



# GEF-6 REQUEST FOR ONE-STEP MEDIUM-SIZED PROJECT APPROVAL

TYPE OF TRUST FUND: GEF Trust Fund

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## PART I: PROJECT IDENTIFICATION

Project Title:	Making polychlorinated biphenyls management and elimination sustainable in Morocco		
Country(ies):	Morocco	GEF Project ID: <sup>1</sup>	
GEF Agency(ies):	UNIDO	GEF Agency Project ID:	170117
Other Executing Partner(s):	Secretariat of State for Sustainable Development	Submission Date:	09/06/2017
GEF Focal Area(s):	Chemicals and Wastes	Project Duration (Months)	36
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>		
Name of Parent Program:	[if applicable]	Agency Fee (\$)	173,516

### A. FOCAL AREA STRATEGY FRAMEWORK AND PROGRAM<sup>2</sup>:

Focal Area Objectives/programs	Focal Area Outcomes	Trust Fund	(in \$)	
			GEF Project Financing	Co-financing
CW-1 Program 1	Outcome 1.1: Countries have appropriate decision-making tools and economic approaches to promote the removal of barriers preventing the sound management of harmful chemicals and waste	GEFTF	211,872	1,270,729
	Indicator 1.1.2: Prioritized list of actions for reducing/eliminating chemicals and waste (PCB wastes)			
CW-2 Program 3	Outcome 3.1: Quantifiable and verifiable tons of POPs eliminated or reduced	GEFTF	1,614,612	4,429,771
	Indicator 3.1: Amount and type of POPs eliminated or reduced (PCBs)			
<b>Total project costs</b>			<b>1,826,484</b>	<b>5,700,500</b>

### B. PROJECT FRAMEWORK

**Project Objective:** To protect the environment through safe elimination of PCB-containing oil, equipment and wastes combined to strengthening the regulatory framework applicable to PCBs

Project Components/Programs	Financing Type <sup>3</sup>	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Confirmed Co-financing
Component 1. Strengthening the regulatory framework for chemicals management focusing on PCBs and compliance incentive measures	TA	1. Conducive environment for safe management of chemicals, with focus on PCBs, supported by incentive mechanisms	1-1. Law on management of chemicals including equipment in-use is finalized;	GEFTF	100,000	150,000
			1-2. Regulations for PCBs secure management and elimination are improved;			
			1-3. New incentive mechanisms are developed to facilitate compliance with the legislation			

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

<sup>2</sup> When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#) and [CBIT programming directions](#).

<sup>3</sup> Financing type can be either investment or technical assistance.

Component 2. Promoting the adoption of PCBs safe management practices	TA	2.Environmentally sound management of PCBs-contaminated equipment, waste and oil	2-1. 20,000 PCB-contaminated transformers in participant companies are screened /analyzed;	GEFTF	60,000	1,050,000
			2-2. Environmentally sound management practices are documented and disseminated among transformers’ owners as technical guidance;			
			2-3. 39 companies participate to trainings on BAT and BEP in ESM of PCBs			
Component 3. PCBs elimination and promotion of Africa's first PCB decontamination platform	Inv	3. PCBs, in either equipment in-use or decommissioned, are safely eliminated through the decontamination platform	3-1. 613 tons of PCB-contaminated equipment and 2.4 tons of pure PCB oils are sent abroad for safe elimination;	GEFTF	1,466,484	4,235,500
			3-2. 1,740 transformers with 541 tons of dielectric oils are locally decontaminated;			
			3-3. Public outreach Strategy to promote Morocco's experiences of PCB platform			
Component 4. Monitoring and evaluation	TA	4. Effective and efficient implementation of the project based on GEF and UNIDO requirements	4-1. Project results regularly monitored and reported (PIRs)	GEFTF	50,000	90,000
			4-2. Independent Terminal Evaluation conducted			
Subtotal					1,676,484	5,525,500
Project Management Cost (PMC)				GEFTF	150,000	175,000
Total GEF Project Financing					1,826,484	5,700,500

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: ( )

**C. SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE**

Please include confirmed co-financing letters for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Beneficiaries	Companies benefiting from the project	In-kind	5,285,500
Recipient Government	Ministry in charge of environment	In-kind	165,000
GEF Agency	UNIDO	Grants	50,000
GEF Agency	UNIDO	In-kind	200,000
<b>Total Co-financing</b>			<b>5,700,500</b>

**D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee <sup>a)</sup> (b)	Total (c)=a+b
UNIDO	GEF TF	Morocco	Chemicals and Wastes	(select as applicable)	1,826,484	173,516	2,000,000
<b>Total Grant Resources</b>					<b>1,826,484</b>	<b>173,516</b>	<b>2,000,000</b>

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

**E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS<sup>4</sup>**

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>hectares</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO <sub>2e</sub> mitigated (include both direct and indirect)	<i>metric tons</i>
5. 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)	<i>2.4 metric tons of pure PCBs; 613 tons of PCB-contaminated equipment in-use &amp; waste decontaminated</i>
	Reduction of 1000 tons of Mercury	<i>metric tons</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries:</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries:</i>

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

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

Not applicable.

<sup>4</sup> 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, SCCF and/or CBIT.

**G. PROJECT PREPARATION GRANT (PPG)<sup>5</sup>**

Is Project Preparation Grant requested? Yes ☐ No ☒ If no, skip item G.

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

GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee <sup>6</sup> (b)	Total c = a + b
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
<b>Total PPG Amount</b>					<b>0</b>	<b>0</b>	<b>0</b>

**PART II: PROJECT JUSTIFICATION*****1. Project Description***

- a) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed

**Global environmental and/or adaptation problems related to PCBs**

1. Persistent organic pollutants (POPs) are toxic chemicals that adversely affect human health and the environment. Because they can be transported long distances by wind and water, most POPs released in one country can - and do - affect people and wildlife far from release sites. POPs persist long periods of time in the environment and can bio-accumulate, passing from one species to the next through the food chain. Therefore, POPs management is a global concern.

2. The Stockholm Convention on persistent organic pollutants (POPs) identifies the polychlorinated biphenyls (PCBs) as pollutants that “possess toxic properties, resist degradation, accumulate and are transported through air, water and migratory species, across international boundaries and deposited far from their places, where they accumulate in terrestrial and aquatic ecosystems”. Due to their widespread use, to their very often inappropriate disposal, and to their long persistence in the environment, PCBs are ubiquitous environmental contaminants, with a bio-accumulation behavior caused by their lipophilicity. PCBs tend to concentrate in sediments, especially in the marine environment, as the above water layer protects them against the ultra-violet component of solar radiation that would otherwise cause photo-degradation.

3. The impact of PCBs on human health and the environment is well documented. Exposure to PCBs, due to contamination of food and biomagnification effects, raises public health concerns, in particular for women and through them, future generations. A 2013 review of the International Agency on the Research on Cancer (IARC) provides scientific evidence for classification of PCBs as class 1 carcinogenic compound.

4. Although PCBs are mostly present in closed systems, like transformers and condensers, they can contaminate the water and soil ecosystems during recycling processes at the end of the equipment operational lifetime. The PCBs inside these equipment parts, because of improper disposal, are then dumped into open landfills. PCB contamination of soils is a serious concern for Morocco. PCB pollutants have been detected in several sites that used to host in the past PCB-contaminated electricity equipment, in abandoned storage sites, and in scrap metal recycling sites. At least twelve (12) extensive

<sup>5</sup> PPG of up to \$50,000 is reimbursable to the country upon approval of the MSP.

<sup>6</sup> PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

sites in Morocco reported high levels of PCBs pollution. This pollution constitutes a real danger for underground waters and other natural ecosystems.

### **Root causes of and barriers to safe management of PCBs**

5. Morocco ratified the Stockholm Convention on POPs in 2004 and committed in this regard to implement all necessary measures to ensure compliance with the provisions of the Convention, including disposal of all PCBs in equipment by 2025, and in their wastes by 2028. Morocco submitted its National Implementation Plan (NIP) to the Convention on May 2006. The Morocco NIP of the Stockholm Convention identifies the sound management of PCBs as a top priority requiring immediate attention and action. Still, there remain a number of barriers that need to be addressed in order to ensure PCBs are managed and disposed of in an environmentally sound manner. These barriers include:

6. Incomplete legislation and insufficient enforcement of the existent legislation on environmentally sound management of PCB-contaminated equipment. The legal framework on PCB-contaminated equipment depends on the equipment status. Regulations of the PCB-contaminated equipment still in-use exclusively focus on awareness raising and some incentives. Regulations of PCB wastes is different, as this category falls under the provisions of the Law 28-00 adopted in 2009, and are classified as hazardous waste by the Decree No. 2-07-253 on Classification of waste and establishment of a list of hazardous waste. In general, the existent legislation provides no obligation for any owner of contaminated equipment to go through the requirements of the safe management of PCBs, meaning to analyze mineral oils in order to determine their PCB content, to label electricity equipment based on results of the content analysis, to inform on risks related to the presence of PCBs in their premises, to report the results to the public administration, and to eliminate or decontaminate the equipment according to technical standards that are yet to be documented at national level.

7. Absence of BAT and BEP on sound management of PCBs that should provide technical guidance to owners of PCB-contaminated equipment to proceed with a safe decontamination of this equipment. One reason of this absence is the reluctance of industries and electricity distribution companies to report on the PCB-contaminated equipment present in their premises. A standardized process similar to the Pollutant Release and Transfer Register (PRTR) does not currently exist in Morocco. Without such a process, the public authorities do not have enough data and sufficient knowledge to establish a strategy for tailored intervention targeting owners of PCB-contaminated equipment.

8. Absence of tailored measures that target the owners of small-scale private companies which own PCB-contaminated equipment prevented the involvement of these owners on previous initiatives that have been undertaken in Morocco. The equipment under this category of owners represents at least 40% of the part of contaminated transformers. Another segment of the chain directly linked to small-scale owners is made of the metal scrap dealers in the informal sector. The commitment to any action of these two segments will require an identification of equipment incriminated and an assessment of business-as-usual recycling operations frequency and benefits. A detailed inventory of small scale PCB-contaminated equipment owners is currently ongoing.

9. Inefficient use of the Morocco's PCBs decontamination platform which has been established within the UNIDO-GEF 4 project. This platform's main function is to provide services related to decontamination and disposal of PCB-contaminated equipment, from collection to packaging, followed by an expedition abroad, where contaminated equipment are safely recycled and/or eliminated. However, this platform remains inaccessible to owners of small-scale PCB-contaminated equipment, the reasons being institutional, technical, and financial as described in following paragraphs.

10. Owners of medium/low voltage transformers in Morocco still lack awareness and/or acceptance of risks associated to the presence of PCBs in these transformers. The companies where this awareness

problem is most remarkable are in the small-scale private sector. As a consequence, the owners do not foresee how important it is to decontaminate their equipment, and eventually to eliminate them. Many private companies are not aware of the existence of a national platform that provides the decontamination services. They do not have the required knowledge of best environmental practices (BEP) and best available techniques (BAT) for management of contaminated equipment nor are they aware of risks associated with PCBs cross-contamination.

11. The technical barriers to decontamination of small scale PCB-contaminated equipment in the existent platform can be explained by two main factors:

- The decontamination in the platform requires the disconnection of the transformer and its transport to the platform site in Bouskoura for at least one week, which means without an emergency transformer, the company does not have electricity during that period. Most small scale industries do not have an emergency transformer. Conversely, larger electricity companies generally own several transformers of different voltages which can be used for a short period as replacement of the equipment sent for decontamination.
- There are no transformer rental companies in Morocco that could provide the small-scale private industries with a replacement transformer during the decontamination process.

12. Financial barriers to decontamination of PCB-contaminated equipment in small scale industries in Morocco are also significant. The amount of the contribution of equipment owners to the decontamination operation remains important and includes cost related to the following services:

- Analysis of the equipment in order to determine the PCBs content status;
- Collection of the equipment;
- Transport between the collection site and the decontamination platform;
- Emptying, disassembling, and reassembling the equipment;
- Decontamination of oils and metallic masses;
- Change of seals and insulating cartons;
- Final treatment of decontaminated oil and solid wastes possibly through expedition abroad;
- Refilling the equipment with decontaminated oil or with virgin oil, if the decontaminated oil has lost its dielectric properties;
- Analyzes and measurements carried out throughout the entire process (PCB, water, dielectric strength etc.)

13. Another technical feature, which has an important impact on the decontamination cost, is the age of the transformer; most of the transformers being used in Morocco are very old (30 years +) and the oils they contain are no longer usable. Therefore virgin oil refilling is required, which adds expenses of about US\$ 2 per liter to the decontamination cost.

14. Concerning the elimination of the PCB-contaminated transformers which became wastes after decommissioning, barriers are of two kinds depending on the nature of the company. The barrier is administrative for the electricity distribution companies, since the replacement process needs to be planned two or three years in advance. For other private industries, the barrier is financial, as they need to buy a new transformer to replace the one decommissioned.

b) The baseline scenario or any associated baseline projects

**Baseline scenario**

15. PCBs are widely present in Morocco as dielectric oil component inside transformers manufactured during the 1960s and 1970s of the last century, and as coolant in high quality transformers. As Morocco was not a PCBs producer, the manufacturers used to import pyralène, mainly from France, and from other countries for transformers manufactured locally. The transformers containing PCBs were reported to be reliable, to have a long life span, and to be more secure than those without PCBs. They were considered top quality equipment. Despite the fact that they were much more expensive than transformers without PCB, about 30 percent of the transformers sold during those decades contained PCBs. Similarly, a large part of imported transformers contained PCBs such as pyralène or arochlor depending on their origin.

16. In the 1980s, the production of PCBs stopped in many countries and PCB-containing oil was replaced by mineral oil. However, the use of transformers with pure PCBs continued and contaminated equipment are only disposed of when they reach end of service life. Inventories realized after ratification of the Stockholm convention show several hundreds of PCB-contaminated equipment were still in-use in Morocco, even if their number was declining despite the absence of a legislation for safe disposal of the equipment. In fact, most of the PCB-contaminated equipment, which reach end of life service used to be sold to scrap dealers, and until then there was no information on how the scrap dealers manage to eliminate the PCB-containing oil and other PCBs waste.

17. Another issue of concern related to management of PCB-contaminated equipment in Morocco is the treatment of the oil in the transformers, due to the poor maintenance practices of technicians having little knowledge of PCBs management requirements, particularly those in the small-scale private sector unable to afford services of a specialized expert.

18. In 2009, a random sample of 100 transformers containing mineral oil (old and new), in-use at that time, was analyzed and results showed 31 percent of the transformers were contaminated with PCBs (>50 ppm).

19. In 2013, 6,000 old transformers (20 years+), some being in-use and others decommissioned, were analyzed in order to evaluate the extent of PCB contamination in Morocco. According to the results, after exclusion of transformers contaminated with pure PCBs, 41 percent of the transformers were contaminated with PCBs (>50 ppm), among which 93 percent did have a relatively low level of contamination (<5000 ppm) and 7 percent shown a high level of contamination (>5000 ppm).

20. The continuous use of PCB-contaminated transformers, the issue of cross contamination in transformers with mineral oil, the unsafe disposal of the contaminated equipment when decommissioned, and soil pollution are the main causes of human exposure to PCBs in Morocco and are main contributors to global pollution.

21. The presence of a decontamination platform is an opportunity for the country to meet its targets in terms of PCBs elimination. The privately-owned platform has the capacity to collect the PCB wastes and to pack them properly before expedition abroad for safe disposal. It has also the capacity to eliminate in-situ small concentration of PCBs in mineral oil through a dechlorination process. Since 2015, the platform is operational with all the necessary licenses and has a capacity to decontaminate about 100 tons of contaminated transformers per month (1,100 per year). The platform staff has been trained on standard security requirements and its functionality is already known of large-scale electricity companies.

22. The platform can significantly contribute to the PCB elimination targets of Morocco. Given its processing capacity, it is able to reduce or even eliminate the cross contamination and constitute a

strategic site for export of heavily PCB-contaminated transformers, oil and other wastes generated by the decontamination process.

23. However, many of the PCB-contaminated equipment, even after decommissioning, remain in the country, including the most contaminated one, because the national platform is not operating efficiently and highly PCB-contaminated equipment are not adequately dismantled for export. Main risks related to the dismantling process are the spreading of the cross contamination and the pollution of soil and water ecosystems. As of now, there is no alternative solution to the dismantling process. Incineration is not permitted for oil containing more than 1 percent chlorine (Decree on incineration and co-incineration of hazardous wastes) and there is no landfill dedicated to dumping of hazardous wastes.

### **Institutional framework related to PCB-management**

24. The Moroccan government and the majority of large-companies owning PCB-contaminated equipment are strongly committed to addressing the issue of PCB-contamination of transformers both in-use and after decommissioning.

25. Morocco ratified the Stockholm Convention on POPs in 2004 and accordingly developed a National Implementation Plan (NIP), the priority interventions of which are reflected in some parts of the existent legislation on wastes management. PCBs management have different requirements in the Morocco legislation depending on whether the equipment considered is in-use or considered as waste following decommissioning.

26. Concerning PCB-contaminated equipment still in-use, the government made the decision to proceed with their regulation rather than prohibition, and to have an approach centered on raising awareness of the owners in order to incentivize them having environmentally sound management practices of this equipment, including during their disposal at the end of their service life.

27. Conversely, PCB wastes are classified as hazardous waste by the Decree No. 2-07-253 on Classification of waste and establishment of a list of hazardous waste. Their management falls under the scope of the Law 28-00 adopted in 2009. The provisions on management of hazardous waste are in the Decree No. 2-14-85 that specifies requirements on organizational management of hazardous waste, the procedures for granting authorization of collection and transport of hazardous waste, and the authorization of specialized facilities to provide services of treatment, valuation, or disposal of hazardous waste

28. Still, the absence of coercive measures to complement regulations on environmentally sound management of equipment in-use contaminated with PCBs, and the insufficient enforcement of the Law on waste management and disposal of PCB-contaminated transformers after decontamination have led to the lack of willingness of equipment owners to initiate the decontamination process in the platform. This has had an impact on the platform's activity and consequently on its profitability.

### **Baseline projects**

29. Following ratification of the Stockholm Convention on POPs requiring from the country to safely manage and dispose PCBs, Morocco undertook some initiatives within the Program for Safe PCB Management in Morocco.

30. With the Program pillar I, more than 1,080 metric tons of pure PCB-contaminated electricity equipment and wastes containing PCBs were exported to France for elimination at TREDI facility.

31. In the framework of the Program pillar II, the cleaning and treatment of contaminated oil started in February 2016 and continued until March 2017. In total, 450 transformers containing approximately 110



tons of contaminated oils were treated.

32. During preparation of this project, an inventory of the number of PCB-contaminated equipment and oil part in the total weight, without oil analysis, was conducted in June 2017. Results of the observation are displayed in Tables 1-2.

**Table 1: Decommissioned pure PCB and highly contaminated equipment**

Decommissioned equipment	Number	Total weight (kg)	Oil weight (kg)
Pure PCB transformers & condensers	12	7,140	2,405
Contaminated transformers	176	443,653	91,511
<b>Total</b>	<b>188</b>	<b>450 823</b>	<b>93 916</b>

**Table 2: In-use contaminated equipment**

In use equipment	Number	Total weight in kg	Oil weight in kg
Pure PCB-containing transformers & condensers	None found	0	0
Contaminated transformers (less than 5,000 ppm)	1,740	2,480,881	541,232
Highly contaminated equipment (more than 5,000 ppm)	89	165,757	35,933

33. The inventory results show:

First, 188 transformers already decommissioned are highly contaminated (more than 5,000 ppm of PCBs content), including 12 transformers containing pure PCBs. The total weight of the contaminated equipment already decommissioned is about 450.8 tons.

Second, another 89 still-in-use transformers were found to be highly contaminated (more than 5,000 ppm of PCBs content), and there is requirement to already consider safe disposal at the end of their service life. The total weight of this equipment is approximately 165.8 tons.

Third, the current PCBs contamination of equipment in electricity distribution companies and other industries (e.g. OCP, ONEP, Holcim, Lafarge) is estimated to be 1,740 PCB-contaminated transformers in-use having an estimated weight of 2,480 tons and containing 541 tons of oil.

34. The real stock of the contaminated equipment in-use across the country is likely to be much larger. More than 100,000 transformers are in-use in Morocco and analyses performed on a sample of 600 transformers showed that PCB contamination affects about 30-40 percent of the transformers present in the country.

35. In view of the institutional, technical and financial barriers to an environmentally sound management of PCBs, owners of PCB-contaminated equipment, particularly those in the small-scale private industry will most likely continue business-as-usual, meaning the transformers after decommissioning will end up in the hands of scrap dealers. Without a solution targeting the overall chain of required services for safe decontamination of equipment, the contamination should continue to spread affecting water and soil ecosystems. This situation poses an important threat to human health.

36. Any initiative that intends to have a meaningful impact needs to overcome the following challenges: (i) lack of reliable inventory data on PCB-contaminated equipment in the small-scale privately-owned industries, (ii) lack of incentives for the private sector to comply with regulations, (iii) lack of knowledge resources and technical capacities for the environmental-friendly disposal of PCB-9

containing equipment, oil and waste, and (iv) lack of awareness of risks related to the presence of PCB-contaminated equipment on human health and the ecosystems in small-scale companies of the private sector. Thus, a triggering mechanism combining a conducive legal framework, financial and technical support is needed to materialize the country ambitions in terms of environmentally sound management of PCBs. This will also require the dissemination of knowledge on best environmental practices and best available techniques that specifically targets the small-scale industry, which is still lagging behind.

37. The main objective of the proposed project is an integrated approach to the safe elimination of PCB-contaminated equipment, oil and wastes through strengthening of the legislation and tailored interventions targeting the small-scale industries and electricity distribution companies as a contribution to protecting human health and the soil and water ecosystems. Therefore, GEF funding will contribute to attainment of this objective building from the existent baseline.

c) The proposed alternative scenario: GEF focal area<sup>7</sup> strategies, description of expected outcomes and components of the project

### **GEF focal area strategy**

38. This project is in line with the GEF Chemical and Waste Focal Area Strategy as described in the GEF-6 Programming Directions, as well as with UNIDO's mandate to promote inclusive and sustainable industrial development (ISID).

39. The GEF-6 Chemical and Waste Strategy's long term goal is to prevent the exposure of humans and the ecosystems to harmful chemicals and waste of global importance, including POPs controlled under the Stockholm Convention, through a significant reduction in the production, use, consumption and emissions/releases of those chemicals and wastes. The Strategy seeks to combine environmentally safe management of technologies and systems with financial and organizational mechanisms, policies, and practices that support countries move towards innovative and rapid transformational change. The GEF-6 Strategy aims to achieve two strategic objectives.

- CW 1: Develop the enabling conditions, tools and environment for the sound management of harmful chemicals and wastes that in combination will build and sustain capacity, opportunity, and means to meet the goals of eliminating harmful chemicals and waste. This objective will develop policy, legislative, financial, economic, technical and technological tools that will remove barriers to scaling up interventions, including access to finance.
- CW 2: Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies/substances. This objective will help countries reduce and eliminate harmful chemicals and waste of POPs and thereby reducing the exposure of humans and the environment to harmful substances.

40. The components of the proposed project contribute to meeting these objectives of the Strategy by offering a combination of strengthened legal frameworks so as to create a conducive environment for safe disposal of PCB-contaminated equipment and oil, incentive measures for overcoming technical and financial barriers, and public outreach initiatives for sharing knowledge and experiences. The first and second components of the project contribute to meeting the objective CW1 under Program 1, which consists of developing and demonstrating new tools and regulations along with economic approaches for managing harmful chemicals and waste in a sound manner, and for raising awareness of equipment owners, focusing on small-scale private industries and electricity distribution companies. The third

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<sup>7</sup> 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.

component of the project contributes to meeting the objective CW2 under Program 3, which is the sound elimination of PCBs.

### **Rationale of the proposed project**

41. The business-as-usual approach described in the baseline of the project will remain unless action is taken to simultaneously tackle the institutional, technical and financial barriers to equipment decontamination. There is draft legislation on management of PCB-contaminated equipment that includes provisions targeting the equipment in-use. Institutional capacities have been strengthened through the national PCB decontamination platform and through the cooperation with TREDI on PCBs elimination. The rationale of the proposed project is a need for an integrated approach to address a combination of factors which the most important are:

- Non-finalization of the legislation text on chemicals that covers the management of PCB-contaminated equipment in-use, being a necessary preamble to adoption;
- Absence of coercive measures for enforcement of the current regulations in case of non-compliance of PCB-contaminated equipment owners;
- Lack of technical guidance on safe management of PCBs;
- Absence in the national effort being undertaken of large segments of the management chain made of small-scale private industries and metal scrap dealers in the informal sector. Small-scale owners of equipment contaminated with PCBs have not been taken into account in previous official inventories nor decontamination initiatives.

42. Morocco needs a catalyst to integrate small-scale owners of PCB-contaminated equipment in market operations towards compliance with the targets of the Stockholm Convention in terms of PCBs elimination by 2028.

43. Thus, this project could be this triggering mechanism through the development and proposal for adoption of the relevant legislation and the availability of environmentally sound management plans so as to provide owners of incriminated equipment with guidance on safe management of PCBs equipment while they are in-use and their safe disposal after decommissioning. Improved compliance with relevant legislation on hazardous waste management applicable to PCBs would enhance the safe disposal of these hazardous chemicals and would trigger a more inclusive environmentally sound management model. The efficient use of the Morocco's PCB decontamination platform, which is the first of its kind in Africa, will gain improvement through knowledge sharing and outreach measures targeting national and international stakeholders. The project features four (4) components.

### **Component 1: Strengthening the regulatory framework for chemicals management focusing on PCBs and compliance incentive measures (GEF Grant: US\$100,000; co-financing: US\$150,000)**

44. Morocco drafted legislation on safe management of chemicals-contaminated equipment. However, the text is yet to be finalized and provisions related to guidance in terms of best techniques and practices are needed to ensure enforcement of the Law once adopted. Based on the existent institutional capacity and achievements from the previous UNDP-GEF and UNIDO-GEF initiatives, this project will support the establishment of an inclusive legal framework, targeting all chemicals including the PCBs in equipment being in-use, the missing segment of the existent legislation. The improvement of existent regulations and the enforcement of the law provisions on safe management of all PCBs combined with financial incentives will ensure business compliance to Morocco ambitions in terms of PCBs elimination as per requirements of the Stockholm Convention and subsequent texts on POPs. The main outcome

expected from the project component 1 is a conducive environment for management of all hazardous chemicals, including POPs, and long-term replicability of safe management practices.

45. The execution partner of this component is the Ministry in Charge of Environment. The Ministry will be closely working with owners of PCB-contaminated equipment including the industries and electricity distribution companies. The new legal framework which this project will contribute to establish will also include an obligation to label the contaminated equipment based on PCB analysis results. Such labeling will provide a frame for categorization of equipment that needs decontamination or elimination in order to properly plan ahead interventions and requirements for temporary replacement of the equipment leaving the companies.

*Output 1-1. Law on management of chemicals including equipment in-use is finalized*

46. The PCB Commission, which is the official group in charge of POPs related issues in Morocco, drafted a bill that should provide the framework for safe management of all hazardous chemicals including POPs in the equipment being in-use. The existent legal framework applicable to PCBs does not include provisions for contaminated equipment in-use, which legal treatment is more complex than that of waste because it raises property issues. The draft bill is currently under discussion with the parliament. The activities to achieve this output include an active support to the parliamentary debate process through:

- Provision of technical inputs to clarify the issues at stake;
- Mobilization of stakeholders for an inclusive participation to the debate and contribution to the bill text;
- Compilation and finalization of the different contributions in order to draft a consensual text that is ready for adoption.

47. The final text to be adopted should be compliant with existent regulations and incentive measures in order to be a coherent legal framework that provides a conducive environment for management of all contaminated equipment.

*Output 1-2. Regulations for PCBs secure management and elimination are improved*

48. The update of existent regulations and the drafting of new ones will support application of the upcoming legislation on chemicals in the area of POPs, and particularly PCBs. The new regulations should support enforcement of the National implementation plan for PCB elimination, in line with part II of Annex A to the Stockholm Convention. The activities for achieving this output will start with a consultative process with stakeholders and members of the "Police de l'Environnement". Following this national consultation, international expertise will be acquired in order to ensure the regulation is compliant with international legislation on POPs, is adapted to the country needs, is owned by national stakeholders and is therefore sustainable. Activities under this component will also support initiatives intended to strengthening the administrative capacities of PCB-contaminated owners and environmental inspectors on reporting and monitoring of actions in compliance with the legislation, so as to ensure smooth implementation of this legislation.

*Output 1-3. New incentive mechanisms are developed to facilitate compliance with the legislation*

49. There is a need for innovative approaches focusing on the development of incentive mechanisms that support the implementation of a Law and subsequent regulations on PCBs. These mechanisms should primarily target the small-scale private sector that owns PCB-contaminated equipment. One reason for these institutional mechanisms is previous interventions in the area, even if well conducted, was not sufficient to involve owners of all PCB-contaminated equipment. The mechanism to be proposed should be in the format of a market model that overcomes existent financial challenges related to<sub>12</sub>

decontamination of equipment identified as containing PCBs. The activities for achieving this output will start by a market analysis of the current situation with all stakeholders consulted individually and convened together during technical workshops. Following the market analysis phase, proposals will be drafted and final mechanisms will be developed based on results of discussions. The model (e.g. tax incentives, financial support etc.) will be mainstreamed in the legislation under development so as to ensure PCBs safe management practices and elimination requirements remain sustainable beyond the project implementation period.

**Component 2. Promoting the adoption of PCBs safe management practices** (GEF Grant: US\$60,000; co-financing: US\$1,050,000)

50. Guidance addressing technical issues related to an environmentally sound management of PCBs are available to large-scale owners of PCB-contaminated equipment such as electricity distribution companies and cement industries. However, the content of these documents is not fully applicable to smaller companies which need other forms of technical measures and additional administrative guidance for safe management of PCBs in equipment they use. These companies also need training on application of best available techniques and best environmental practices on environmentally sound management of PCB-contaminated equipment while in use and after decommissioning. The execution partner of this component is the national PCB Commission, which will work in close collaboration with the project national coordination in committing the target companies to the project action. The results expected from the execution of the project component 2 are safe management practices and techniques available to small-scale owners of PCB-contaminated equipment in the private sector.

*Output 2-1. 20,000 PCB-contaminated transformers in participant companies are screened /analyzed*

51. Equipment in small-scale companies was not included in previous PCB inventories conducted in Morocco. The activities for achievement of this output will start with a mapping of all companies in this category owning transformers contaminated with PCBs. Following the mapping exercise, the project will collaborate with owners of at least 20,000 contaminated transformers on finding methods that would make available those transformers for screening of the mineral oil. This screening consists on evaluating concentrations of PCBs in PCB-contaminated equipment and dielectric oil. The analysis reports will include information about the exact location of the equipment and its condition, will evaluate the risks associated with the presence of these contaminated equipment in the company, if harmful risks were observed, and will potentially propose immediate measures of mitigation. This inventory will also provide requirements in terms of management of transformers about to reach end of life service with recommendations for national treatment in the platform and/or expedition abroad for elimination.

*Output 2-2. Environmentally sound management practices are documented and disseminated among transformers' owners as technical guidance*

52. The results of the previous screening will be a database maintained/updated by the Ministry of Energy, Mines and Sustainable Development. Because small-scale owners of PCB-contaminated equipment represent a relatively large number of transformers in-use, which are generally poorly managed, technical guidance is essential for supporting their compliance with the upcoming legislation. The documentation of best available techniques and best practices on environmentally sound management of PCBs aims to provide this category of owners with technical capacities for management of their contaminated equipment based on lessons learned from experiences with larger owners in the country and from experiences in other countries. The project targets thirty-nine (39) companies identified during the June 2017 inventory for initial dissemination of the documents and monitoring of their use. These documents should cover all stages of the PCBs management cycle, including PCB

identification, labeling, periodic maintenance, risks management, and safety measures for equipment in-use, transportation, and safe disposal of PCB-containing oil and wastes. This technical guidance is essential for supporting the national ambitions towards meeting the 2028 target of safe elimination of PCBs in Morocco.

*Output 2-3.39 companies participate to trainings on BAT and BEP in ESM of PCBs*

53. Small-scale private sector companies participating to this project and others which own contaminated equipment will be convened to technical workshops on implementation of best available techniques (BAT) and best environmental practices (BEP) on environmentally sound management of their PCB-contaminated equipment still in-use. The project targets two training sessions having the following content: (i) General introduction to the Basel and Stockholm Conventions; (ii) PCBs contamination in different equipment in-use; (iii) Specific requirement of the Basel and Stockholm Conventions on PCBs management; (iv) technical requirements of periodic maintenance of contaminated equipment; (v) Risks related to improper disposal of contaminated equipment, oil and wastes; (vi) PCBs regulation in Morocco; (vii) the recycling issues through formal (decontamination platform) and informal (scrap metal dealers) methods; (ix) Financial implications of a sound maintenance of PCB-contaminated equipment in-use and safe disposal of equipment decommissioned. The training sessions will target a minimum of thirty-nine (39) participants, which are companies in the small-scale private sector identified during the June 2017 inventory.

**Component 3: PCBs elimination and promotion of Africa's first PCB decontamination platform**  
(GEF Grant: US\$ 1,466,484; co-financing: US\$ 4,235,500)

54. This component aims at decontaminating transformers that have been previously screened with tailored measures that support provision of the services required in the national decontamination platform. The business model of the platform will evolve towards a market system which first operational phase will be supported by this project. The decontamination process of equipment either in-use or decommissioned is a continuous process that requires a sustainable cooperation model between owners of equipment and the platform manager. The market model to design should ensure the owners of contaminated equipment will have capacity to pay decontamination services after the project implementation period. The model should also feature the expedition abroad of transformers which cannot be decontaminated locally.

55. As unique in Africa, the national platform will gain on performance efficiency with communication activities that target neighboring countries with similar needs for decontamination of PCB-containing oil in equipment in-use or wastes. The platform can be an important lever for knowledge sharing and dissemination of lessons learned in a regional context. The execution partners of this component are the Ministry in charge of the Environment, local experts and international experts, whenever required.

*Output 3-1. 613 tons of PCB-contaminated equipment and 2.4 tons of pure PCB oils are sent abroad for safe elimination*

56. The project contribution to the process for disposal of contaminated equipment after decommissioning and elimination of oil wastes through a market model to be designed will leverage private sector contribution to the process and will support a smooth transition of the industry towards compliance with the approved legislation applicable to PCBs. Based on consultations with the government and the private sector, the cost structure of the elimination process is detailed in Table 3.

57. Following the June 2017 inventory and after screening of PCB concentrations, the project will partner with equipment owners in disposal of at least 612.8 metric tons of highly PCB-contaminated equipment as follow:

- 100 percent of the decommissioned equipment (pure PCB-containing oil): 450.8 tons;
- 50 percent of highly contaminated transformers in-use inventoried: about 82 tons;
- Waste generated by the decontamination of oils: 80 tons approximately.

58. The decontamination process of mineral oil – through dechlorination- in the equipment will generate waste made of cleansing and protecting material, individual protection equipment used, porous parts of dismantled transformers, active carbon air filters used, some oil and other laboratory chemicals. The pure PCBs from the process are sent abroad, to TREDI France, for safe elimination.

*Output 3-2. 1,740 transformers with 541 tons of dielectric oils are locally decontaminated*

59. The second output of this component is the decontamination of transformers containing less than 5,000 ppm of PCBs. The inventory realized on June 2017 has shown 39 companies are owners of 1,740 contaminated transformers, which amount to a total weight of 2,480.8 tons. The corresponding weight of dielectric oils to be decontaminated locally is 541.2 tons.

60. The project targets quantity figures in Table 3. The following estimates are made for computation of the costs related to the disposal of highly contaminated equipment (>5000 ppm) and to the decontamination of equipment with PCB concentration of less than 5,000 ppm.

- Cost related to the elimination of the transformer decommissioned including transport from the premises of the owner is US\$ 500 per transformer;
- Elimination of decommissioned transformers and PCB wastes in France is about US\$ 1,000 per ton;
- Decontamination in the national platform of the equipment is about US\$ 500 per transformer;
- Contribution to the decontamination services by the transformer owner is on average US\$ 1,850 per transformer, including transport, new dielectric oil if necessary, electrical analysis etc.;
- Cost related to the temporary replacement of the transformer being decontaminated including procurement, transport, installation and connection to the grid is US\$ 20,000 per transformer.

62. A more elaborate model including contributions of each stakeholder to the process will be developed within the component execution.

**Table 3: Cost structure of equipment decontamination and elimination**

Item	Quantity	Unit cost in US\$		Total cost in US\$	
		GEF	Cofinancing	GEF	cofinancing
PCB waste export	612,8 tons	1,000		606,484	0
Decommissioned equipment elimination	233 units		500	0	116,500
Transformer replacement	45 units		20,000	0	900,000
Decontamination	1,740 units	500	1,850	870,000	3,219,000
<b>Total</b>				1,476,484	4,235,500

*Output 3-3: Public outreach Strategy to promote Morocco's experiences of PCB platform*

63. As already mentioned, the national PCB decontamination platform is the first African platform for treatment of PCB-contaminated equipment, and as such it puts Morocco at the forefront of countries committed on meeting the PCBs elimination targets as per the Stockholm Convention on POPs and



subsequent texts. The platform will expand its potential market by targeting stakeholders in countries of the region which have similar needs of decontamination. The market expansion will provide economies of scale and gains on operation performance which should ensure sustainability beyond the project implementation period. The activities to achieve this output are essentially two complementary actions.

- The documentation of lessons learned from the platform operation, with case studies, to disseminate through publications and accessible in the project webpage. The project targets regular annual updates.
- The participation to regional workshops in the framework of existent regional cooperation institutions. The project targets one participation per year during the implementation period.

64. The public outreach strategy will also provide an opportunity for knowledge sharing of experiences that could be scaled up or replicate in the country or in neighboring countries.

**Component 4: Monitoring, reporting and evaluation** (GEF Grant: US\$ 50,000; co-financing: US\$ 90,000)

65. The project monitoring and evaluation (M&E) aims at establishing a detailed and extensive monitoring and evaluation scheme in compliance with GEF and UNIDO procedures. This scheme will allow not only the monitoring of the project's progress, but also the construction of an overall project impact assessment performed on a rolling periodic basis, built-up from achievements under the project's different components. The monitoring and evaluation of the project activities combined to the assessment of the components execution provides a frame for periodic reviews of the project's "Theory of Change" and subsequent implementation strategies and work plans.

66. The project management committee is responsible of the overall monitoring and evaluation of the project implementation. The committee reports results of these activities to the UNIDO project manager. The project M&E is based on indicators defined in the strategic results framework (Annex A), and in the annual work plans. Reports to GEF Secretariat of the monitoring and evaluation results will be according to the project implementation report (PIRs) and the GEF Tracking Tool format. PIRs are submitted annually and the Tracking tool is submitted at CEO approval and after project termination.

67. UNIDO, through the project national coordination, 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. The monitoring of activities under this project will integrate lessons learned during the independent terminal evaluation of the GEF project (ID 3883) *"Safe PCB management Program in Morocco, Pillar II, Environmentally Sound Management and Disposal of PCB-contaminated Transformers in Morocco"*. Additional information on the project monitoring and evaluation are provided in Section 12.

d) [Incremental/ additional cost reasoning](#) and expected contributions from the baseline of GEFTF and [co-financing](#)

68. The GEF support to this project through GEF TF will strengthen the legal framework of PCBs management and national capacities, and will ensure a reliable inventory of PCB-contaminated equipment owned by the small-scale private sector is conducted. This combined intervention will ensure the continuity and upscaling of national efforts being done for PCBs elimination and will ensure equipment used in companies is decontaminated. Without GEF funding, these targets are not likely to be achieved and the business-as-usual scenario will continue to impact human health and water and soil



ecosystems.

69. Considering the poor awareness of PCB management requirements in the small-scale companies of the private sector owning contaminated transformers, it appears unlikely they will initiate the decontamination of their equipment, particularly because there is no legislation in place obliging them to make the first step. Furthermore the process of elimination of PCBs outside the country, in compliance with Basel Convention procedures, is complex and costly. Morocco, as many other developing countries, has little resources to finance hazardous wastes disposal.

70. In component #1, GEF TF contribution supports the efforts being undertaken by the government and public entities, which have the responsibility to provide the legal framework of hazardous waste and chemicals, including PCBs, management. GEF TF supports the country in reinforcing its legal framework on chemicals, including PCBs, supports the country to raise the level of awareness among industries and other electricity equipment owners, and supports the country in meeting its commitments after ratification of the Stockholm Convention on POPs. Such an intervention features an incremental cost approach.

71. Owners of PCB-contaminated equipment in the small-scale private sector in the business-as-usual scenario do not consider the risks posed by the presence of PCBs in their working environment. Companies in this segment usually do not provide the minimum maintenance requirements of their PCB-contaminated equipment in use. Once this equipment is decommissioned, it usually ends up with scrap metal recyclers who will incinerate or dilute the oil and sell the casings as scrap metal. This results in leakage and release of PCBs in the environment from transformer and capacitor casings. Therefore, ensuring these companies are aware of these risks and have guidance on how to comply with safe management of the equipment can justify an incremental cost approach. In components #2 and #3, GEF TF provides support to the private sector for compliance with the national legislation once it is enforced.

72. The national public stakeholders will provide co-financing in terms of coordination, human resources and support services. The national private stakeholders will contribute with equity to the business models to be developed for identification of PCB-contaminated equipment, decontamination of equipment in-use and disposal of decommissioned equipment and wastes.

73. GEF contribution to the project through GEFTF represents 24.3 percent of the project cost. The remaining 75.7 percent of the project's costs is co-financing as follows.

- The recipient government contributes in-kind by providing the administrative support, project management offices and other administrative services that represent 2.2 percent of the overall project cost.
- The companies in the small-scale private sector, owners of equipment which need decontamination or disposal, cover parts of the cost related to the analysis of PCB-contaminated equipment, disconnection and transport to the national platform, oil refilling, and potentially contribute to funding of other services based on the business model to be developed in concertation with the platform manager. This contribution of the project private beneficiaries represents 70.2 percent of the overall cost.
- UNIDO will provide in-kind and cash co-financing to the project that amounts to a total of 3.3 percent of the overall cost.

e) [Global environmental benefits](#) (GEFTF)

74. The project will ensure sizeable quantities of PCBs are eliminated. This project is in line with the GEF chemicals and wastes focal area Strategy and its objective to dispose of 80,000 tons of POPs<sup>17</sup>

during the 2016-2020 period. The project will contribute to the GEF corporate level indicator with the elimination of approximately 613 tons of PCB-contaminated wastes and about 2.4 tons of pure PCBs. The project further contributes to protecting the working environment of companies using contaminated equipment by supporting the decontamination of 1,740 transformers having an equivalent 541 tons of PCB-containing dielectric oil. The support of the project to sustainability of the operations of the locally established PCBs decontamination platform will ensure the decontamination of other contaminated equipment in Morocco, and beyond, in the region. It is expected the outcomes from the project achievements will further enable the decontamination of at least 3,000 tons of contaminated equipment through upscale and replication initiatives.

75. The proper decontamination of equipment in-use in a certified platform will consequently reduce the market of scrap dealers in the informal sector, which recycling activities pollute water and soil ecosystems. Therefore, the project will ensure these market actors' needs and contributions are taken into account during the consultation process, in order to not let anyone behind the structural change that is triggered.

76. The sustainability of these environmental benefits is ensured through strengthening of the legal framework and inclusive business models that feature the needs of target beneficiaries. The project is compliant with UNIDO's mandate of Inclusive and Sustainable Industrial Development (ISID). It will contribute directly to Sustainable Development goals SDG-3 (Good health and well-being), SDG-9 (Inclusive and sustainable industrialization), and SDG-12 (Sustainable consumption and production patterns).

#### f) Innovation, sustainability and potential for scaling up

##### **Innovation**

77. The main innovation of the proposed project is on the market approach for bringing private small-sector companies to comply with the legal framework on safe management of POPs. The business model developed in an inclusive manner will ensure needs, willingness and financial capacities of target beneficiaries are fully taken into account. This market approach considered in the context of a new legislation that is developed in parallel will ensure a coherent intervention, which results could be later documented for upscale and/or replication inside and outside the country.

##### **Sustainability and upscaling**

78. It is important that the intervention model and therefore achievements of the project be only a triggering mechanism for a broader national intervention. To this end, the support to strengthening the legislation, the improvement of technical capacities by making available knowledge resources in terms of technical guidance to management of contaminated equipment, and the activities for raising awareness of these equipment owners, taken together, will set solid foundations for a national strategy. The project component #1 will create new conditions for PCB elimination and establishes new mechanisms that support intervention during the transition period, when experiences are compiled and lessons learned. The project components #2 and #3 will develop business models for analysis of contaminated equipment and use of the national platform, which will ensure predictability and continuity of operations, thus increasing efficiency performance in the long term. The existence of such models will make it easier to participant stakeholders in upscaling the decontamination activities and other stakeholders to replicate the project's results. The implications of regional stakeholders through tailored outreach programs will expand the platform market, and will make the overall business model developed be sustainable.

2. *Child Project?* If this is a child project under a program, describe how the components contribute to the overall program impact.

Not applicable

3. *Stakeholders.* Will project design include the participation of relevant stakeholders from [civil society organizations](#) (yes ☒ /no ☐) and [indigenous peoples](#) (yes ☐ /no ☒)?

79. Table 4 lists the project main stakeholders and their role in the execution of activities detailed under section 1. In addition to execution partners already mentioned in this section, the table lists national stakeholders which can contribute to or benefit from the project execution and/or achievements. It is also expected that during inception phase other stakeholders will be identified.

**Table 4: Stakeholders map**

<b>Main Executing Partners</b>	<b>Stakeholder</b>	<b>Envisaged role in the project</b>
	State Secretariat for Sustainable Development	State Secretariat for Sustainable Development will be the lead executing agency of the proposed project. The Project Steering Committee (PSC) will be established under the Chairman of the Ministry. The SEDD will provide the requisite linkage of the project with other public interventions and will ensure the project achievements are mainstreamed in the government action.
	National Commission on PCBs	The Commission is established under the chairman of the Government authority responsible for Environment, with the mission to ensure the compliance with and implementation of the provisions of the Stockholm Convention on persistent organic pollutants, and particularly those related to the PCBs. Its members are representatives from different government departments and private companies.
<b>Counterparts and Stakeholders</b>	The Ministry of Energy, Mines and Sustainable Development	The Ministry of Energy, Mines and Sustainable Development is a major stakeholder as it is responsible for the energy policy in Morocco. The energy companies and the companies involved in electricity distribution are under the authority of this department. The Ministry will provide support to information collection, stakeholders mapping and coordination of activities.
	The Ministry of Industry, Trade, Investment and Digital Economy	This department is responsible for the design and implementation of government policy in the fields of industry, trade and new technologies. As such, the activities planned for strengthening the legal framework will be executed in close collaboration with the Ministry. The Ministry will be a member of the PSC and will provide assistance to the project on issues related to trade, investment and liaison with the industry sector.

	Poison Control Center	The Center is one of the major establishments in Morocco in pharmacovigilance. This institution is member of the National Commission on PCBs and plays an important role in awareness raising and dissemination of information on health related aspects of POPs presence in the environment.
	Ministry of Economy and Finance	This department is responsible for customs. The project will cooperate with this Ministry under the component for strengthening of the regulatory framework through the department in charge of chemicals trade control.
	Other ministerial departments such as Ministries in charge of health, Water, Agriculture etc.	These departments can benefit from or provide support in the field to a number of activities related to the decontamination of PCB-contaminated equipment in some industries, the protection of workers, preservation of water and soil ecosystems etc.
	Gender Committee	This committee is part of the SEDD and is responsible of mainstreaming gender dimensions in the Ministry action. The committee will ensure the gender dimensions are fully integrated throughout the project implementation.
	Universities and other academic institutions (Laboratoire National de l'Environnement, Laboratoire Officiel d'Analyses et de recherches Chimiques...)	The project will closely cooperate with lead universities and research centers to encourage education on management of hazardous chemicals, in particular PCBs, and to increase awareness among students and researchers. Laboratories will participate to the project PCB-screening activities and to sampling for measurement of the intervention impact.
	NGOs and other members of civil society	The project will collaborate with locally established NGOs active on environmental watch such as Association des enseignants des sciences de la vie et de la terre (AESVT) and members of the Coalition marocaine pour la justice climatique.

4. *Gender Equality and Women's Empowerment.* Are [gender equality and women's empowerment](#) taken into account (yes ☒ /no ☐)?

80. Scientific evidences show chemical pollution affects women, especially when breastfeeding. Women and infants are the most sensitive to POPs pollution, also because of their role in society that involve frequent contact with ecosystems prone to PCBs pollution such as soil and water. The agriculture sector employs approximately 92% of active women in Morocco, of whom 32% are under the age of 19<sup>8</sup>. They should therefore be target of awareness raising activities addressing risks related to PCBs and chemicals in general.

81. As the project is executed by government institutions, its management needs to comply with the general framework related to the integration of gender dimensions in different aspects of public intervention, including human resources, work conditions, working hours, maternity leaves etc.).

82. Morocco is committed since 2000 to a process for reforming its institutions in order to promote the rights of women and ensure their needs and contributions are fully integrated in public budgeting at

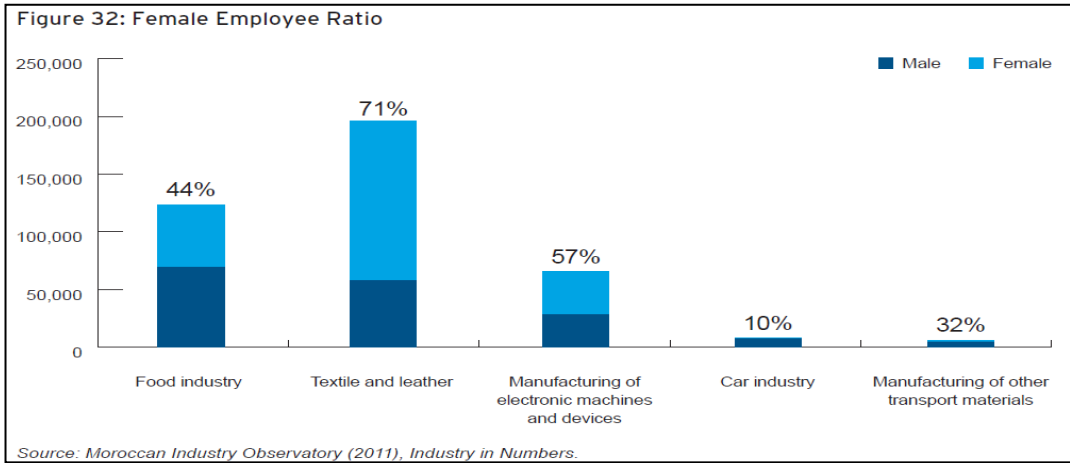
<sup>8</sup> Japan International Cooperation Agency, Morocco: Country Gender Profile, March 2007; C. Miller, J. Vivian, Women's Employment in the Textile Manufacturing Sectors of Bangladesh and Morocco, UNSRID

national and sub-national levels. Several institutional reforms target the integration of gender dimensions in development initiatives including planning, programming and implementation of public policies. The principle of gender equality is enshrined in the Constitution of July 2011.

83. In this context all Moroccan departments are required to mainstream gender dimensions in their programs and projects. Thus, a Gender committee was created in the SEDD and is responsible for mainstreaming the multi-faceted dimensions of gender considerations in environment sustainability initiatives. This committee will monitor compliance of the project intervention with requirements of gender dimensions integration.

84. Despite, these institutional changes, the situation in the field remains largely unequal. The share of women in the public sector workforce is 25%. Graph 1 shows the female employee ratio in different private industries in Morocco.

**Graph 1: Female employment ratio in different industries of Morocco**



85. Based on this brief analysis of the country situation against gender sensitive indicators, the project foresees at least 30% of the total number of experts trained under component #2 should be female. Nevertheless, a gender analysis will be carried out as part of the social assessment after the first six months of project implementation in order to allow for adjustments of the gender related targets, sufficiently capture the gender dimensions, and define the requirements for the project to achieve its gender-specific targets.

86. The proposed project complies with the GEF gender mainstreaming approach through integration of gender responsive indicators in the results framework. The project complies with UNIDO internal requirements on gender mainstreaming that include tools and guidelines for integration of gender dimensions throughout the overall preparation and implementation cycle. The most significant UNIDO tools and guidelines that are consistent with the GEF's Gender Mainstreaming Policy include Gender Mainstreaming the Project Cycle, Gender Mainstreaming Guide for Environment, Gender Analysis Template and Expert Database for gender analysis.

87. The project will ensure during implementation safety measures are available for both women and men working in the decontamination and waste elimination processes. All interventions throughout the overall project cycle will be guided by the need for both women and men to be provided with equal opportunities to access, participate in and benefit from the project.

5. *Benefits.* Describe the socioeconomic benefits to be delivered by the project at the national and local levels. Do any of these benefits support the achievement of global environment benefits (GEF Trust Fund) and/or adaptation to climate change?

88. In addition to environment benefits described in section paragraph 5 of section 1, which have impact on workers' health during maintenance activities, the project features socio-economic benefits that include job creation, in particular in the national platform for decontamination. The business model to be developed and the market expansion expected from the outreach program should increase services requests in the platform and therefore employment. These new jobs could also be considered in the intermediate parts between the owners of contaminated equipment and the decontamination platform, by inclusion in the value chain of actors in the informal sector who used to recycle the scrap metal. The project foresees the creation of 15 direct jobs and 20 indirect jobs, as result to its outcomes achievements, in services such as transport, oil analysis, maintenance, transformer sites upgrading and securing, recycling, freight customs, studies and investigation, etc.

89. This project will contribute for Morocco to pave the way towards compliance with the socio-economic dimensions related to the Stockholm Convention and subsequent texts on management of hazardous chemicals.

## 6. Risks

90. Table 5 identifies the main risks that have potential to affect the project execution or undermines achievements. It also provides measures for mitigation of these risks. Given the experience of UNIDO and its national counterparts on implementation of projects having similar scope of intervention, the overall project risk is rated low.

**Table 5: Risks rating and mitigation measures**

RISKS	RATE	MITIGATION MEASURES
<b>Institutional risk:</b> There might be delays in the finalization and enactment of legislation under development	Medium	The project will take advantage of the momentum created by the COP 22 to have the PCB Commission involve parliamentarians in passing the finalized law and the subsequent regulations (decrees of application). This should be supported by a strong involvement of the key Ministerial department members of the PCBs Commission and through workshops and training activities.
<b>Institutional risk:</b> Change on the top management of the governmental bodies could result on delays in the implementation of the project	Low	The Steering Committee (National Commission of PCBs) communication and networking will ensure the necessary support of the institutions concerned, regardless of persons with whom agreements have been included.
<b>Financial risk:</b> Mobilization of the government financial contribution and other co-financiers takes longer causing delays in the implementation	Low	The commitments of and agreements with some major stakeholders such as ONEE, LYDEC, RADEEF, OCP, AMENDIS, REDAL (ref. Annex H) will be materialized as soon as the project starts. They represent the major part of the PCB contaminated equipment owners. This will incentivize other stakeholders to get engaged.

<b>Market risk:</b> Low level of commitment of other private stakeholders	Medium	Commitment of the private sector, which is not a direct participant to the project activities, will be ensured through the dissemination of the investment component achievements, the availability of environmental management plans, and the enforcement of law and regulations.
<b>Technical risk:</b> Local expertise is limited for an effective implementation of practices related to an environmentally sound management of PCBs	Medium	The project will mobilize the existent national and international expertise to assist the national project team in providing support to PCB-contaminated equipment owners. In addition, the project will rely on the experience gained with the existent national PCBs decontamination platform.
<b>Climate Change Risk:</b> Potential impact of the climate variability on the project activities	Low	At this stage, the project does not foresee any impact of climate variability on its activities. The project does not feature any installation and its technical interventions mainly focus on depollution. The existent platform for decontamination located near the Casablanca port might be impacted by sea level rise, but the probably is not assessed to be likely.

#### 7. *Cost Effectiveness* in the project design

91. GEF contribution to the project will dispose of 613 tons of decommissioned equipment containing PCBs, eliminate 2.4 metric tons of pure PCBs, and decontaminate 1,740 transformers including 541 tons of dielectric oil.

92. The PCB decontamination platform is already in place and requires no additional licensing action to be operational. The staff is already trained on the decontamination process.

93. Contaminated equipment are not completely lost, only PCBs waste (wastes from the decontamination process) are exported. Metal casings, copper and brass are recycled at national level.

94. The decontaminated mineral oil is reused if it still meets the dielectric properties of use, and thus reduces the importation of virgin oil. The decontaminated mineral oil can also be thermally recovered in authorized cement plants and steel plants if they are no longer usable as dielectric oil. Heat recovery from unusable oil is complementary expense saving that will reduce the cost of decontamination from PCBs.

#### 8. *Coordination* with other relevant GEF-financed projects and other initiatives [not mentioned in 1]

95. This project builds synergies with the ongoing UNEP-GEF initiative on Revision and Update of the National Implementation Plan of the Stockholm Convention on POPs in Morocco. The new Plan should feature as priorities some of the activities proposed in this project, particularly those related to the management of U-POP. This NIP-revision features an update of the national PCB inventory and provides the opportunity to link inventories planned in the small-scale private sector with other inventories.

96. The proposed project integrates lessons learned from implementation of the two pillars of the Program for Safe PCB Management in Morocco.

97. The Program pillar I was dedicated to strengthening local capacities on identification and



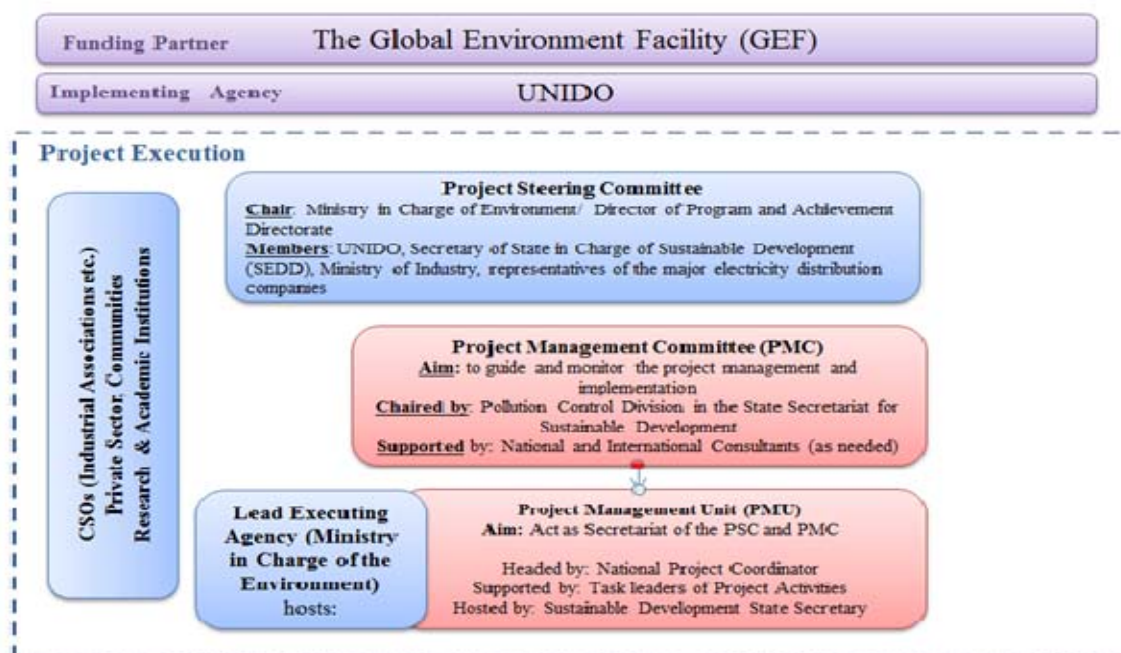
management of PCB-containing equipment. The Program pillar II was also successful in terms of awareness-raising regarding the risks posed by and the dangers stemming from PCBs in large-scale companies owners of PCB-contaminated equipment such as the electricity distribution companies and the government. Lessons documented in the terminal evaluation report of the Program will be mainstreamed in the management and monitoring of the project activities.

#### 9. Institutional Arrangement for project implementation

98. As the GEF Implementing Agency, UNIDO assumes the ultimate responsibility of the timely implementation of the project, the delivery of the planned outputs and the achievement of the expected outcomes. As requested by the Government of Morocco, the project will be implemented by UNIDO and its project manager, based at UNIDO headquarters in Vienna (Austria). UNIDO will enter into contracting agreements with national counterparts described in section 2. UNIDO will also liaise with other stakeholders, including the national decontamination platform and companies, in design of a business model that ensures the needs of both the contaminated equipment owners and the platform management are taken into account. All activities implemented and project management will be in accordance with UNIDO and GEF rules and regulations, and will comply with the approved project document.

99. Graph 2 describes the institutional arrangement that was agreed with national counterparts for implementation of the project.

**Graph 2: Project institutional arrangement**



100. UNIDO will manage the large procurements, contracting of the project national coordination, recruitment of international experts, whenever needed, and the terminal evaluation process. Full or parts of equipment acquired under the project may be transferred to national counterparts and/or project beneficiaries during the project implementation as deemed appropriate by the UNIDO Project Manager in consultation with project stakeholders.

101. The project lead national executing partner is the Secretariat of State for Sustainable Development.



A sub-contract including national recruitment, the organization of trainings, other capacity building activities and the procurement of support services will be issued in accordance with UNIDO's procurement procedures. The arrangement may be reviewed by the Project Steering Committee and the scope of the subcontracted tasks may be further expanded as mutually agreed.

102. A project steering committee (PSC) will be established under the Chairmanship of the Director of Program and Achievement Directorate. Its members will be the Secretary of State in Charge of Sustainable Development (SEDD), the Ministry of Industry, Trade, Investment and Digital Economy, representatives of the major electricity distribution companies and UNIDO. The PSC will be responsible for reviewing and approving the project strategic orientation. The PSC is also responsible of reviewing the overall progress in line with the project document.

103. A project management committee (PMC) will be established to monitor the management of the project execution. The Project Management Committee will be chaired by the head of the Pollution Control Division in the State Secretariat for Sustainable Development assisted by the UNIDO staff in Rabat and the national project coordinator. The committee will meet monthly to discuss technical, financial and managerial issues. Amendments to the project scope will be undertaken in line with the criteria and procedures established in the GEF/C.39/Inf. 3.

104. A project management unit (PMU) will coordinate, administer and supervise the day-to day activities of the project as agreed in the project's work plan. PMU activities will be financed through GEF grant and co-financing of the SEDD and UNIDO. The budget provided for project management cost (PMC) will include staffing costs and related activity expenditures. Staffing costs include the hiring of a project coordinator and an administrative assistant to help with the management and execution of the project. During the project implementation period, UNIDO will provide the PMU with the necessary management and monitoring support, whereas the SEDD will provide the office space and facilities required for its operations.

105. Main activities of the PMU include the preparation of procurement plans, terms of reference and procurement packages, the oversight of consultant activities, monitoring and evaluation of execution activities, knowledge management, the preparation of progress reports and financial reports for the project, and consultation with project stakeholders. The PMU will coordinate all project activities being carried out by project national experts and partners. It will also be in charge of the organization of awareness raising events and outreach initiatives undertaken within the project.

106. The PMU will act as the Secretariat of the PSC and PMC. The PMU will be hosted by the Sustainable Development State Secretary. The PMU will be responsible for the day-to-day management, monitoring and verification of project activities.

107. At the beginning of project implementation, a detailed work plan for the entire duration of the project will be developed by the PMU in close coordination with UNIDO. The work plan will define roles and responsibilities for the execution of project activities including monitoring and evaluation, and will set milestones for deliverables and outputs. The work plan will provide framework for management and monitoring activities of PMU and UNIDO, and will be reviewed and updated as appropriate.

#### *10. Knowledge Management*

108. The knowledge management component of this project has several purposes. In one hand, a sharing platform containing all reports from the project activities – either technical or monitoring reports – will be established and fed into a larger network of information sharing between project stakeholders. Information sharing will utilize cloud-based platform with different levels of access for different stakeholders. The platform will also record information that can be used in the process of verification

and reporting as per Basel and Stockholm Conventions requirements. The documents accessible will be arranged into different classification categories: technical documents, administrative documents, monitoring and evaluation reports.

109. Another dimension of the Knowledge management component is the dissemination to a larger public of experiences and lessons learned from this project. To this end, the project will make use of the existent webpage of the PCBs Program to regularly communicate news and events scheduled within the implementation cycle. As a contribution to the public outreach strategy, the project will open to stakeholders outside the country some of the technical workshops, which frequency will be defined during the project inception phase.

110. At the end of the project implementation period, a report will be produced documenting the experiences, with a comprehensive summary of the activities conducted under the project, concrete results, lessons learned, and best practices, as well as, “do’s” and “don’ts”. It is expected this report will serve as a knowledge tool by the Morocco government in design of a broader intervention in management of all hazardous chemicals, with a focus on POPs.

*11. Consistency with National Priorities.* Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes ☒ /no ☐ ).

111. All components of the proposed project are developed as mutually reinforcing parts of a coherent intervention that aims to safe management of chemicals as a contribution to protection of human health and the global environment. The project, through strengthening the legal framework, contributes to Morocco’s efforts for an effective and efficient implementation of the Stockholm Convention on POPs, by reinforcing its capability for management and disposal of PCB-contaminated equipment. The project contributes to attainment of the objectives defined in the current National Implementation Plan of the Stockholm Convention presented by Morocco to the COP2 and officially submitted to the Convention Secretariat in May 2006. The NIP states PCBs elimination is a national priority because of their volume still in use in Morocco, their spread across the territory and the risks they pose to local populations and sensitive human institutions such as hospitals and schools. The project, through contribution to strengthen the legal framework on PCBs, supports compliance to an environmentally sound management of companies owning equipment contaminated with hazardous chemical including PCBs.

112. The management and disposal of PCBs contributes to the implementation in Morocco of Agenda 21, the Johannesburg Plan of implementation (JPOI), and to the objective of the Strategic approach to international chemicals management (SAICM). One of the flagship projects of the national strategy for chemicals management is precisely the project "Secure Management and Disposal of PCBs" which established the National Platform for decontamination, the project will use.

113. The project also contributes to the implementation of the post-2015 Development Agenda, which was approved by Morocco. Indeed, the project achievements will impact SDG-3, SDG-9 and SDG-12.

## *12. M & E Plan*

114. The project monitoring and evaluation (M&E) will be done in accordance with UNIDO’s established guidelines for monitoring GEF-funded projects and in accordance with GEF procedures. Monitoring will be based on indicators defined in the project results framework and tracked annually in the project implementation reports (PIRs). The GEF tracking tool will also be used as a monitoring and evaluation tool.

115. UNIDO as Implementing Agency will involve the GEF Operational Focal Point, national executing counterparts and project stakeholders at all stages of the project monitoring and evaluation to ensure that the results lead to improved current and future project design and implementation.

116. According to the monitoring and evaluation policy of the GEF and UNIDO, follow-up studies like country portfolio evaluations and thematic evaluations should 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.

117. 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 planning for preparation of the mandatory GEF PIRs and GEF Tracking tool (ii) project impact indicators, and (ii) final evaluation.

118. The national project coordination team, in liaison with the UNIDO project manager, is responsible for the preparation and submission of the following reports that form part of the monitoring process.

- a. Inception report: A project inception report (IR) will be prepared 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 implementation. The work plan will include the dates of specific field visits, support missions from UNIDO and/or UNIDO consultants, as well as planning of meetings of the project's decision-making entities (PSC and PMC). The report will also include the detailed 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. When finalized, the report will be circulated to project counterparts, who will be given a period of one calendar month to respond with their contributions and/or queries.
- b. Project implementation report: The project implementation report (PIR) is an annual monitoring requirement of the GEF. It is an essential management and monitoring tool for those responsible of the project implementation and provides a frame for periodically documenting lessons learned from the implementation, with possible re-evaluation of risks associated to the project.
- c. Independent evaluation: The project will be subject to an independent terminal evaluation. This evaluation will take place within 6 months after the completion of project implementation. The final evaluation will review impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental targets. The Final Evaluation should also provide recommendations for follow-up activities. The terms of reference (TORs) for this evaluation will be prepared by UNIDO in accordance with the TORs developed by the UNIDO's Independent Evaluation Division.

119. Table 6 provides estimation of the budget requirements for monitoring, evaluation and reporting of the project implementation.

**Table 6: Monitoring and evaluation budget**

M&E Activity Categories	Feeds Into	Time Frame	GEF Grant Budget (\$US)	Co-financing Budget (\$US)	Responsible Parties
Measurement of GEF Tracking Tool specific indicators	Terminal evaluation report	At project completion	7,000	10,000	<ul style="list-style-type: none"> <li>• PMU provides inputs and draft reports;</li> <li>• PMU submits drafts for approval to PSC and PMC;</li> <li>• PMU submits approved reports to UNIDO PM</li> </ul>
Monitoring of project impact indicators (as per Log Frame)	Project Management reports; Annual GEF PIRs	To be agreed during inception between executing partners and UNIDO PM	23,000	10,000	
Independent terminal evaluation	Terminal Evaluation Review (TER) conducted by UNIDO EVQ	Project completion	20,000	50,000	Independent evaluator, for submission to UNIDO PM and UNIDO ODG/EVQ
Indicative cost			50,000	90,000	

120. Daily monitoring of the project activities in the field is done by the national project coordinator 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 national coordinator will inform UNIDO of any delays or difficulties faced during the implementation so as to ensure appropriate support or corrective measures are adopted in a timely and preventative, rather than in a remedial, manner.

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

- A. Record of Endorsement<sup>9</sup> 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)
Mohamed BENYAHIA	Directeur du Partenariat de la Communication et de la Coopération	SECRETARIAT D'ETAT AUPRES DU MINISTRE DE L'ENERGIE, DES MINES ET DU DEVELOPPEMENT DURABLE, CHARGE DU DEVELOPPEMENT DURABLE	07/18/2017

**B. GEF Agency(ies) Certification**

This request has been prepared in accordance with GEF policies <sup>10</sup> and procedures and meets the GEF criteria for a medium-sized project approval under GEF-6.					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Philippe R. Scholtès, Managing Director, Programme Development and Technical Cooperation, UNIDO-GEF Focal Point			Ms. Fatin Ali Mohamed	+43(1) 26026-3279	f.mohamed@unido.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 this project template.

<sup>9</sup> 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.

<sup>10</sup> GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, SCCF, and CBIT

## ANNEX A: PROJECT RESULTS FRAMEWORK

Result	Indicators	Baseline	Target	Means of Verification	Assumption and Risks
<b>Objective</b>					
To protect the environment through safe elimination of PCB-containing oil, equipment and wastes combined to strengthening the regulatory framework applicable to PCBs					
<b>Outcome 1</b>					
1- Conducive environment for safe management of chemicals, with focus on PCBs, supported by incentive mechanisms	A legal framework for chemicals management, including PCBs-contaminated equipment in-use is adopted	There is no legal framework related to PCB-contaminated equipment in-use	The law and subsequent regulations finalized and submitted to approval during first year of the project	Project progress reports  Official bulletin	A: Safe management of chemicals remains top priority of the Morocco government
<b>Outputs</b>					
1-1. Law on management of chemicals including equipment in-use is finalized	# of laws related to PCBs submitted to approval/approved	There is no general law for the management of chemicals. The law on chemicals is still in draft stage.	The law on chemicals is finalized and submitted to approval	Official bulletin	A. Continuous support and participation of the main stake holders
1-2. Regulations for PCBs secure management and elimination are improved	# of regulation related to PCBs submitted to approval/approved	Regulations need to be linked to the provisions of the Law on hazardous wastes and to the upcoming law covering management of chemicals in-use.	The regulations on PCBs are developed and submitted to approval	Official bulletin	A. Commitment and participation of the experts
1-3. New incentive mechanisms are developed to facilitate compliance with the legislation	# of new institutional and/or financial mechanisms developed and implemented		New incentive schemes (at least 2) are set up	Official publications	R: Parliament debate takes longer

Result	Indicators	Baseline	Target	Means of Verification	Assumption and Risks
<b>Outcome 2</b>					
Environmentally sound management of PCBs-contaminated equipment, waste and oil	<p># of PCB-contaminated transformers sent for analysis</p> <p># of companies adopting best practices and techniques on ESM of PCBs</p>	Few companies in small-scale private sector have BAT and BEP on management of PCB-contaminated equipment	Small-scale companies in the private sector analyze their equipment and have access to BAT and BEP on environmentally sound management of PCB-contaminated equipment	<p>Project progress and evaluation reports</p> <p>Feedbacks from participant companies through execution reports</p>	<p>A. Continuous support from the Government and national partner institutions</p> <p>A. Sufficient commitment of the participant companies</p> <p>R: Delays in co-financing mobilization</p>
<b>Outputs</b>					

Result	Indicators	Baseline	Target	Means of Verification	Assumption and Risks
2-1. 20,000 PCB-contaminated transformers in participant companies are screened /analyzed;	# of PCB-contaminated equipment screened	Any small-scale industry reports on PCB-contaminated equipment	20,000 screening tests and analysis of PCBs in equipment completed	Companies feedbacks through execution reports;	A. Continuous support from the Government and national partner institutions
2-2. Environmentally sound management practices are documented and disseminated among transformers' owners as technical guidance	# of companies adopting best PCBs management plans	Inventory of owners of contaminated equipment in the small-scale private sector not finalized	A database of the PCB-contaminated equipment in the small-scale private sector is available	Project progress reports	A. Commitment of participant companies
2-3. 39 companies participate to trainings on BAT and BEP in ESM of PCBs	# of training sessions  # of participant companies (male/female representatives)	No training on BAT and BEP in environmentally sound management of PCB target small-scale private sector	At least 39 companies adopt best PCBs management practices	Database accessible	R. Delays in co-financing mobilization
			At least 2 training sessions on BAT and BEP practices;  39 companies participate to training sessions (at least 30% of companies representatives are female)	Training workshops reports  Workshop's participants list	



Result	Indicators	Baseline	Target	Means of Verification	Assumption and Risks
<b>Outcome 3</b>					
3- PCBs, in either equipment in-use or decommissioned, are safely eliminated through the decontamination platform	<p>Quantities of PCB-contaminated waste eliminated</p> <p>Quantities of pure PCB-containing oil sent abroad for elimination</p> <p># of transformers decontaminated</p> <p>Quantities of dielectric oil decontaminated</p>	<p>PCB-contaminated transformers are either given to scrap metal dealers or kept in the companies premises after decommissioning.</p> <p>The decontamination platform is operational, but contaminated equipment owners do not use it.</p>	<p>Identified highly PCB-contaminated equipment decommissioned are sent abroad for safe disposal</p> <p>At least 50% of highly contaminated oils are sent abroad for elimination</p> <p>Contaminated transformers in-use (&lt;5000ppm) in 39 companies are decontaminated locally</p>	<p>Project progress and evaluation reports</p> <p>Feedbacks from participant industries through execution reports</p>	<p>A. Continuous support from the Government and national partner institutions</p> <p>A. Commitment of participant companies</p> <p>A. Business model from an inclusive development process is available</p>
<b>Outputs</b>					

Result	Indicators	Baseline	Target	Means of Verification	Assumption and Risks
3-1. 613 tons of PCB-contaminated equipment and 2.4 tons of pure PCB oils are sent abroad for safe elimination	Quantities of PCB-contaminated equipment sent abroad for safe disposal  Quantities of pure PCB oils eliminated	Few companies in the small scale private safely dispose of decommissioned equipment;  Decommissioned contaminated equipment are improperly recycled by scrap metal dealers;	613 tons of highly PCB-contaminated, transformers are decontaminated;  2.4 tons of pure PCB oil from decontamination are sent abroad for safe elimination	Project progress reports  Records of the Basel convention focal point in the SEDD	A. Continuous support from the Government and national partner institutions  A. Commitment of participant companies
3-2. 1,740 transformers with 541 tons of dielectric oils are locally decontaminated	#of transformers decontaminated	1,740 contaminated transformers are identified;	1,740 transformers are decontaminated;  541 tons of dielectric oils are decontaminated;	Reports of the platform management  Analysis reports from the laboratory of the platform	A. Business model from an inclusive development process is available
3.-3. Public outreach Strategy to promote Morocco's experiences of PCB platform	# of posts in the website on the operation of the platform  # of PPT presentations on the platform experiences in regional meetings	89 highly contaminated transformers still in-use have been localized;  188 decommissioned transformers have been localized.	3 posts in the website on the decontamination platform  3 PPT presentations on the experiences of the platform	Regional meetings' reports	

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

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

Not applicable

## **ANNEX C: BUDGET**

Please refer to the attached Annex.

## ANNEX D: WORK PLAN

Outcomes	Outputs	Year 1				Year 2				Year 3			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Conducive environment for management of chemicals, with focus on PCBs, supported by incentive mechanisms	1-1. Law on management of chemicals including equipment in-use is finalized												
	1-2. Regulations for PCBs secure management and elimination is improved												
	1-3. New incentive mechanisms are developed to facilitate compliance with the legislation												
2. Environmentally sound management of PCBs-contaminated equipment, waste and oil	2-1. 20,000 PCB-contaminated transformers in participant companies are screened /analyzed												
	2-2. Environmentally sound management practices are documented and disseminated among transformers' owners as technical guidance												
	2-3. 39 companies participate to trainings on BAT and BEP in ESM of PCBs												
3. PCBs, in either equipment in-use or decommissioned, are safely eliminated through the decontamination platform	3-1. 613 tons of PCB-contaminated equipment are decontaminated and 2.4 tons of pure PCB oils are sent abroad for safe elimination												
	3-2. 1,740 transformers with 541 tons of dielectric oils are locally decontaminated												
	3-3. Public outreach Strategy to promote Morocco's experiences of PCB platform												
4. Monitoring and evaluation based on GEF and UNIDO requirements	4-1. Project results regularly monitored and reported (PIRs)												
	4-2. Independent Terminal Evaluation conducted												

**ANNEX E: IN USE CONTAMINATED TRANSFORMERS (LESS THAN 5000 PPM) - JUNE 2017**

<b>Owner</b>	<b>Number of transformers</b>	<b>Total Weight (kg)</b>	<b>Contaminated oil (kg)</b>
ONE	650	810633	182708
LYDEC	439	663443	135523
RADEEF	209	297789	61694
OCP	106	212464	48297
HOLCIM	40	40000	10000
ONEP	39	107167	20273
RADEEJ	39	94865	25304
AMENDIS TANGER	38	44811	9446
REDAL	29	32827	6766
ONCF	28	28000	7000
RADEEL	16	18543	3942
SAMIR	14	14000	3500
RAK	13	10268	2047
RADEM	10	9907	2100
RADEES	8	19424	4549
AMENDIS TETOUAN	7	8140	1611
SNRT	7	3540	1820
MAROC PHOSPHORE	6	6000	1500
CIMENT DU MAROC	5	5000	1250
ODEP	5	5000	1250
FAM	4	4000	1000
LUKUS LARACHE	4	4000	1000
ONDA	3	3765	639
HOPITAL CASA	3	4860	1086
SMI	2	6700	1247
RADEEMA	1	1904	500
ALUMINIUM	2	4530	993
COSUMAR	2	2000	500
AEROPORT TANGER	1	1000	250
CHU MARRAKECH	1	1000	250
CUMAREX	1	1000	250
ENSET	1	1881	367
EXTRALAIT	1	1810	330
FAC DES SCES FES	1	1870	330
HOPITAL RABAT	1	630	118
LAFARGE	1	3730	780
LESIEUR	1	1000	250
MARSA MAROC	1	1880	347
RADEEO	1	1500	415
<b>TOTAL</b>	<b>1740</b>	<b>2480881</b>	<b>541232</b>

**ANNEX F: REMAINING PCB-CONTAINING TRANSFORMERS AND CONDENSERS - JUNE 2017**

	Number	Total weight (kg)	Oil weight (kg)	Remarks
Pure PCB-contaminated transformers decommissioned	12	8.005	2.405	To eliminate
PCB-containing transformers decommissioned (>5000 ppm)	14	32.671	7.552	To eliminate
PCB-containing transformers decommissioned (50 - 5000 ppm)	162	410.982	83.959	To eliminate
Pure PCB-containing transformers in-use	0	0	0	
PCB-containing transformers in-use (> 5000 ppm)	89	165.757	36.233	To eliminate
PCB-containing transformers in-use (50 - 5000 ppm)	1.741	2.480.881	541.232	To decontaminate

## ANNEX G: ENDORSEMENT LETTER OF THE GOVERNMENT OF MOROCCO

Secrétariat d'état auprès du Ministre de l'Energie,  
des Mines et du Développement Durable, Chargé  
du Développement Durable  
La Ministre

المملكة المغربية  
+٠٨٨٤٠١ ١٤٧٠٤٠  
Royaume du Maroc



كتابة الدولة لدى وزير الطاقة والمعادن  
والتنمية المستدامة، المكلفة بالتنمية المستدامة  
الوزيرة

06 JUIN 2017

A  
Madame la Présidente  
du Fonds pour l'Environnement Mondial

005990

**Objet : Programme national «Gestion et Elimination Sécurisée des PCB au Maroc ».**

J'ai l'honneur de vous informer que dans le cadre de la première phase du programme cité en objet, mis en œuvre avec l'appui financier du Fonds pour l'Environnement Mondial (FEM) et en collaboration avec l'Organisation des Nations Unies pour le Développement Industriel (ONUDI) et le Programme des Nations Unies pour le Développement (PNUD), plusieurs activités ont pu être réalisées notamment :

- L'institutionnalisation de la commission nationale PCB, chargée d'assurer la mise en œuvre des dispositions de la Convention de Stockholm sur les Polluants Organiques Persistants (POP) en général et les "PCB" en particulier.
- La réalisation d'un inventaire et d'une campagne d'analyse de 6000 transformateurs susceptibles d'être contaminés par les "PCB" qui a permis l'identification de 4170 tonnes d'équipements contaminés.
- La mise en place en 2015 de la première plate-forme de traitement et de réhabilitation des appareils électriques contaminés par les "PCB" au niveau de l'Afrique et des pays arabes.
- Le traitement et l'élimination de 1530 tonnes d'équipements contaminés, soit 37% de la quantité inventoriée au niveau national.

Cette première phase du programme n'a pas permis de traiter la totalité des transformateurs contaminés, c'est pour cela que des négociations ont été engagées avec le FEM en mars 2016 pour le lancement d'une deuxième phase d'un montant de 2 000 000 US\$ sur deux ans. Cette phase sera consacrée à éliminer le maximum d'équipements contaminés par les PCB et à renforcer le cadre réglementaire en matière de gestion écologiquement rationnelle des PCB. Le document du projet ainsi que la lettre d'endorsement ont été transmis à l'ONUDI au début de mai 2017.

La mise en œuvre de cette deuxième phase est d'une importance capitale pour notre pays afin de se conformer aux dispositions de la convention de Stockholm et de mettre en œuvre les actions prioritaires de notre Plan National de Mise en œuvre. Et nous comptons beaucoup sur votre appui pour le lancement de cette phase dans les meilleurs délais possibles.

En vous en souhaitant une bonne réception, je vous prie d'agréer Madame la Présidente, l'expression de mes salutations distinguées.

La Secrétaire d'Etat auprès du Ministre  
de l'Energie, des Mines et du  
Développement Durable  
Chargée du Développement Durable  
NEZHA EL OUAFI



## ANNEX H: INTENT OF PCB-CONTAMINATED EQUIPMENT OWNERS ON DECONTAMINATION AND SAFE DISPOSAL OF PCBs

ROYAUME DU MAROC  
Office National de l'Électricité et de l'Eau Potable  
Branche Eau

15° 2/3 / DPA / 2017

Lettre d'engagement

**Objet :** Programme national de gestion sécurisée des PCB

Dans le cadre de la gestion écologiquement rationnelle des appareils électriques détenus par L'ONEE Branche Eau un planning de traitement des équipements potentiellement contaminés par les PCB sera mis en œuvre en collaboration avec le Secrétariat d'Etat chargé du Développement Durable et le projet national de gestion sécurisée et d'élimination des PCB.

A cet effet, L'ONEE Branche Eau s'engage à faire réaliser par le projet toutes les analyses nécessaires en vue de déterminer le niveau de contamination des appareils qu'elle détient.

Dans le cadre de notre plan d'action, nous prévoyons également au cours des deux prochaines années de faire décontaminer les appareils dont le niveau de contamination s'est avéré inférieur à 5000 ppm et à éliminer de façon écologiquement rationnelle les appareils dont le niveau de contamination s'avèrerait supérieur à 5000 ppm.

Dans le cadre de ce plan d'action volontaire, L'ONEE Branche Eau prendra en charge les frais accessoires de ces opérations à l'exception des coûts d'élimination et de décontamination proprement dits. 7

Fait à Rabat le :

Le Directeur du Patrimoine  
Par Interim

Abdellah JAHID



**Direction Générale**

Angle esplanade Mohammed VI<sup>ème</sup>  
et rue Gouraud  
20070 Casablanca

Casablanca, le 27 juillet 2017

**Monsieur le Gouverneur Directeur  
des Régies et des Services Concerdés  
Ministère de l'Intérieur  
RABAT**

**N. Réf. 152/2017/JPD/sg**

**Objet : 2<sup>ème</sup> phase du programme national de gestion et d'élimination sécurisé des PCB  
Engagement**

Monsieur le Gouverneur Directeur,

J'ai l'honneur de vous transmettre ci-joint l'engagement de notre société relatif au programme national de gestion et d'élimination sécurisé des PCB.

Je reste à votre entière disposition pour de plus amples informations et vous prie d'agréer, Monsieur le Gouverneur Directeur, en l'expression de mon profond respect.

**Jean-Pascal DARRIET  
Directeur Général**



28 JUL 2017

**P.J : - L'engagement**

**Copie : - Monsieur le Directeur Général du Service Permanent de Contrôle**



## Lettre d'engagement

Dans le cadre de la gestion écologiquement rationnelle des appareils électriques détenus par notre société AMENDIS TETOUAN un planning de traitement des équipements potentiellement contaminés par les PCB sera mis en œuvre en collaboration avec le Secrétariat d'Etat chargé du Développement Durable et le projet national de gestion sécurisée et d'élimination des PCB.

A cet effet, notre société AMEDIS TETOUAN s'engage à faire réaliser par le projet toutes les analyses nécessaires en vue de déterminer le niveau de contamination des appareils qu'elle détient.

Dans le cadre de notre plan d'action, nous prévoyons également au cours des deux prochaines années de faire décontaminer les appareils dont le niveau de contamination s'est avéré inférieur à 5000ppm et à éliminer de façon écologiquement rationnelle les appareils dont le niveau de contamination s'avèrerait supérieur à 5000 ppm.

Dans le cadre de ce plan d'action volontaire, notre société AMEDIS TETOUAN prendra en charge les frais accessoires de ces opérations à l'exception des coûts d'élimination et de décontamination proprement dits.

Fait à Tétouan le : 06 juillet 2017

 Le Directeur Opérationnel  
Youness EL BOUENANI



Tanger le ; 15 JUIN 2017

Madame la Coordinatrice Nationale  
du Programme PCB  
Secrétariat d'Etat chargé du  
Développement Durable

**Direction d'Amendis Tanger**

N/Référence : DOP 255/2017/IEH/MN

V/Référence :

Objet : Lettre d'engagement.

Madame la Coordinatrice Nationale,

Dans le cadre de la gestion écologiquement rationnelle des appareils électriques détenus par notre société Amendis Tanger, un planning de traitement des équipements potentiellement contaminés par les PCB sera mis en œuvre en collaboration avec le Secrétariat d'Etat chargé du Développement Durable et le projet national de gestion sécurisée et d'élimination des PCB.

A cet effet, notre société Amendis Tanger s'engage à faire réaliser par le projet toutes les analyses nécessaires en vue de déterminer le niveau de contamination des appareils qu'elle détient.

Dans le cadre de notre plan d'action, nous prévoyons également au cours des deux prochaines années de faire décontaminer les appareils dont le niveau de contamination s'est avéré inférieur à 5000ppm et à éliminer de façon écologiquement rationnelle les appareils dont le niveau de contamination s'avèrerait supérieur à 5000 ppm.

Dans le cadre de ce plan d'action volontaire, notre société Amendis Tanger prendra en charge les frais accessoires de ces opérations à l'exception des coûts d'élimination et de décontamination proprement dits.

Par la présente lettre, Amendis Tanger réitère son engagement à collaborer étroitement pour la réussite du Programme national de la gestion sécurisée et élimination écologiquement rationnelle des PCB.

Dans l'attente, je vous prie d'agréer, Madame la Directrice Générale, l'expression de mes salutations les plus distinguées.

P. Le Directeur Opérationnel

Mouloud NOURAKI



## ANNEX I: SUMMARY OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The assessment proposes the use of the existent platform for decontamination and rehabilitation of PCB-contaminated equipment. The platform will have three main functions in the project execution.

1. The collection and packaging of PCB-contaminated equipment, either pure or heavily contaminated ( $> 5,000$  ppm) followed by expedition to the TREDI treatment center in France. The platform can dispose approximately 500 tons of PCB-containing equipment and waste the first year, and then about 100 tons annually.
2. Decontamination of mineral oil transformers containing PCBs for their possible rehabilitation and restoration, if they still have required dielectric properties; the decontamination of the transformers will be carried out by means of a closed loop using potash. The dechlorination technology is provided by TREDI, which is a world leader in the management of hazardous wastes, including PCBs. The decontamination capacity will be approximately 100 tons of oil per year. Waste from the decontamination process is sludge with no traces of PCBs, representing less than 1% of the mass of treated oil. This waste will be exported for disposal to TREDI France.
3. Dismantling, decontamination and mineral oil recovery of transformers contaminated with PCBs ( $< 5000$  ppm) which physical and electrical conditions does not support their re-use. The metal parts will be cleaned and recovered while the decontaminated oils will be either heat-recovered or reused in rehabilitated transformers.

The platform is classified, in accordance with the Morocco legislation, under the category dangerous, inconvenient or unhealthy establishments in class 2 (industrial designation 215b).

The platform is installed in the industrial zone of Bouskoura, which is an authorized site for class 2 and 3 activities. Bouskoura has also been chosen for its proximity to the main roads and to the port of Casablanca.

The different technologies will be decontaminated in the same infrastructure, the notion of "closed loop" will be adapted to the whole site operations. The experience of TREDI on similar interventions in Europe and in several other countries was put into contribution for the design of the platform and its operation. Thus, all the platform's systems including ventilation of the ambient environment, catchment and water networks, management of aqueous, gaseous and solid discharges, etc. have been designed so as to avoid rejections outside the site.

All incoming and outgoing flows will be confined within the site enclosure, leading to full potential emissions control. The platform is totally watertight and has a containment barrier to prevent any contamination of water and soil ecosystems. The air from the facility will be treated at the inlet (suction and filtering) and at the outlet (aspiration in the work stations) and with activated carbon. Contaminated waste and wash water will be sent abroad for disposal.

The risk of workers contamination is reduced through the systematic use of personal protective equipment (PPE), which is mandatory to all employees, and by air treatment to prevent contaminated dust from leaving the site.

The project full environmental and social management plan is developed as a separate document according to UNIDO format and annexed to this document.

## **ANNEX J: LEGAL PROVISIONS**

Legal clause for Morocco (Kingdom of): “The present project is governed by the provisions of the Standard Basic Cooperation Agreement between the Kingdom of Morocco and UNIDO, signed on 6 September 1988 and entered into force on 30 September 1993.”