as stipulated in the Stockholm Convention on Persistent Organic Pollutants. Based on the PCBs inventory, it is estimated that more than 37,667 metric tons (mt) of oils and PCBs-contained equipment exist in the country (meaning an average rate of 2,800 mt of PCBs that would need to be disposed annually). Therefore, it is of utmost importance to undertake activities that will create the enabling environment to allow Mexico to comply with its obligations under the Stockholm Convention, and to start the elimination of the remaining stock of PCBs as soon as possible.

2. A large part of the PCB stockpiles are located in sensitive sites as water wells, hospitals, schools, etc., which usually lack proper and stable funding to manage such wastes and, moreover, face difficulties in terms of the operationalization of replacement of transformers, as well as undertaking the proper analysis and disposal of old contaminated transformers. Even more problematic, in Mexico, is the "cross-contamination" of once PCB-free transformers, that happens after servicing interventions by maintainers applying bad practices.

3. In the beginning of 2014, the Government of Mexico has also enacted a Ministerial Order that created a new Policy for the management and disposal of PCBs. The policy instrument prohibits exports of PCBs for destruction, meaning that all PCBs contained in liquids and solids must be disposed within Mexico borders, using local structure and capacities.

4. Mexico has a total of 6 (six) facilities that could potential dispose of PCBs. 4 (four) facilities use non-incineration technologies (described in 4(a) below) and 2 (two) use incineration for the final destruction (described in 4(b) below). The combined nominal waste (all streams) management capacity of the existing facilities is estimated as follows:

(a) 19,000 mt for chemical treatment (as maximum installed capacity). However, after surveys and field assessments undertaken under the UNDP-GEF project (GEF ID#3270), it was concluded that the combined authorized capacity in Mexico is actually not greater 10,000 mt/year for PCB disposal. It is important to reinforce that a high level of uncertainty remains over those facilities' performance. In practice, effective disposal capacity - according to international standards - is unknown, but expected to be much lower than the authorized capacity. In this sense, the specific assessments of the 4 (four) plants are as follows:

i. The largest facility has been recently authorized (licensed) to eliminate PCBs (and other waste streams), but this company refused to receive the project technical team, so a field assessment on performance could not be undertaken;

⁸ For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving.

ii. Two facilities were visited, and an assessment undertaken, it was found that both facilities lack technical data and performance information to assure the adherence to international standards in their operations (PCBs destruction performance); and

iii. The fourth facility is a decontamination of solids plant. The PCBs recovered are meant to be exported for destruction. The preliminary results of the assesment indicate that the operation is done according to international standards, but it would have to be verified, nevertheless, in detail. However, due to recent national policy, all exports of PCBs are forbidden, meaning that this plant cannot be used as an alternative for PCBs disposal.

(b) 14,000 mt/year (of maximum capacity) for incineration, as assessment undertaken in 2 companies, detailed as follows:

i. The smaller facility is located in the State of Tamaulipas, and has a 1,225 mt/year capacity, of which 1,000 mt/year is for PCB liquids. But this plant has been permanently closed by the state environmental agency due to non-compliance with several standards and regulations.

ii. The second one is located in the State of Mexico and has 12,775 mt of installed capacity - that is mostly dedicated to waste streams other than PCBs (sensitive waste from the Ministry of Treasure and illegal drugs and other confiscated items). Of these, only 1,500 mt/year is dedicated to PCB liquids. However, this incineration facility has to “dilute” the feeded materials (with carrier solids in a ratio 1:1) that in practice reduce the injection capacity to 750 mt/year of PCBs contaminated oils. Therefore, only one plant is available to incinerate PCBs in Mexico.

5. The situation with regards to transportation, storage and processing of PCB contaminated materials capacity in Mexico is the following:

(a) 41,500 mt for transportation of PCB contaminated materials;

(b) 11,500 mt for storage and processing of PCB contaminated materials.

6. Finally, it is important to state that both the disposal facilities operate with less than 10% of the capacity currently regarding PCBs, mainly due to the lack of identified PCB waste streams (meaning that hardly any action is being taken by PCB owners/holders for their disposal) and because such facilities also handle other waste stream, particularly the incineraton ones. Incineration, which is common practice all over the world, is known as a safe process to destroy not only PCBs, but other hazardous wastes also. It is concluded, then, that the PCBs incineration capacity of Mexico is 750 mt/year of liquids, and the real capacity for solids/chemical treatment (that can meet international standards) is unknown or even inexistent. The result is that the national capacity to dispose of PCBs in Mexico falls well below the target of 2,800 mt/years if liquids and solids required, in order to allow the country to comply with the Stockholm Convention commitments.

II. ASSOCIATED BASELINE PROJECTS

7. The GEF/UNDP Project #3270 (Environmentally Sound Management and Destruction of PCBs), which will be completed by August 31st this year, has managed to dispose of 6,004 mt of PCBs (including 4,170 mt of PCBs by the Comisión Federal de Electricidad - CFE, which is the Federal Utility company) and thus greatly surpassing the original target of 3,215 mt. It is concluded that the overall project co-finance goal was fulfilled and the project still managed to mobilize additional 33%. The project also developed a national "top-down" inventory of PCBs, it assessed the current capacity of management and destruction facilities (including those for exports) and undertook training and awareness/outreach strategies.

8. During the implementation of the GEF/UNDP Project #3270, it was identified that bad practices undertaken by electrical maintenance shops resulted in "cross-contamination" of once PCB-free transformers. The project also

found that no regulation on such issue existed, and the Standard NOM-133-SEMARNT-2000 (hereby referred as "Standard 133" from now on) was developed and is expected to be approved by the Government of Mexico in 2015, in order to regulate the transformers maintenance activities and their operators.

9. The project #3270 has also established a pilot programme for "Integrated Services Management System (ISMS)" in the provinces of Guanajuato, Chiapas, Distrito Federal and Nuevo León. The project also had promoted the draft of the Standard 133 (which demands the analysis of transformers oils to be compulsory, requires the creation of a maintenance log, create a "bottom up" mechanism for the transformers inventory and demands that the companies comply with good practices) as well as promoted the public discussion around it. To date, 13 electrical maintenance shops have been certified in best practices for PCBs management by a third party. The project is finalizing the ISMS electronic information system (beta version); and the publication of 3 guidelines on technical issues and best practices.

10. The project has assessed potential storage sites for PCBs and other hazardous oils, and has concluded that there is enough capacity in the country for storage, although some improvements are still necessary from the environmental safety point of view. Seven (7) enterprises for management and destruction of PCBs were assessed (5 private, 1 public and 1 private not operational). The inoperative company was not further addressed. One private-owned company was found to have full operational capacity, including having BAT/BEP to manage PCBs and its contaminated oils/equipment. The other 5 companies received guidance regarding how to improve operations.

11. Moreover, the disposal facilities operate under federal government permits, which were issued many years ago. Some of the permits do not have expiration dates, and therefore, the operations of the facilities are not subject of the environmental's authority regular review on performance (updated proof of performance could be required at the moment of the renewal/extension of such permits if it was the case), and also, these permits cannot be cancelled. Due to the lack of regular environmental auditing, it is suspected that the facilities may not operate in environmentally sound conditions, which may mean that any incineration practice would result in emissions of UPOPs. It is concluded then that such facilities would require a third party verification to certify that these can apply BAT/BEP, and to assure they comply with national law and with international standards, such as measurements of DE (Destruction Efficiency), DRE (Destruction and Removal Efficiency), emissions of PCCD/F and mass balance all the outstream in order to obtain quantified and formal results on performance.

III. BARRIERS THAT NEED TO BE ADDRESSED:

Barrier 1: Gap between approval of Standard 133 and its full implementation in the field:

12. It is recognized that essential steps were taken under the GEF/UNDP project #3270 in matters related to improvement of practices for PCBs management and transformers maintenance in the country, and the main result is the draft of the above mentioned standard that will set a new paradigm over BEP in Mexico. However, it is envisaged that a gap will still exist between the approval of the Standard (expected to take place by end of 2015) and its full implementation. This issue is explained because of the natural period demanded by companies to adapt themselves to the new requirements, but this fact may suffer a big turn down if no proper technical assistance is given in order to decode the Standard and support the companies in the application of its requirements in their daily activities.

Barrier 2: The high cost, the lack of coordinated management of stocks and the lack of logistics for transportation of PCBs - from the origin to the destruction facilities.

13. The GEF/UNDP project #3270 has also found that the PCBs stockpiles are spread all over Mexico provinces, and this issue is magnified by the size of electrical grid and the remote locations of the contaminated transformers. Those facts pose great challenges to the national utility company and the electrical servicing shops in terms of rationalization of operational costs related to identification of PCBs, retrieval of transformers, recovery of oil, verification/decontamination/temporary storage and transportation (which are, at least, 25% more expensive to be recovered and disposed of through individual actions when compared with the costs of a joint and centralized management system that could be put in place to achieve gains of scale on common disposal processes). There is

also lack of coordination between the transformers owners and servicing shops that are widespread in Mexico, in terms of their capacity to group together and obtain economies of scale in the activities of identification of PCBs, management and logistics of transportation - which are key to lower such costs.

Barrier 3: Lack of installed capacity and lack of certified destruction facilities that can apply BAT/BEP and can comply with international standards on performance of PCBs incineration

14. There is some PCBs destruction capacity in Mexico, which is composed by only one licensed and operational company capable to incinerate 1,500 metric tonnes of liquids per year. Taking into consideration the PCBs inventory of Mexico (37,667 mt of liquids and solids), the country would need to dispose of, in average, 2,800 mt/year of materials contaminated with PCBs (liquids and solids) until 2028, to comply with the Stockholm Convention. In this sense it might be inferred that the current installed capacity could not provide the means to PCBs owners/holders to dispose the inventory, even in the case where elimination is spread out equally in every year. On top of that, the only operational incineration facility has to nominal capacity of 1,500 mt/year (of liquids) (in the State of Mexico) needs to “dilute” the feeded materials (with carrier solids in a ratio 1:1). In practice, this reduce the injection capacity to 750 mt/year of PCBs contaminated oils. Furthermore, since it is the only incineration facility operating in the country, this company also processes other wastes streams and materials (meaning that there is competition with PCBs waste for its installed capacity - PCBs would only be a fraction of their potential capacity). Therefore, it can be concluded that the installed capacity for incineration within Mexico borders is not sufficient. Additionally, it is also not clear if such operational destruction facility can comply with national and international standards related to destruction performances (DE and DRE), as well as if the incineration process is able to be done without emitting PCCD/F and other hazardous substances. Finally, other chemical destruction facilities are either not operational or can not guarantee destruction efficiency according to international and national standards, so they can not be used in Mexico’s efforts to eliminate the PCBs.

III. BASELINE SCENARIO, PROPOSED ALTERNATIVE SCENARIO, OUTCOMES AND COMPONENTS

15. In summary, the Project will consist of implementation - at a national scale - of 3 interventions which are considered essential to scale up the elimination of PCBs in Mexico. The first is to implement and start operation of a Public Private Partnership (PPP) that will coordinate the integrated management activities in the entire country, creating economies of scale and thereby allowing lower costs for PCBs owners, and simplify the logistical conditions for their management. This intervention will look after a sustainable finance scheme to dispose PCBs located in sensitive sites (such as hospitals); The second intervention will assess and certify the PCBs destruction capacities of the existing facilities in the country in order to assure environmentally sound disposal in accordance with international standards; it will also assess other disposal alternatives to complement such capacities to dispose liquids and solids contaminated with PCBs. As part of this intervention, a number of electrical maintenance enterprises will be technically supported and taken to certification state by a third party; this becomes important as a means to stop spreading further cross contamination. Finally, the third intervention will promote the destruction of, at least, 5,000 mt of of PCBs in Mexico, including that of sensitive sites and Small and Medium Sized Enterprises (SMEs) mainly and that of CFE.

Component 1: Implementation of Integrated Services Management System (ISMS) for PCBs destruction in all country

Baseline Scenario

16. The costs for handling and disposal of PCBs were determined by experimentation and piloting in UNDP-GEF project #3270, and for small batches distributed in large areas, such costs were estimated on 6,200 US\$/mt for destruction, including handling. It is expected that such costs could be lowered by 25%, approximately, through a Integrated Services Management System (as demonstrated in selected provinces in the project #3270), minding that similar costs exist in cases where materials are exported for destruction. On the other hand, difference in costs between these medium-to-small holders and the costs for the large owner (CFE) of large stocks of liquids is about 50% (2,350 US\$/t for destruction plus estimated 50% more for identification, handling and transport = a total of

3,050 US\$/t for a large user as CFE). Strong market competition exists for the relatively small existing stocks. In the absence of a full roll-out of Integrated Services Management System to all remaining states, handling and disposal costs are going to be much higher, and are likely to limit the disposal efforts of PCBs-contained equipment by individual PCBs holders. Feasibility study of destruction of PCBs materials, at present conditions, amount to between 250 and 500 M US\$ in total.

17. Currently, there are about 1,200 Electrical maintenance shops in the country providing services to PCB-contaminated and PCB-free transformers. A technical manual for the introduction of good practices - to avoid further cross contamination of equipment during maintenance intervention - has been developed, but has only been voluntarily implemented in a limited number of shops (estimated 55). In this sense, the major part of shops are still implementing business as usual practices that result in cross-contamination (which increase the disposal costs), mainly because Standard 133 has not been approved and can not be applied.

18. In this baseline scenario, under existing conditions, cross-contamination of PCBs-free equipment will continue, and further enlarge the PCBs-contaminated stockpile. In the previous conditions scenario, the elimination rate of PCBs oils had been around 150mt per year (using only national capacities) which was duplicated to 300mt/year through the interventions of the UNDP-GEF project #3270. In the BAU scenario, due to the high costs for managing PCBs, by 2028, Mexico is expected to dispose a total 3,900mt - well below the estimated national stock of 37,667mt, potentially putting Mexico in a situation of non-compliance with the Stockholm Convention.

Proposed Alternative Scenario (activities supported by the GEF):

19. This first component is related to the full rollout at a national scale of the operation and implementation of the Integrated Services Management System (ISMS) for PCBs handling and destruction. This alternative scenario consists of the establishment of a Public-Private Partnership (PPP) that will enlarge the scope and apply the ISMS nationally. For this, a final (national) version of the software will be developed and tested, and will be operated by a coordinating unit, supervised by a steering committee headed by the Government and cost-shared, over the years, by the enterprises (beneficiaries of the system). It is estimated that this system will cost less than 2 percent of the destruction costs of the complete PCBs inventory, and thus, will be absorbed into these. As a major goal, such system is expected to bring economies of scale for PCBs disposal costs nationwide of, at least, 25% if compared with individual PCB disposal initiatives taken by those holders (besides the outreach effect into the PCBs generators).

20. The ISMS will also provide tools to Mexico's provinces so they can further improve their subnational inventories on PCBs, using a "bottom-up" approach, and taking advantage of experiences generated by the GEF/UNDP project #3270 in the development of the national "top-down" inventory.

21. The project will also develop a financing scheme, based on previous feasibility study, to establish conditions to finance the destruction of the remaining stock in Mexico, using the experiences under the Component 3 of this project.

Expected Outcomes:

- 1.1. Individual states PCB inventories obtained;
- 1.2. Coordination Unit for PCBs management and destruction system established and operational;
- 1.3. Integrated Services Management System implemented at national scale;
- 1.4. Financing scheme developed, based on previous feasibility study;

Expected Outputs:

- 1.1.1. Individual PCB inventories developed for 4 States
- 1.2.1 PPP Established: administrative/legal instruments approved, and PPP operational structure tested and operative.
- 1.3.1. National Outreach framework and strategy established and ISMS established and operational
- 1.4.1. Financing mechanisms concept developed, assessed and tested.

Component 2: Improvement of PCBs Management Services and Certification of PCBs Destruction

Baseline Scenario

22. There are 2 (two) incineration facilities: The first one is located at the extreme north east of Mexico, Tamaulipas state, and has a rotary kiln with capacity to process 1,000 ton-liquid/year, but is not operational; The second is located in the central part of the country, State of Mexico, with nominal capacity of 1,500 ton-liquid/year, being that this second one has operation permits (licenses) in Mexico to destroy PCBs (as evaluated by the UNDP-GEF project #3270). Both facilities were assessed, having post-combustion chambers the filters, however it was found that their process control is less than optimum, including having issues related to the emissions control equipment, or for not having independently assessed with Proof of Performance tests (PoP) to demonstrate the capability of the incinerator to meet the Stockholm Convention standards.

23. Another alternative of incineration, in cement kilns specifically, was explored in the country about 10 years ago. Pilot tests protocols were run for lower concentrations of PCBs, as well as for other organochlorinated compounds, and the result was that such concentrations could be destroyed meeting the DE/DRE standards. However, large cement companies in Mexico abandoned the project because of perception that handling PCBs could bring problems to their public image. There was an approach from one of the largest cement companies (promoted by UNDP-GEF project), in order to reconsider the above mentioned position, however no final decision or course of action has been agreed.

24. Regarding chemical (dehalogenation) processes:

- (a) 1 (one) company was not assessed;
- (b) 2 (two) companies were assessed by UNDP-GEF project #3270, being (i) Decontasolv and (ii) SD Myers; the first uses Sodium Metal (with the considerable risk involved) and the last applies a proprietary organic compound. The 2 companies showed unclear process results, particularly regarding efficiencies and final waste balance. Both companies are known to have minimal operations, due to lack of demand.
- (c) The fourth company that makes use of a mobile unit with a relatively large capacity. It also has a permit; and
- (d) Furthermore, there is interest from a fifth company (an international one: Sea Marconi) to start operations in the country.

25. In this baseline scenario, there is still a great difficulty to find reliable processes (that comply with legislation/standards) that could undertake the transformers decontamination (and later, the destruction of oils), which are required for about 150,000 units dispersed in about 2 million square kilometers, mainly at a small scale (portable units). Even if portable decontamination units could technically operate in Mexico immediately, meeting the proper standards, those would still be prohibited to offer services since the current permit legislation does not allow that the hazardous waste management could be done by such type of facilities. In the event that the legislative framework for operation permits is changed promptly, it is estimated that, for a new process, the government would still take at least 2 years to issue such permissions.

26. Regarding the electrical maintenance workshops, the estimate is that the existing 1,200 in the country operate, so far, without any regulation or control. In the baseline scenario, most of them, as are very small scale facilities and lack information about regulations, are still expected to operate without such regulatory control, and with strong difficulties to improve their technology and practices.

Proposed Alternative Scenario (activities supported by the GEF):

27. With support from the GEF, the operations of all PCBs destruction facilities will be improved, both in their process as well as in their emissions control systems. Special attention will be paid to the upgrade of the emissions control systems and the exhaust gases post-combustion conditions. This will require the promotion of test burns and sampling of gases and ashes in order to verify DE/DRE and other conditions of the stacks and wastes. In the end, the

incineration facility(ies) in the country will soundly destroy PCBs, according to international standards. Improvement of practices will be promoted and destruction/management facilities will be certified by a third party. This work will entail the activities of: update the assessment, in a more comprehensive approach, of existing facilities; AND support the improvements needed, design and implement activities to upgrade their operations in order fulfill all requirements' for sound management and disposal of PCBs.

28. 200 (two hundred) electrical maintenance service shops will be certified in order to have a "critical mass" of shops that can supply services with reduced (or inexistent) risk of cross contamination, complying with the Standard 133. Results are to be systematized and shared so other 1,000 service shops can also take the necessary steps to comply with the Standard 133.

Expected Outcomes:

- 2.1. Existing decontamination and/or destruction facilities upgraded.
- 2.2. Decontamination and/or destruction facilities certified
- 2.3. Electrical Maintenance facilities certified

Expected Outputs:

- 2.1.1. Two existing facilities upgraded and certified
- 2.2.1. One new facility evaluated, tested, licensed and operational.
- 2.3.1. Two hundred Electrical Maintenance facilities certified

Component 3: Destruction of identified stock of PCBs

Baseline Scenario

29. There is 1 (one) licensed and operational incinerator in the country providing disposal services for PCBs. This facility has "liquids-only" destruction capacity of 1,500 Ton/year, considering that facility is also processing other hazardous liquid waste - and that for PCBs dillution rate of 1:1 is required for feeding the materials in the kiln - this implies that there is just barely 750 mt/year of installed capacity for the annual needs of the electrical sector for PCBs incineration to comply with the 2028 target (using only national capacities). Under the baseline scenario, it is unlikely that new facilities will be installed in the country, at their own initiative, to operate for such a short amount of demand (14 years), if those new potential facilities are deemed to only to destroy/incinerate PCBs.

30. There is also 1 (one) new facility that will offer the services of decontamination of PCBs-contained equipment that could attend part of the national demand. Additionally, over 90,000 Tons of "non-contamited PCBs (that have between 5 and 50 ppm) may not need to be destroyed, but still must be identified and inventoried in order to meet the Standard 133 and the requirements of the General Law for Prevention of Waste (LGPGIR). In this scenario the disposal facilities (incineration and decontamination ones) will continue to operate under sub-optimal conditions, but with uncertain capacity to meet international standards on DE/DRE and decontamination performance.

31. Yet, in this baseline scenario, CFE has allocated, approximately, a total of US\$ 7,000,000 to manage and dispose of a total of 2,000 mt of PCBs-contained equipment in the next 5 years. However it is still unclear if this stockpile can be disposed of using domestic facilities in accordance with international standards considering current limitations faced by national disposal facilities.

Proposed Alternative Scenario (activities supported by the GEF):

32. The project will increase the quantities of PCBs disposed, promoting the destruction of, at least, 5,000 mt, using initial co-financing from CFE and leveraging more funds from PCBs generators (sensitive sites, industries and CFE - the electrical Utility of Mexico). That quantity is about 15% of the total estimated stock of Mexico.

33. This part of the inventoried stock will be managed and the project will provide tools, experiences, and an enabling environment for the management and disposal of the remaining stocks in Mexico, that will be destroyed in accordance with Stockholm Convention timelines and taking advantage of a more sustainable financial environment.

Expected Outcomes:

- 3.1. PCBs destroyed by project in sensitive sites and industry;
- 3.2. PCBs destroyed by mexican government utility (CFE)

Expected Outputs:

- 3.1.1. 5,000 MT of PCBs contaminated materials destroyed, from owners categorized as sensitive sites and industry as well as from CFE (Mexican Utility)

Component 4: Capture lessons-learned, monitor project progress and provide adaptive feedback and evaluation.

34. This component's overall purpose as reflected in the associated Outcome 4.1 and Outcome 4.2 is to raise awareness on issues related to the environmentally sound management and disposal of PCBs; and, to ensure the monitoring of project results, the extraction of lesson-learned and the dissemination of project experiences

Expected Outcomes:

- 4.1. Project results monitored and sustained, adaptative feedback and evaluation undertaken and results replicated

Expected Outputs:

- 4.1.1 M&E and adaptive management applied in response to needs, mid-term and final evaluation findings with lessons learned extracted.
- 4.1.2 Results and best practices captured in knowledge management products and disseminated at national and international level.

IV. INCREMENTAL/ADDITIONAL COST REASONING

35. Without the project, Mexico may destroy between 750mt - 2,000mt of PCBs, using national disposal facilities operating under current conditions (without confirmation of destruction performance and the avoidance of UPOPs emissions). In this sense, the GEF intervention will improve this scenario by increasing the destruction target of PCBs to 5,000 mt (triggering additional co-finance). The project will also assess and develop a financing scheme that will facilitate the elimination of the remaining PCB stocks in the future in Mexico.

36. Without the project, cost of handling and disposal of PCBs, owned by individual companies, is expected to be at least 25% higher through individual activities taken by these PCBs owners/holders. The GEF intervention will provide economies of scale as a result of the introduction of the ISMS, and is likely to trigger additional disposal of PCBs. The component focuses on setting up a PPP where the coordination cost will be included in the final disposal costs, and thereby paving the road for a sustainable system once the project activities are completed.

37. Finally, the GEF interventions will support the improvement of disposal processes of PCBs in Mexico in order to comply with international standards, BAT/BEP. This activity is unlikely to happen without this intervention. In this sense, the GEF intervention will support the country to validate the efficiency of destruction of PCBs and removal of dioxins and furans in the national facilities through the activities detailed the the above components.

V. GLOBAL ENVIRONMENTAL BENEFITS

38. The direct Global Environmental Benefit is the destruction of, at least, 5,000 MT of PCBs (oils and solids contaminated) that would otherwise risk being released into the environment. The improved Quality Assurance and Quality Control of the disposal operations in Mexico would have the added benefit that disposal would be done

according to international standards thereby limiting the risk of emissions of unwanted substances during the disposal process. An added benefit would be that other hazardous waste could potentially be disposed of in the same facilities.

VI. INNOVATIVENESS, SUTAINABILITY AND POTENTIAL FOR SCALING UP

39. The Project presents the innovative approach of a public-private partnership, between government and industries, in several components, to scale up and leverage a sustainable source of financing for the future destruction of remaining PCBs stocks. This is considered the best approach to advance and assure sustainability of the activities in the long term, with respect of assuring a manner to implement the environmentally sound management of, otherwise, expensive waste destruction.

40. The project, by itself, is designed to be self sustainable, and in this manner, will seek to develop a funding mechanism to support the disposal of remaining inventories of PCBs. Destruction services will be promoted and supplied by an entity whose objective is to be a business unit to destroy PCBs. The project will look for guidance from national stakeholders on thematic areas under their expertise, and will promote the creation of a centralized information system to be further used by companies in decision making and servicing processes.

41. The project will look into complementary disposal activities that can add up the current local PCBs destruction capacity by analysing such options as licensing new facilities, decontamination of transformers, export of PCBs and co-processing in cement kilns.

42. It is foreseen that the framework to be established will be used to scale up and replicate the results of activities to all other PCBs owners and maintainers, in order to achieve the sustainability of actions. This scaling up will be enlarged by the operationalization of the PPP. In this sense, countries that face a similar situation as to Mexico can clearly learn by the experience that will be gained in the implementation of this project.

2. *Stakeholders*. Will project design include the participation of relevant stakeholders from [civil society](#) and [indigenous people](#)? (yes /no) If yes, identify key stakeholders and briefly describe how they will be engaged in project design/preparation.

43. The project has, in principle, no direct implications for indigenous people. It has some potential to affect socioeconomic interests through possible restrictions of the use of specific POPs. The nature of these potential implications will be clarified during the project's PPG phase, and if necessary will be subject to further socioeconomic studies during the project's implementation phase, when corresponding mitigation strategies will be developed in consultation with the stakeholders concerned.

44. The stakeholders to be involved in the project design and preparation are:

- *Secretariat of Environment and Natural Resources (SEMARNAT)*: Is the executing partner of the project and will be responsible to indicate the Director of the Project, as well to centralize the information and data being generated by it. SEMARNAT is the Agency responsible to enforce the Standard 133 and will chair the Steering Committee of PPP;
- *Secretariat of Energy (SENER)*: entity of the national government responsible to regulate and monitor the destruction CFE. SENER will also support development of financing mechanism;
- *Comisión Federal de Electricidad (CFE)*: is the sole energy utility in Mexico and the largest owner of transformers in the country. It has assumed, under the SENER, the commitment to undertake bottom-up inventories, to identify PCBs-contained equipment and to properly manage and dispose such equipments;
- *Transformers Maintainers, Managers and Destruction Enterprises*: entities responsible to handle contaminated equipment, to identify and undertake physical actions of management and disposal. Those companies will be key actors to avoid cross-contaminations and proper destruction of PCBs. Those entities will be part of the PPP.

- *Industrial associations*: Will be part of the consultation committee and support the national strategy elaboration, as well will serve as external verifier of the enforcement of the Standard 133. Those entities are expected to support the establishment of the PPP;
- *Sensitive sites operators & associations*: must comply with the Standard 133. Those entities are expected to support the establishment of the PPP;
- *Civil Society Organizaions (CSOs)*: will serve as external verifier of the enforcement of the Standard 133. Those entities are expected to support the establishment of the PPP;

3. *Gender Considerations*. Are [gender considerations](#) taken into account? (yes /no). If yes, briefly describe how gender considerations will be mainstreamed into project preparation, taken into account the differences, needs, roles and priorities of men and women.

45. In daily life, men, women, and children are exposed to different kinds of chemicals in varying concentrations. Biological factors — notably size and physiological differences between women and men and between adults and children — influence susceptibility to health damage from exposure to toxic chemicals.

46. Social factors, primarily gender-determined occupational roles, also have an impact on the level and frequency of exposure to toxic chemicals, the kinds of chemicals encountered, and the resulting impacts on human health. Scaling-up of the improved management of PCBs wastes, resulting in less potential cross-contamination and releases, and improved incineration, will have differentiated benefits for women.

47. During the project’s PPG phase, a detailed a analysis of exposure and impacts as related to gender will be undertaken, based upon which project activities will be tailored in such a manner, that the groups at most risk, whether these turn out to be children, women or men, will be targeted in such a way to reduce their exposure to POPs

4 *Risks*. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

Risks	Rating	Mitigation measures
Owners of hazardous waste disposal facilities will not participate in the project.	Medium	The project aims at improving the processes and operation of the facilities which could potentially lead to savings. In the BAU scenario, limited governmental inspection of the operation takes places. Enforcement capacity would be increased as a result of the project.
Owners of PCBs materials do not have resources for destruction	Medium	This risk will be adressed by improved enforcement, by outreach strategy and by financing mechanism establishment.
Lack of coordination / interest among stakeholders in the ISMS.	Low	A well functioning ISMS will potentially generate an increased demand for the services that the companies provide. SEMARNAT will play an active role in the activation of the ISMS.
Difficulties in setting up a financial scheme for waste that contain no value.	Medium to High	The government will have to play an strong role in enforcing the law about the disposal of PCBs by a certain date. The financial scheme will be complementary to the enforcement of the law, and financial institutions should have an interest in developing it.
Delays in CFE procurement processes for the disposal of large quantities of PCBs.	Low	This was an issue in the first phase of the PCB project. However, CFE is now much better equipped to develop TORs and do the actual procurement process.

5. *Coordination.* Outline the coordination with other relevant GEF-financed and other initiatives.

48. The project will be implemented in coordination with similar PCB Management and Disposal Projects that are currently being implemented in Latin America (Argentina, Brazil, Costa Rica, Colombia, Ecuador, Uruguay, Honduras, etc.). For that, a mechanism to exchange experiences and best practices among the project will be set up, and the PCB project in Mexico will be an important part of this exchange.

49. The project will also build directly on the experience that was obtained from other GEF-related projects implemented by Mexico, such as:

- GEF/World Bank Project #2187 - Enabling Activities to Help Mexico Comply with the Stockholm Convention on Persistent Organic Pollutants (POPs);
- GEF/UNIDO Project #5127 - Enabling Activities to Review and Update the National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs)
- GEF/UNDP Project #3270 - Environmentally Sound Management and Destruction of PCBs
- GEF/UNDP Project #5179 - Sound Management of POPs Containing Waste

6. *Consistency with National Priorities.* Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes /no). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.

50. The project is consistent with the objectives and action plans identified by National Implementation Plan (NIP) on POPs in Mexico (GEF/World Bank Project #2187 - Enabling Activities to Help Mexico Comply with the Stockholm Convention on Persistent Organic Pollutants (POPs);

51. Mexico has signed and ratified the Stockholm Convention on Persistent Organic Pollutants, and is obliged to phase out of use all PCBs by 2025 and dispose of all known stocks by 2028. The project will put Mexico on the right track to achieving that target.

7. *Knowledge Management.* Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

52. The project will take advantage of the experience gained with the implementation of the GEF/UNDP project 3270 "Environmentally Sound Management and Destruction of PCBs", and will expand the current information systems being generated by the NIP updated project (GEF/UNIDO) and the above mentioned GEF/UNDP project by further documenting the lessons learnt in terms of:

(a) The project implementation team, in the beginning of the project, will convene an Action Plan to register, sort and document the activities and lessons learnt by component of the project;

(b) The implementation team will work in close collaboration with the technical staff of the stakeholders (SEMARNAT, CFE, Private Sector, etc.) to support the sistematization of information and lessons learnt, through consultation meetings, and translate the information into a user-friendly format;

(c) The Environmental agency SEMARNAT acts as a responsible agency for chemicals issues, and was enforced in order to centralize the receipt, organization and dissemination of information and data to be generated under this project proposal;

(d) The SEMARNAT is also responsible coordinate the overall activities of all GEF-funded projects. It is the focal point to coordinate the chemical issues among the stakeholders. The projec team will take advantage of such roles to exchange information and lessons learnt with the GEF/UNIDO NIP update project, in this manner, will consolidate lessons learned that can be shared and applied in the field by stakeholders.

(e) SEMARNAT will use its influence and capillarity with the stakeholders, and the project team will be able to share the lessons learnt among them. For this, the project shall use all sorts of tools to the reach them and to facilitate the dissemination of such lessons, such as materials and information systems, including: Reports, Manuals, Guidelines, Website, Press, Social Media and etc. (minding that each piece of communication must be tailored to the target public).


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

A. RECORD OF ENDORSEMENT⁹ OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):
 (Please attach the [Operational Focal Point endorsement letter](#)(s) with this template. For SGP, use this [SGP OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Carlos Raúl Delgado Aranda	Director General Adjunto (Associate General Director)	SECRETARIA DE HACIENDA Y CRÉDITO PÚBLICO MINISTRY OF FINANCE AND PUBLI CREDIT	05/27/2015

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies¹⁰ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Ms. Adriana Dinu Executive Coordinator, GEF/UNDP.		07/29/2015	Mr. Jacques Van Engel Director, MPU/Chemicals	212-906-5782	jacques.van.engel@undp.org

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)

For newly accredited GEF Project Agencies, please download and fill up the required [GEF Project Agency Certification of Ceiling Information Template](#) to be attached as an annex to the PIF.

⁹ For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

¹⁰ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF