



REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title: PCB Reduction in Cameroon through the use of local expertise and the development of national capacities			
Country(ies):	Cameroon	GEF Project ID: ¹	5367
GEF Agency(ies):	UNEP (select) (select)	GEF Agency Project ID:	01138
Other Executing Partner(s):	Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDED), Department of Standards and Control	Resubmission Date:	16/10/2015
GEF Focal Area (s):	Persistent Organic Pollutants	Project Duration(Months)	60
Name of Parent Program (if applicable):	N/A	Project Agency Fee (\$):	\$285,000
	<ul style="list-style-type: none"> ➤ For SFM/REDD+ <input type="checkbox"/> ➤ For SGP <input type="checkbox"/> ➤ For PPP <input type="checkbox"/> 		

A. FOCAL AREA STRATEGY FRAMEWORK²

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
(select) CHEM-1	Phase out of POPs and reduce POPs releases Outcome 1.4: POPs waste prevented, managed, and disposed of, and POPs contaminated sites managed in an environmentally sound manner Outcome 1.5 Country capacity built to effectively phase out and reduce releases of POPs.	Output 1.4.1 PCB management plans under development and implementation. Output 1.4.2 Countries receiving GEF support for environmentally sound management of obsolete pesticides, including POPs. Output 1.5.1 Countries receiving GEF support to build capacity for the implementation of the Stockholm Convention.	GEF TF	3,000,000	13,267,100
Total project costs				3,000.000	13,267,100

¹ Project ID number will be assigned by GEFSEC.

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

B. PROJECT FRAMEWORK

Project Objective: Increase national capacity to identify, manage and dispose of existing PCBs in Cameroon in an environmentally responsible manner in order to meet Stockholm Convention country commitments and minimize the risks to the population and the environment, posed by PCB exposure.

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
1. Strengthening the legal, administrative and regulatory framework for the sound management of PCBs in Cameroon	TA	Shift in regulatory framework allows Cameroon to facilitate the implementation of the Stockholm Convention	1.1.Regulatory framework upgraded /developed and disseminated includes Stockholm Convention targets and guidelines for the environmentally sound management of PCBs. 1.2 Training program for a National Expert Group on the: new regulatory framework for PCBs. 1.3 Import control system (including procurement) for transformers, capacitors and dielectric oil established, and enforced by Customs authorities.	GEF TF	450,000	1,564,922
2. Development of national capacity for the environmentally sound management and disposal of PCBs	TA	Technical and administrative capacities for the sound management of PCBs reinforced and allows Cameroon to develop and implement a sustainable and participatory PCB management /elimination plan decreasing the risk to humans and the environment	2.1 Information system housing inventory and PCB management data operationalized and includes GIS. 2.2 Feasibility of economic, or market-based instruments to promote ESM and disposal of PCBs evaluated, and included in the PCB management plan. 2.3 Analytical and laboratory capacity strengthened through equipment upgrades, staff training and intercalibration studies at ENSAI 2.4 National Expert Group formed and trained in all aspects of PCB life cycle 2.5 Local guidelines and standards developed for the ESM of PCBs (oil and contaminated equipment).	GEF TF	600,000	2,080,000
3. Environmentally sound disposal of	TA	Sound management and	3.1 National PCB inventory, including	GEF TF	1,450,000	8,391,378

PCBs		elimination of contaminated oils and equipment drastically reduce the risk of PCB contamination in the population and the environment	contaminated sites assessments, improved. 3.2 PCB contaminated oil and contaminated equipment securely packed and transported to centralized locations. 3.3 Export of PCB equipment and oils 3.4 Transformers are tested, and those deemed contaminated are decontaminated and recommissioned for use; PCB contaminated oil dechlorinated.			
4. Raise awareness across Cameroon of the importance of the sound management of PCBs	TA	Key stakeholders and the broader community well informed and included in the sound management of PCB in Cameroon allows to better understand the problem and to take actions to protect the population and the environment	4.1 Development of national awareness materials (including audio visual materials and others) 4.2 Identification of NGOs to assist with dissemination of information and communication materials 4.3 National PCB awareness strategy implemented and includes civil society, local communities and tribes.	GEF TF	200,000	840,800
Monitoring and evaluation	TA			GEF TF	150,000	190,000
Subtotal					2,850,000	13,067,100
Project management Cost (PMC) ³				(select)	150,000	200,000
Total project costs					3,000,000	13,267,100

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

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

Please include letters confirming cofinancing for the project with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount (\$)
Private Sector	ENEO (formerly AES Sonel) - Electrical Facility)	In-kind	6,000,000
Private Sector	ENEO ((formerly AES Sonel) - Electrical Facility)	Cash	3,000,000
CSO	AFAIRD	Cash	200,000
CSO	CREPD	In-kind	500,000
Other	ENSAI (Laboratory)	Cash	150,000
Other	ENSAI (Laboratory)	In-kind	150,000
Private Sector	SABC	In-kind	27,720
Private Sector	SABC	Cash	289,380
CSO	PAN Environmental Control Centre	Cash	18,000
CSO	PAN Environmental Control Centre	In-kind	482,000
GEF Agency/UNEP	Implementing Agency	In-kind	250,000
National Government	MINEPDED	In-kind	2,000,000
Private Sector	Foncham International Limited	In-kind	200,000
Total Co-financing			13,267,100

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹ (NA: SINGLE TRUST FUND, SINGLE AGENCY)

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b) ²	Total c=a+b
UNEP	GEF TF	Persistent Organic Pollutants	Cameroon	3,000,000	285,000	3,285,000
Total Grant Resources				3,000,000	285,000⁴	3,285,000

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

² Indicate fees related to this project.

⁴ Agency Fee has been agreed at 9.5%, as noted on GEF STAP PIF Review

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
International Consultants	335,500	165,000	500,500
National/Local Consultants	50,000	50,000	100,000

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

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

N/A

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF⁵

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

Cameroon signed the Stockholm Convention on 05 October 2001 and ratified it on 25 May 2005 and became a Party on 19 May 2009. The NIP was finalized in December 2012 and submitted to the Stockholm Convention Secretariat in the first half of 2013.

The NIP identifies the environmentally sound management and disposal of PCBs as one of the main priorities for the implementation of the Stockholm Convention. As such, the present project has been developed to address national needs and challenges with respect to the environmentally safe and sound management of PCBs throughout their life-cycle (as identified in the PCB inventory as well as in the NIP).

Cameroon's UN Development Assistance Framework (2013-2017) is centered on three priorities for assistance: assistance for strong sustainable growth and poverty alleviation; fostering of employment and social protection; and finally administration and the strategic management of the State. The proposed project, through its comprehensive activities, designed to increase Cameroon's capacity to identify, manage and dispose of existing PCBs in an environmentally responsible manner, minimizing the risks to the population and the environment posed by PCB exposure, and supports these three priorities. In addition, the project aims to set out a system for environmentally sound management of PCB transformers remaining in service in the electrical distribution grid and in small scale applications so assisting Cameroon to meet the PCB phase out targets set under the MEAs.

Since 1995, Cameroon has also been Party to the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa which sets out obligations for all Parties to prohibit the import of hazardous wastes into Africa from non-parties, prohibit the dumping at sea of hazardous wastes and control transboundary movements of hazardous wastes generated in a State party. Cameroon is also Party to the Basel Convention on Transboundary Movements of Hazardous Wastes and Their Disposal, since 1991.

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

The project and its activities are consistent with the GEF-5 Chemicals Results Framework's main goal "to promote the sound management of chemicals throughout their life-cycle in ways that lead to the minimizations of significant adverse effects on human health and the global environment."

In particular, the present project will contribute to Objective 1 "Phase Out POPs and Reduce POPs Releases" through the following interventions:

GEFV Strategy Indicator: Outcome 1.4: POPs waste prevented, managed and disposed of; Indicator 1.4.1 Amount of PCBs and PCB-related wastes disposed of, or decontaminated; measured in tons as recorded in the POPs tracking tool.

Contribution of project to indicator: Project Component 3: "Environmentally sound disposal of PCBs," will achieve the export and disposal of 200 tonnes of PCB equipment, and the disposal of 1600 tons of PCB contaminated equipment, and the decontamination and recommissioning of 417 transformers for use.

GEFV Strategy Indicator: Outcome 1.5: Country capacity built to effectively phase out and reduce releases of POPs; Indicator 1.5.2 Progress in developing and implementing a legislative and regulatory framework for environmentally sound management of POPs, and for the sound management of chemicals in general, as recorded through the POPs tracking tool.

⁵ For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter "NA" after the respective question.

Contribution of project to indicator: Project Component 1: "Strengthening the legal, administrative and regulatory framework for the sound management of PCBs in Cameroon," will upgrade and disseminate a new regulatory framework taking into account Stockholm Convention targets and guidelines for the environmentally sound management of PCBs. It will also train a National Expert Group, comprised of the Stockholm Convention National Focal Point, local environment, health, customs staff, and members of the private sector on the new regulatory framework for PCBs. The project will also develop a national labeling system for the identification of PCBs in equipment developed and implemented in consultation with PCB holders, and a Customs enforced import control system for transformers, capacitors and dielectric oil established and enforced by Customs authorities. Cameroon is eligible to access GEF funding on Persistent Organic Pollutants as it fulfills the two main requirements: being a Party to the Stockholm Convention; and having submitted its NIP. Cameroon submitted its NIP on 5 June 2013.

A.3 The GEF Agency's comparative advantage:

UNEP is working within its comparative advantage in implementing this project. UNEP is already implementing the project "*Demonstration of a regional approach to environmentally sound management of PCB liquid wastes and transformers and capacitors containing PCBs*" in the West African region", and is currently developing a related project in the SADC region of Africa. All of these projects will establish and maintain close contacts during the execution phase in order to streamline interventions and make use of 'lessons learned' and experience gained. UNEP will also ensure relevant guidance documents from both projects are utilized in this project, enhancing the cost effectiveness of activities in this project.

UNEP's comparative advantage for the GEF is related to its being the only United Nations organization with a General Assembly mandate to co-ordinate the work of the United Nations in the area of environment and whose core business is the environment. UNEP's comparative strength is in providing the GEF with a range of relevant experiences, proof of concept, testing of ideas, and the best available science and knowledge upon which it can base its investments. It also serves as the Secretariat to three of the MEAs, for which GEF is the/a financial mechanism. UNEP's comparative advantage also includes its ability to serve as a broker in multi-stakeholder consultations.

UNEP is the primary driving force in the UN system for international activities related to the sound management of chemicals. The aim is to promote chemical safety and provide countries with access to information on toxic chemicals. UNEP promotes chemical safety by providing policy advice, technical guidance and capacity building to developing countries and those with economies in transition, including activities on chemicals related to the implementation of the Strategic Approach to International Chemicals Management (SAICM).

The "Chemicals and Wastes" sub-programme of the Division of Technology, Industry and Economics (DTIE/Chemicals Branch) assists countries and regions in managing, within a life-cycle approach, chemical substances and waste that have potential to cause adverse impact on environment and human health. This project is in line with the Chemicals and Wastes objective, as included in UNEP's Medium Term Strategy (2014-2017) "to promote a transition among countries to the sound management of chemicals and waste to minimize impacts on the environment and human health."

The MINEPDED, Department of Standards and Control, will be the executing agency for this project and be managing the day-to-day implementation of the project including the coordination of the activities at national level, with the private sector and report to the implementing agency UNEP/GEF Coordination at Chemicals Branch in Nairobi.

UNEP's global GEF-related specialists and support staff (based in Nairobi HQ), as well as UNEP's Regional Office staff will be available to support and facilitate the correct and cost-effective implementation of this important project.

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

Global environmental problems, root causes and barrers that need to be addressed:

Approximately 1.7 million tonnes of PCBs were produced between 1929 and 1989 and a lot of the equipment containing PCBs is still in use somewhere, or stocked awaiting final disposal. Once PCBs are released into the environment they do not break down, but travel over long distances and continue to pose health risks to humans.

The Stockholm Convention requires that all equipment containing concentrations of PCB above 0.05% be phased out of equipment by 2025 and all PCB be subject to ESM for final disposal by 2028. This project is aims to contribute to attaining

this Convention requirement, through organizing the national stakeholders in Cameroon, and achieving the ESM of PCB and destruction of the POP content in the oil.

Currently owners and holders of PCB equipment are hampered in their efforts to improve management standards because the relatively small market for such work in each country inhibits local investment by competent service providers. Access to international service provision is both logistically difficult and prohibitively expensive. Current local waste management of PCB equipment results in uncontrolled PCB releases from unprotected metal reclamation or, worse, the selling of PCB oils other (immediate) uses. Such uses pose significant health and environmental threats and are not permitted under both the Stockholm Convention and the Basel Convention. This project aims to address these barriers.

Baseline scenario and any associated baseline projects:

Cameroon’s NIP includes a baseline assessment. According to the NIP inventory, the following potentially PCB-contaminated equipment is present: 8745 transformers, 87 condensers, 14 drums of liquid, 3 containers of solid, an electrical dryer, 2 circuit-breakers, 8 cutouts, 3 bottles of oil, PPE and soiled laboratory equipment. Among this equipment 290 transformers (approximately 200 tons) were confirmed to contain PCB contaminated oil (and were later deemed to be PCB equipment), while 3781 pieces of equipment are yet to be tested, and this testing will be completed under the project. PCB equipment is defined as: *PCB equipment* (oil and solid parts) with PCB concentrations >2,000ppm. *PCB contaminated equipment* is defined as: equipment-containing PCB contaminated mineral oil equipment <2,000ppm.

The NIP also notes that PCB-containing equipment is still being used in Cameroon, and that the main owner of such equipment is the Electricity Company (AES-SONEL). The NIP concludes that at least 1600 tons of PCB-contaminated equipment and 200 tons of PCB equipment are either in service or stocked on the Cameroon. It defines workers at companies using PCB-contaminated equipment as one of the most at risk populations. Measures currently in place to manage PCBs in Cameroon include: a 2011 decree banning the import, marketing and use of PCB transformers in Cameroon; secure stockpiles of PCB-contaminated transformers located at the AES Sonel facility; and annual inspection of the stockpiles by Ministry of Environment inspectors.

Additional baseline information was also collected during the **PPG phase**.

This included the identification of five contaminated sites: the Sosucam capacitor and transformers in Mbanjock; a Camrail enterprise site situated in Bassa; Enéo enterprises in Koumassi; the maintenance shop in Bassa; and the Cimencam storage site in Doula.

PPG investigations included consultation with utilities on the location of secure storage sites for PCB equipment and PCB contaminated equipment. The consultations confirmed that Enéo, Alucam and Sonara have secure storage facilities for PCB wastes.

Enéo has put in place robust management strategies for PCB-contaminated equipment. For example - transformers, capacitors, circuit breakers, alternators and cables are identified and labelled accordingly. During the PPG visit in 2015, the Enéo database contained 310 pieces of PCB-contaminated equipment. Alucam and Sonara also indicated improved management strategies for PCB-contaminated devices, noting that once PCBs are identified the equipment is taken out of services and stored in their respective secure storage sites

PPG investigations included the collection of information on PCB waste recently exported by utilities. This information is contained in Table 1, below.

Table 1: Quantity of the PCB garbage either exported available for destruction

Owner	Waste	Collection and transport contractor	Contractor	Year of disposal
AES SONEL	25 tons of PCB oil, 25 tons of metallic mass	ORTEC	Trédi (France)	2009
Alucam	10 tons	ORTEC	Sita decontamination	2014

During the PPG phase, baseline information collection also involved consultations with, and a visit to the CIMENCAM Figuil cement kiln in December 2014. The CIMENCAM Figuil cement kiln, located in Figuil, northern Cameroon, was selected for assessment as a potential treatment option for PCB contaminated oil because it is considered the most advanced cement kiln in Cameroon, with excellent management and staff capacity. Currently the kiln burns four types of fuel: fuel oil; cotton seed hulls; pet coke; and used oil. The plant consumes 28,000L of oil per day. CIMENCAM management advised if PCB contaminated oil was to be burned, it would need to be accompanied by analytical data indicating PCB concentrations, and the calorific value of the oil would also need to be determined.

In terms of current emission controls, the CIMENCAM furnace exit is currently monitored for dust and SO₂, but PCDD and PCDF monitoring equipment would need to be added as part of the project. Technical specifications for Figuil, together with the visit report, are provided in Appendix 4.

The PPG team considered utilizing the CIMENCAM cement kiln for disposal of PCB-contaminated oil with concentrations <500ppm. However, this approach is considered to be potentially appropriate in the long term. CIMENCAM was not considered viable for this project because further work is needed to assess the technical feasibility of this approach, as well as to ensure emissions comply with national legislation, and that the approach meets BAT/BEP requirements. In addition, there is a need for both robust legislation and enforcement in Cameroon. This project plans to strengthen legislation and enforcement, laying the groundwork for this.

Proposed alternative scenario:

The project is proposing the following draft disposal plan. The plan provides different solutions depending on the concentration of PCB in the various equipment considered:

- **PCB equipment** (an estimated 200 tons) will be exported for environmentally sound disposal.
- **PCB contaminated equipment** (as estimated 1,600 tons of equipment and mineral wastes), will be managed through:
 - retrofilling of transformers with contaminated equipment with concentrations <500ppm;
 - dechlorination of transformers with contaminated equipment with concentrations <500ppm-2000ppm.
 - decontamination by solvent cleaning will be utilized for non-porous metallic parts of transformer casings.

The following outlines the proposed alternative scenario on a component-by-component basis.

Project component 1: Strengthening the legal, administrative and regulatory framework for the sound management of PCBs in Cameroon

Expected outcome:

Shift in regulatory framework allows Cameroon to facilitate the implementation of the Stockholm Convention

Expected output:

1.1 Regulatory framework upgraded /developed and disseminated includes Stockholm Convention targets and guidelines for the environmentally sound management (ESM) of PCBs.

Planned activities:

- Draft regulation and Guidance documents developed;

The first project activity is to draft revised regulation and attendant guidelines for the ESM of PCB. The Guidance documents will be based on existing manuals developed by Basel Convention, but will be adapted to the specifics of the Cameroon, and include appropriate tools for involvement of the private sector (service providers), roles of control bodies, enforcement strategies, and PCB identification.

- Draft national regulation, supported by Guidance documents for different aspects of ESM of PCB, submitted for adoption.

The project will assist Cameroon with the relevant legislative instruments to be adopted. Due to the period of time required to adopt and implement a PCB legal framework, being longer than the project lifetime, the project will focus on interim short-term measures, such as a decree, which can be established directly by MINEPDED.

Expected output:

1.2 Training of National Expert Group, on new regulatory framework for PCBs

Planned activities:

- NEG members trained on new regulatory framework.

The project will train members of the NEG on the new regulatory framework and attendant guidelines to ensure that NEG members have a thorough and clear understanding.

Expected output:

1.3 Import and export control system (including procurement and sale) for transformers, capacitors and dielectric oil established, and enforced by Customs authorities

Planned activities:

- Import and export control system developed

The project will develop and establish an import and export control system, including procurement for transformers, capacitors and dielectric oil.

- Customs officers/workers trained

The project will train Customs officers/workers/inspectors in inspecting and document inspection of classified facilities to ensure new di-electric coolant oil and transformer units entering Cameroon are confirmed as PCB free and, that any oils and transformer units exported for use in electrical distribution (ie for purposes other than environmentally sound disposal in accordance with the Basel Convention) are similarly PCB free.

Project component 2: Development of national capacity for the environmentally sound management and disposal of PCBs

Expected outcome:

Technical and administrative capacities for the sound management of PCBs reinforced and allows Cameroon to develop and implement a sustainable and participatory PCB management /elimination plan decreasing the risk to humans and the environment.

Expected output:

2.1 Information system housing inventory and PCB management data operationalized and includes GIS.

Planned activities:

- Establishment of GIS Database

The project will establish a GIS database setting out the locations and details of PCB contaminated equipment.

- Training of GIS staff

The project will train four individuals in the operation, maintenance, and updating of the database (a developer, administrator, designer, and a topographer). These staff will communicate with PCB holders who will contribute data for inclusion in the database.

Expected output:

2.2 Feasibility of economic, or market-based instruments to promote ESM and disposal for PCBs evaluated, and included in the PCB management plan

Planned activities:

- Management plans established by PCB holders

The project will work with PCB holders to develop PCB management plans. Plans will cover the devices kept active and brought into line, and those eliminated and replaced. The plans will include device level energy efficiency calculations (load losses - to calculate the impact of replacing PCBs CO2 emissions in power plants). This activity will therefore focus on the development of a long term plan for PCB phase out in Cameroon beyond the scope of this project and will work to identify a strategy for securing the long term investment needed to support the decommissioning of in-service PCB transformers which are currently in use in Cameroon.

- Carbon emission reduction study

The project will produce a national study on reduction of carbon emissions through replacement of PCBs, and recovery of metals in Cameroon to ensure climate change benefits of the project are quantified.

Expected output:

2.3 Analytical and laboratory capacity strengthened through equipment upgrades, staff training and intercalibration studies at ENSAI

Planned activities:

- Gap analysis and action plan

The project will produce a gap analysis documenting the current analytical and human resource capacity of ENSAI, and a budgeted action plan, including procurement and training plan to guide the laboratory upgrade.

- Procurement of new equipment and training of personnel

In accordance with the action plan, new laboratory equipment will be procured and installed by the project. Laboratory staff will be trained in the operation and maintenance of the new equipment, and the laboratory will be equipped to analyse samples for PCB content.

Expected output:

2.4 National Expert Group formed and trained in all aspects of PCB life cycle

Planned activities:

- Training of NEG

The project will train in the NEG in all aspects of PCB management. Training sessions will be conducted on: PCB assessment; analytical aspects; development of action plans; technical aspects such as technical dismantling of PCB-containing equipment; transport of equipment; and storage of equipment; administrative procedures for PCB management (including routine transformer management/maintenance at utility level); identification, assessment and management of contaminated sites; and PCB elimination.

Expected output:

2.5 Local guidelines and standards developed for the ESM of PCBs (oil and contaminated equipment)

Planned activities:

- National PCB guidelines

The project will coordinate the NEG to develop five national guidelines for PCB management, including: dismantling of PCB-containing equipment; transport of equipment; storage of equipment; identification, assessment and management of contaminated sites; and PCB elimination.

Project component 3: Environmentally sound disposal of PCBs

Expected outcome:

Sound management and elimination of contaminated oils and equipment drastically reduce the risk of PCB contamination in the population and the environment

Expected output:

3.1 National PCB inventory, including contaminated site assessments, improved

Planned activities:

- PCB analysis of in-service equipment

As part of implementation of facility-level PCB management plans, the project will develop a system to catalogue and analyse in-service transformers for PCB content. The project will assist facilities in the collection of transformer oils for analysis at the ENSAI laboratory.

- PCB analysis of disused equipment

As part of implementation of facility-level PCB management plans, the project will assist PCB holders in collecting samples for of potentially contaminated oil and other equipment for analysis at ENSAI laboratory.

- Assessment of potentially contaminated sites

The project will support contaminated site assessment by the NEG, and the institution of management measures, including containment measures, to manage sites deemed to be contaminated with PCBs.

Expected output:

3.2 PCB contaminated oil and contaminated equipment securely packed and transported to a centralized location for dechlorination

Planned activities:

- PCB equipment packed and recorded in manifest.

The project will assist in recording 200 tons of PCB equipment in manifest, and pack equipment securely, and transport to a central location, ready for disposal.

Expected output:

3.3 Export of PCB contaminated equipment and oils

Planned activities:

- 200 tons of PCB equipment exported for disposal

The project will export an estimated 200 tons of PCB equipment for disposal at a suitable facility in Europe.

Expected output:

3.4 Transformers are tested, and those deemed contaminated are decontaminated and recommissioned for use; and PCB contaminated oil dechlorinated.

Planned activities:

- Sampling protocols for in-service and decommissioned transformers
- Dechlorination of PCB contaminated oil

- Decontamination by retrofilling

As part of the implementation of facility-level EMPs, sampling and labeling protocols will be developed for both in-service and decommissioned transformers. Sampling will include disused transformers, bulk oil stores, and pieces of waste from dismantled transformers. Apparatus found to be contaminated at concentrations of 50-500ppm will be decontaminated by retrofilling.

Project component 4: Raise awareness across Cameroon of the importance of the sound management of PCBs

Expected outcome:

Key stakeholders and the broader community well informed and included in the sound management of PCB in Cameroon allows to better understand the problem and to take actions to protect the population and the environment

Expected output:

4.1 Development of national awareness materials (including audio visual materials)

Planned activities:

- Needs assessment

The project will complete a needs assessment to identify key stakeholders and at risk communities, and establish the level of communications and awareness on PCBs.

- Awareness raising materials

The project will seek to inform and engage stakeholders about PCBs and equip communities at risk with information to safeguard themselves through awareness raising activities. Awareness raising materials will be published in local languages to ensure maximum uptake.

Expected output:

4.2 Identification of NGOs to assist with dissemination of information and communication materials

Planned activities:

- NGO(s) identified to assist with awareness raising activities.

The project will identify experienced and interested NGOs to assist with community consultation and awareness raising activities.

Expected output:

4.3 National PCB awareness strategy implemented and includes civil society, local communities and tribes.

Planned activities:

- Implementation of national PCB awareness strategy

The project will engage an NGO to develop and implement a national PCB awareness strategy that addresses the needs identified in the needs assessment. Activities will be focused at the community level, with sensitization events held in communities at risk, ie those close to facilities holding PCBs and residing near PCB contaminated sites.

A. 5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

Without this GEF-assisted project, PCB equipment will continue to be managed within the same operational scheme as non-PCB equipment giving rise to widespread cross contamination and the continuing threats posed by equipment at locations recognized in Annex A part II of the Stockholm Convention as presenting particular risks. Obsolete equipment will continue

to be stored on unprotected sites and to be disposed of to local waste handlers, principally for metal reclamation. PCB releases will continue particularly from the sale, by local waste management enterprises, of oils for open use in contravention of both the Stockholm and Basel Conventions.

In Component 1 GEF funding will be used to revise PCB regulations and provide comprehensive training on the regulatory reforms to the National Expert group. In Component 2 GEF finance will ensure a functional reference laboratory is operational in Cameroon, and support the technical training in PCB management of the National Expert Group. Component 2 will also look to establish a long term PCB phase out plan for PCB equipment currently in service. In Component 3, GEF finance will lead to the export and environmentally sound disposal of PCB-contaminated oil and equipment.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks. Please note that a series of Output level risks can be found in the attached logical framework in addition to the strategic issues listed below:

Risk	Risk ranking	Mitigation measure
National legislation not enacted and no support for strengthening of regulations due to market pressure	Moderate	Government has engaged with the public and private sector owners of PCB to ensure buy-in to the phase out project. The project is seen as a mechanism for Cameroon to meet the Stockholm Convention requirements for PCB elimination. The project is therefore seen as a stimulus to assist Cameroon and those holding PCB.
Owners of PCBs not interested in taking part in the project	Low	The development of PCB legislation will increase interest and buy-in. A steering committee with representatives of the different sectors involved will be established to carry out awareness raising activities directed towards the owners of PCBs. The preparatory phase of the project has raised the awareness of industry obligations under the Stockholm and Basel Conventions and engaged public electrical utilities in project design.
Contamination of workers handling PCBs	Low	The NIP defines workers at companies using PCB-contaminated equipment as one of the most at risk populations. The project will take the necessary security measures for PCB handling, follow international safety and security protocols, including the use of protective accessories and compliance with procedures. PCB handling will be supervised by members of the National Expert Group, and will not be carried out within the project (demonstrations) until the guidelines for safe handling are disseminated.
Project identifies more PCBs than are budgeted for	Medium	The project has been designed around maximizing cost effectiveness, particularly in relation to disposal methods, and the need to minimize the quantities of equipment exported for disposal, and to maximize the quantities of equipment disposed of in Cameroon. Locally relevant disposal options have been studied, including the potential for refilling, dechlorination, decontamination of non-porous metallic components. According to the project disposal plan only 200 tons of PCB equipment (ie with PCB concentrations >2,000ppm) will be disposed of internationally. If the amount of PCB equipment identified is >200 tons additional co-finance will be sought from PCB holders.
Impacts of climate change on the project	Low	According to the findings of the fourth Intergovernmental Panel on Climate Change (IPCC) Assessment report, possible impacts of climate change, on

	<p>Cameroon, relevant to this project include: a 15% increase in annual rainfall by 2100; and destruction of low barrier beaches in the Gulf of Guinea. To mitigate these risks the project will ensure that PCBs are not stockpiled within the vicinity of coastal areas susceptible to storm surge, and that storage facilities are located on all-weather roads, thereby mitigating the risk of the project being adversely affected by heavy rain.</p>
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A.7. Coordination with other relevant GEF financed initiatives

The project will draw on the lessons and experiences of relevant projects including:

- **GEF Project ID 5060 Developing Core Capacity for MEA Implementation in Cameroon:** This national project aims to strengthen institutional capacity for the implementation of MEAs as a follow-up to the National Capacity Self-assessment exercise. The new PCB project will make the necessary linkages at executing agency level to maximize synergies and impact from these related projects.
- **GEF Project ID 4641 Disposal of POPs and Obsolete Pesticides and Strengthening Sound Pesticide Management (in Cameroon):** This national project has been developed to remove a stockpile of obsolete pesticides identified by a previously funded Crop Life International initiative linked to the Africa Stockpiles Project. The project will include elements where synergies with the PCB project should be considered including the potential for a single waste management contract for the export of obsolete pesticide waste and the proposed export of PCB capacitor waste for environmentally sound destruction.
- **Demonstration of a Regional Approach to Environmentally Sound Management of PCB Liquid Wastes and Transformers and Capacitors Containing PCBs:** This regional project is being implemented by UNEP in Benin, Burkina Faso, Chad, DR Congo, Cote d'Ivoire, Djibouti, Guinea, Guinea Bissau, Mali, Mauritania, Morocco, Niger, Senegal and Togo. Appropriate linkages will be made with the key project partners. UNEP will ensure that all information produced under the West African project is made available to Cameroon. This includes PCB guidance documents developed, which will be adapted and adopted for use in Cameroon. To facilitate cross-project learning, the Cameroon project team will attend the West African regional project Steering Committee Meeting. The pool of experts used on the West African project, will also be contacted and invited to express interest in the execution of the Cameroon project. This project has highlighted to risks to establishment of a regional facility and also the need to address large numbers of pure PCB transformers which remain in service whilst a funding mechanism is developed to allow for phase out and replacement.
- **The UNEP Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC):** Based in Spain, is a centre for international cooperation with Mediterranean countries on development and innovation in the production sector and civil society, based on more sustainable consumption and production models. The Centre develops its activity under the Mediterranean Action Plan (MAP) for the protection and development of the Mediterranean basin. The Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (MedPartnership) is a collective effort of regional, international, non governmental organizations and countries sharing the Mediterranean Sea, towards the protection of the marine and coastal environment of the Mediterranean. The MedPartnership is being led by UNEP/MAP and the World Bank and is financially supported by the Global Environment Facility (GEF), and other donors. MedPartnership includes a component on PCBs – specifically focused on the environmentally sound management of equipment, stocks and wastes containing or contaminated by PCBs in national electricity companies of Mediterranean countries. Lessons will be drawn from the disposal experiences of this project, and guidance documents developed for PCBs owners will also be adapted for Cameroon.
- **Disposal of PCB oils contained in transformers and disposal of capacitors containing PCB in Southern Africa:** This project is currently being finalized and will be implemented by UNEP. UNEP will ensure that all information produced under the SADC project is made available for use in Cameroon, and the executing agencies will be encouraged to consult each other throughout project execution.

- **Best Practices for PCB Management in the Mining Sector of South America:** The project will also draw on the training and guidance material produced under the South American project, including the PCB Management tool. A key element of this project is raising awareness about PCB management in a sector where transformers are not "core business." This project will seek to learn from the South American experience in raising awareness in sectors outside of the electricity supply, to ensure greater project impacts.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

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

Key stakeholders have been identified in the public and private sectors, as well as in the community. In the public sector, these include stakeholders from: the Ministry of Environment, Protection of Nature and Sustainable Development, Ministry of Industry, Mining and Technological Development, Ministry of Health, Ministry of Labour and Social Security, Ministry of Energy and Water, Ministry of Justice, Ministry of Research and Scientific Innovation, and the Department of Customs. These public sector stakeholders will be well consulted during project preparation on the feasibility of the project design, and their potential respective contributions to the project outcomes.

Key industry stakeholders include personnel and management staff from the following companies: ENEO, CIMENCAM, ASECNA, ADC, ALUCAM, SONARA, CAMTEL, and GICAM. As key owners of PCB contaminated equipment, the cooperation of these private sector partners is essential to the project's success. As such consultation with these partners during the development of Cameroon's NIP. Consultation continued throughout project development, to ensure that the private sector understands the goals of the project, the dangers posed by PCBs, the planned regulatory developments in Cameroon, and is supportive and cooperative.

The following research institutions have also been identified and will be consulted during the project development: ENSAI, Centre Pasteur du Cameroun, University of Yaoundé I, HYDRAC, and the BOCOM analytical laboratories. ENSAI will contribute to the project through the laboratory analysis of mineral oil from in-service transformer and other samples.

The Research and Education Centre for Development (CREPD) is a Cameroon based NGO that aims to bridge the gap between science and action in Cameroon and sub-Sahara Africa. CREPD's activities are focused on health and environmental issues in collaboration with government, industry, and non-governmental organizations. CREPD has been involved in successful projects on sound management of persistent toxic chemicals (mercury, lead, cadmium) in products including cosmetics, batteries, leather, and on POPs. CREPD will be a key partner in executing this project.

The Association of Honest Africa Women for the Research and Development (AFAIRD, Association des Femmes Africaines Intègres pour la recherche et le development) will collaborate with the project to ensure that women's needs and roles are addressed by the project, The Pan Environmental Control Centre, is the young waste management enterprise, accredited by the Ministry of Environment and experienced in PCB management. The Centre has many partnerships in France, and in the USA involved in PCB management. It is envisaged that the Centre will be a key partner in managing the PCB waste generated during the project, including the provision of a transformer storage site for dechlorination. FONCHAM International, an NGO will contribute in providing other options for PCB treatment techniques that are environmentally friendly, awareness raising in POPs and also, it has a very good mastery in the management of other POPs in the Waste electrical, electronic equipment.

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

Exposure of wildlife, in particular fish, to PCBs occurring as a result of past use, spills and accidents, leakage from hazardous waste sites, etc. may have occurred, but little monitoring of PCBs has been undertaken in francophone Africa in humans, wildlife and fish, sediment, soil and water. For example, few countries (Benin, Cameroon and Côte d'Ivoire) have limited data on PCBs in marine fish (UNEP 2003 - UNEP 2003. Regionally-based Assessment of Persistent Toxic Substances). Where data is available, there is indication of contamination. For example, in a report from Cameroon in 1996 it

was observed that 420 mg/kg of PCBs were detected in some fish species and that most underground aquifers, supporting more than 1.4 million people in Cameroon's main port city of Douala, were contaminated by PCBs, while the city's surface waters contained an average PCB concentration of 4.5 µg/litre. A 1992 study of shrimp in Cameroon found PCB contamination at 342 ng/g (UNEP, 2003). Workers in the power and chemical process industries used PCBs without protective measures. Informal uses included burning PCB wastes as part of fuel oil in furnaces and in motor garages, which would likely have resulted in dioxin and furan releases (Sama, 1996).

PCB contamination of African waters is of particular concern because of the heavy reliance of the general population on fish as a main source of protein (with higher per capita consumption than in developing nations, despite lower overall protein intake) and also for commercial reasons. For example, in Cameroon, in 1996, fish contributed 44 % of the diet of the general population, of which 39% was harvested from marine waters. Data on POPs exposure in humans is extremely limited for Africa, with data on PCBs even more scarce than for pesticide POPs.

At national and local level it is expected environmental and health benefits thanks to decreased releases of PCBs that will reduce risk of contamination of water bodies and other media thereby reduce threat to food sources. The implementation of ESM schemes will also decrease risk of direct exposure to PCBs of occupationally exposed workers or people at risk to these chemicals through bad practices like open uses PCB oils or recycling contaminated equipment.

The experience gained and capacity built for the sustainable management of PCBs and wastes by all stakeholders of this Project constitute another major benefit at national level. The strategic regional approach and tools developed can be used to manage other types of chemicals or chemical wastes other than PCBs or POPs both at national or regional level.

Besides the awareness that this project will raise among all stakeholders including government officials regarding the need for ESM of PCBs, the project will also help them develop good practices towards better control and management of chemicals and wastes. In particular, health inspectors, environmental officers and custom officers will greatly benefit from this project by building capacity and gaining experience during training activities.

The electrical companies, private sector and other transformer owners will also benefit from this project. The project will not only contribute to put in place good and sustainable practices at their sites but it will also allow them to phase out and dispose of PCBs and wastes at an affordable costs. They are also expected to gain technical capacity.

In terms of gender, in daily life, men, women, and children are exposed to different kinds of chemicals in varying concentrations. Biological factors (notably size and physiological differences between women and men and between adults and children) influence susceptibility to health damage from exposure to toxic chemicals. Social factors, primarily gender-determined occupational roles, also have an impact on the level and frequency of exposure to toxic chemicals, the kinds of chemicals encountered, and the resulting impacts on human health. These gender dimensions need to be reflected at both site- and policy-level interventions for sound chemical management (for reference see UNDP (2007): Gender Mainstreaming (Key driver of development in environment and energy) Chemicals Management).

While recent scientific data from South Africa disclosed that especially women (as they are mainly working in and around the house) are vulnerable to pesticides applied through malaria control interventions, no such examples exist yet related to PCB issues especially in the participating countries. Women and children are often exposed through secondary exposure from vectors such as washing of contaminated laundry and casual contact with family members themselves directly exposed to PCB.

Linked to this point the electrical sector in the region predominantly employs men as engineers and maintenance personnel. As a result the primary social group exposed to PCB impacts are men. These can manifest in terms of immediate health impacts related to direct exposure and in terms of negative impacts on male fertility and other long term health impacts related to endocrine disruption.

It is noted that the roles of women and men vary across contexts and over time, therefore, the generic gender issues described above will serve as a reference only. When the project starts, a more in-depth analysis on the roles of men and women, and their subsequent exposures to PCB will be carried out based on the specific context of Cameroon. This project will pay attention to the gender dimensions in each of the project components, including through ensuring opportunities for women and men are provided in all training activities and that those groups considered most vulnerable are empowered to reduce the impacts of exposure.

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

Due to the scope of the project, driven by the significant amount of PCB contaminated equipment present in Cameroon, this project design has had a strong emphasis on cost effectiveness, particularly in relation to disposal methods, and the need to minimize the quantities of equipment exported for disposal, and to maximize the quantities of equipment disposed of in Cameroon. Locally relevant disposal options have been studied, including the potential for retrofilling, dechlorination, decontamination of non-porous metallic parts. Retrofilling is key to cost effectiveness in this project. The cost of retrofilling transformers (US\$2000 per unit) is 20% of the cost of the alternative, transformer replacement (approximately US\$10,000 per unit).

As a result of these investigations, a cost-effective disposal plan has been developed and is outlined below. For the purposes of this project, PCB contaminated equipment is defined as: equipment-containing PCB contaminated mineral oil equipment <2,000ppm. PCB equipment (oil and solid parts) with PCB concentrations >2,000ppm.

Draft PCB disposal plan:

1. **PCB equipment and PCB contaminated equipment:** export of 200 tons for environmentally sound disposal (>2,000ppm).
2. **PCB contaminated equipment:** 1,600 tons of equipment and mineral wastes.
 - a. Retrofilling: of transformers with contaminated equipment with concentrations <500ppm
 - b. Dechlorination: of PCB contaminated oil with concentrations <2000ppm
 - c. Decontamination by solvent cleaning of non-porous metallic parts of transformer casings.

As outlined above the project will also work with holders of pure PCB transformers currently still in use to develop a phase out plan to meet the PCB elimination target. This will build on the foundations laid by this project to provide a plan for the future.

C. DESCRIBE THE BUDGETED M &E PLAN:

UNEP will be responsible for managing the mid-term review/evaluation and the terminal evaluation. The Project Manager and partners will participate actively in the process.

The project will be reviewed or evaluated at mid-term. The purpose of the Mid-Term Review (MTR) or Mid-Term Evaluation (MTE) is to provide an independent assessment of project performance at mid-term, to analyze whether the project is on track, what problems and challenges the project is encountering, and which corrective actions are required so that the project can achieve its intended outcomes by project completion in the most efficient and sustainable way. In addition, it will verify information gathered through the GEF tracking tools.

The project Steering Committee will participate in the MTR or MTE and develop a management response to the evaluation recommendations along with an implementation plan. It is the responsibility of the UNEP Task Manager to monitor whether the agreed recommendations are being implemented. An MTR is managed by the UNEP Task Manager. An MTE is managed by the Evaluation Office (EO) of UNEP. The EO will determine whether an MTE is required or an MTR is sufficient. An independent terminal evaluation (TE) will take place at the end of project implementation. The EO will be responsible for the TE and liaise with the UNEP Task Manager throughout the process. The TE will provide an independent assessment of project performance (in terms of relevance, effectiveness and efficiency), and determine the likelihood of impact and sustainability. It will have two primary purposes:

- to provide evidence of results to meet accountability requirements, and
- to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP and executing partners.

While a TE should review use of project funds against budget, it would be the role of a financial audit to assess probity (i.e. correctness, integrity etc.) of expenditure and transactions.

The TE report will be sent to project stakeholders for comments. Formal comments on the report will be shared by the EO in an open and transparent manner. The project performance will be assessed against standard evaluation criteria using a six point rating scale. The final determination of project ratings will be made by the EO when the report is finalised. The evaluation report will be publically disclosed and will be followed by a recommendation compliance process.

The direct costs of reviews and evaluations will be charged against the project evaluation budget. The detailed M&E budget is included as Annex G.

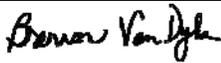
PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

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

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Mr. Justin NANTCHOU NGOKO	Director Ministry of Environment and Nature Protection	Ministry of Environment and Nature Protection	06/05/2015

B. GEF AGENCY(IES) CERTIFICATION

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

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Brennan Van Dyke Director, UNEP GEF Coordination Office		October 16, 2015	Kevin Helps Portfolio Manager UNEP Chemicals Branch, DTIE	+254 20 762 4607	Kevin.helps@unep.org

ANNEX A: PROJECT RESULTS FRAMEWORK

PCB REDUCTION IN CAMEROON THROUGH THE USE OF LOCAL EXPERTISE AND THE DEVELOPMENT OF NATIONAL CAPACITIES

Project Objective	Objective level Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS reference*
Increase national capacity to identify, manage and dispose of existing PCBs in Cameroon in an environmentally responsible manner in order to meet Stockholm Convention country commitments and minimize the risks to the population and the environment.	<p>Establishment of the in-the-country capacity to deal with PCB contaminated electrical equipment and other related material;</p> <p>Functioning import control system including: labeling using GHS; updating of PCB database; and PCB-free certificate.</p> <p>Trained cadre of individuals managing full life cycle of PCBs.</p> <p>Analytical laboratory equipped with staff and infrastructure for PCB analysis.</p> <p>Amount of PCB contaminated materials exported for treatment,</p>	<p>Regulatory review completed as part of NIP process</p> <p>Preliminary inventory complete, 3781 pieces of equipment identified but yet to be tested.</p> <p>NEG established comprising of local environment, health, customs staff, and members of the private sector</p> <p>Some awareness materials</p>	<p><u>Year 1:</u> Trained cadre of individuals managing full life-cycle of PCBs</p> <p><u>Year 2:</u> Analytical laboratory equipped with staff and infrastructure for PCB analysis.</p> <p><u>Year 3:</u> Functioning import control system.</p> <p><u>Year 4:</u> >200 vulnerable people attend sensitization workshops, and initiate actions to protect themselves from PCBs</p> <p><u>Year 5:</u> Risk to human health and the environment mitigated through export and disposal of 200 tons of contaminated oils, and decontamination of 1600</p>	<p>Report</p> <p>Report</p> <p>Reports</p> <p>Reports</p> <p>Reports</p>	<p><u>Assumptions:</u> Enduring and effective Government support in base line funding;</p> <p>Mix of PCB wastes allows for use of a locally implemented solution for PCB oils and transformer carcasses;</p> <p><u>Risks:</u> Holders of PCB-contaminated mineral oil from electrical equipment as well as related wastes are not willing to participate in the project</p> <p>Co-funding from the private sector insufficient</p>	EAA, EAB, EAC

	and amount of equipment reclaimed or disposed of locally. Vulnerable communities informed of PCB risks and taking actions to protect themselves	developed for: Regional Approach to Environmentally Sound Management of PCB Liquid Wastes and Transformers and Capacitors Containing PCBs	tons of equipment			
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Component 1: Strengthening the legal, administrative and regulatory framework for the sound management of PCBs in Cameroon

Component 1 Outcome	Outcome Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	MTS Expected Accomplishment
Shift in regulatory framework allows Cameroon to facilitate the implementation of the Stockholm Convention	Legal framework includes all the impacts of PCBs: health, environment, worker protection; and traceability system. Functioning import control system including: labeling using GHS; updating of PCB database; and PCB-free certificate.	Regulatory review completed as part of NIP process NEG established comprising of local environment, health, customs staff, and members of the	<u>Year 1:</u> Regulatory framework available for adoption <u>Year 3:</u> Functioning import control system	Publication Report	<u>Assumptions:</u> Government of Cameroon willing to submit the draft regulatory framework for adoption The national expert group includes representatives of all stakeholders Customs officer available for training and inspection duties <u>Risks:</u> Key member of national expert group unavailable for training Inspections not	EAA

		private sector No import control system			completed as inspectors are busy with other duties	
Component 1 Outputs	Output Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	PoW Output Reference Number
1.1: Regulatory framework upgraded /developed and disseminated includes Stockholm Convention targets and guidelines for the environmentally sound management (ESM) of PCBs.	No. of guidelines and PCB regulation for the ESM of PCBs No. of stakeholders taken into account. No. of stakeholders involved in the PCB life cycle taken into account	Regulatory review completed as part of NIP process	<u>Year 1:</u> Regulatory framework drafted 3 guidelines on ESM of PCB waste developed	Draft publication	<u>Assumptions:</u> Government of Cameroon willing to adopt draft regulatory framework All phases of PCB lifecycle covered in updated regulatory framework <u>Risks:</u> Delays in national adoption of revised regulatory framework	5B4, " <i>Scientific and technical services, delivered through multi-stakeholder partnerships, to build the capacity of Governments, the private sector and civil society to take action on the risks posed by chemicals, including those listed in the relevant multilateral environmental agreements, mercury, and lead and cadmium, as well as on unsound management practices</i> "
1.2: Training of National Expert Group, on new regulatory framework for PCBs	No. of National Expert Group members No. of people trained from expert group (disaggregated by sex)	NEG established comprising of local environment, health, customs staff, and members of the private sector	<u>Year 1:</u> 15 NEG members trained on regulatory framework	Report	<u>Assumptions:</u> The national expert group includes representatives of all stakeholders <u>Risks:</u> Key member of national expert group unavailable for training	5B4

1.3 Import and export control system (including procurement and sale) for transformers, capacitors and dielectric oil established, and enforced by Customs authorities	Import and export control system developed No. of customs officers/workers trained (disaggregated by sex); No. of inspections of classified facilities completed by trained personnel.	No import or export control system other than for Basel Convention controlled waste.	<u>Year 1:</u> Import control system developed. <u>Year 2:</u> 180 Customs officers/workers trained <u>Year 3:</u> 20 inspections <u>Year 4:</u> 40 inspections <u>Year 5:</u> 50 inspections	Report Report Report Report Report	<u>Assumptions:</u> Customs officer available for training and inspection duties <u>Risks:</u> Inspections not completed as inspectors are busy with other duties Changes in personnel, means loss of trained Customs workers	5B4
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Component 2: Development of national capacity for the environmentally sound management and disposal of PCBs

Component 2 Outcome	Outcome Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	MTS Expected Accomplishment
Technical and administrative capacities for the sound management of PCBs reinforced and allows Cameroon to develop and implement a sustainable and participatory PCB	Trained cadre of individuals managing full life cycle of PCBs. Analytical laboratory equipped with staff and infrastructure for PCB analysis. Quantification of the reduction of carbon emissions, and therefore the climate change mitigation benefits,	Preliminary inventory complete No management plans in place, nor studies on potential reductions of carbon emissions. Preliminary review of	<u>Year 1:</u> Trained cadre of individuals managing full life-cycle of PCBs <u>Year 2:</u> Analytical laboratory equipped with staff and infrastructure for PCB analysis. <u>Year 3:</u> Study available quantifying the reduction of carbon emissions	Report Report Report	<u>Assumptions:</u> PCB Holders have capacity to meaningfully contribute to feasibility assessments and management plans Laboratory staff and NEG members available for training MINEPDED effectively coordinate the National Expert Group <u>Risks:</u> Costs of required laboratory upgrades are greater than the	EAA

management /elimination plan decreasing the risk to humans and the environment	through replacement of PCBs, and recovery of metals.	laboratories. Discussions and consultations with ENSAI.			available budget MINEPDED fail to effectively coordinate the National Expert Group	
Component 2 Outputs	Output Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	PoW Output Reference Number
2.1 Information system housing inventory and PCB management data operationalized and includes GIS.	Database covering technical and analytical data is operational; No. of persons trained in the management of the database (disaggregated by sex) No. of competent authorities and PCB holders using it.	Preliminary inventory complete	<u>Year 1:</u> Database established 4 individuals trained in database (developer, administrator, designers, topographer) 8 PCB holders using database	Database functional Report	<u>Assumptions:</u> Data is available to be entered Required equipment is procured to develop and maintain database <u>Risks:</u> Database, once established is not updated	5B4
2.2 Feasibility of economic, or market-based instruments to promote ESM and disposal for PCBs evaluated, and included in the PCB management	No. of management plans established by PCB holders (covering the devices kept active and brought into line and those eliminated and replaced); No. of device level energy efficiency	No management plans in place, nor studies on potential reductions of carbon emissions.	<u>Year 2:</u> 8 PCB holders develop management plans 50 device level energy-efficiency calculations <u>Year 3:</u> Study on reduction of carbon emissions.	Management plan Report Report	<u>Assumptions:</u> Holders have capacity to meaningfully contribute to feasibility assessments and management plans <u>Risks:</u> Holders do not complete management plans	5B4

plan	<p>calculations (load losses - to calculate the impact of replacing PCBs CO2 emissions in power plants).</p> <p>Study on reduction of carbon emissions through replacement of PCBs, and recovery of metals</p>					
2.3 Analytical and laboratory capacity strengthened through equipment upgrades, staff training and intercalibration studies at ENSAI	<p>Gap analysis completed;</p> <p>Action plan completed;</p> <p>Procurement of new equipment;</p> <p>No. of personnel trained in analysis of PCB (disaggregated by sex);</p>	<p>Preliminary review of laboratories. Discussions and consultations with ENSAI.</p>	<p><u>Year 1:</u> Gap analysis and action complete</p> <p><u>Year 2:</u> Laboratory upgraded</p> <p><u>Year 3:</u> 10 laboratory personal trained</p> <p>Laboratory accredited by MINEPDED</p>	<p>Report</p> <p>Report</p> <p>Report</p>	<p><u>Assumptions:</u> Staff available for training</p> <p><u>Risks:</u> Costs of required laboratory upgrades are greater than the available budget</p>	5B4
2.4 National Expert Group formed and trained in all aspects of PCB life cycle	<p>No of NEG members trained in: PCB assessment; analytical aspects; development of action plans; technical aspects such as technical dismantling of PCB-containing equipment; transport of equipment; and storage of equipment; administrative procedures</p>	<p>Members of the NEG nominated</p>	<p><u>Year 1:</u> 7 training sessions of NEG members</p>	<p>Training reports</p>	<p><u>Assumptions:</u> Members of the National Expert Group are available for training</p> <p>MINEPDED effectively coordinate the National Expert Group</p> <p><u>Risks:</u> Members of the National Expert Group use their training an skills to improve management of PCBs</p>	5B4

	for PCB management (including routine transformer management/maintenance at utility level); identification, assessment and management of contaminated sites; and PCB elimination, among other aspects of PCB management (disaggregated by sex).				Cameroon MINEPDED fail to effectively coordinate the National Expert Group	
2.5 Local guidelines and standards developed for the ESM of PCBs (oil and contaminated equipment)	No. of guidelines developed and endorsed by National Expert Group	No standards or guidelines in place	<u>Year 2:</u> 5 guidelines developed on: dismantling of PCB-containing equipment; transport of equipment; storage of equipment; identification, assessment and management of contaminated sites; and PCB elimination.	Reports	<u>Assumptions:</u> That utilities will be willing to cooperate on the ESM of in-service PCB contaminated equipment. <u>Risks:</u> Guidelines and standards are available, but not adhered to.	5B4
Component 3: Environmentally sound disposal of PCBs						
Component 3 Outcome	Outcome Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	MTS Expected Accomplishment
Sound management and elimination	Risk to human health and the environment mitigated through export	Preliminary inventory complete, 3781	<u>Year 5:</u> Risk to human health and the environment mitigated	Report	<u>Assumptions:</u> Laboratory is upgraded to facilitate analysis of samples for PCBs	EAC

of contaminated oils and equipment drastically reduce the risk of PCB contamination in the population and the environment	and disposal of contaminated oils, and decontamination of equipment	pieces of equipment identified but yet to be tested.	through export and disposal of 200 tons of contaminated oils, and decontamination of 1600 tons of equipment		<u>Risks:</u> Access to sites not provided as site is on privately owned land Exposure to PCBs of communities residing close to sites. Laboratory is not upgraded and PCB analysis is not available in Cameroon	
Component 3 Outputs	Output Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	PoW Output Reference Number
3.1 National PCB inventory, including contaminated site assessments, improved	No of in service equipment analysed; No. of out of service equipment analysed No. of potentially contaminated sites assessed by NEG, and management measures instituted No. of containment measures taken to reduce releases and transfers of PCBs	Preliminary inventory complete, 3781 pieces of equipment identified but yet to be tested.	<u>Year 2:</u> National PCB inventory complete >10 potentially contaminated sites assessed by NEG <u>Year 3:</u> >10 containment/management measures undertaken to reduce releases from contaminated sites	Report Report	<u>Assumptions:</u> Laboratory is upgraded to facilitate analysis of samples for PCBs <u>Risks:</u> Access to sites not provided as site is on privately owned land Exposure to PCBs of communities residing close to sites. Laboratory is not upgraded and PCB analysis is not available in Cameroon	5B4
3.2 PCB contaminated	No. of PCB oil and equipment recorded on	290 transformers (approx. 200	<u>Year 3:</u> 200 tons of PCB equipment recorded in manifest.	Manifest, Report	<u>Assumptions:</u> Procedures, inline with international best	5B4

oil and contaminated equipment securely packed and transported to centralized collection locations	PCB manifest; No. of chain-of-custody reports for PCB contaminated oil and equipment transported to centralised store.	tons) located and confirmed to contain PCB contaminated oil	<10 chain-of-custody reports from in-country centralization transport procedures.	Chain-of-custody Report	practice are followed for all transport activities <u>Risks:</u> Accident, causing spillage during transport	
3.3 Export of PCB contaminated equipment and oils in accordance with Basel Convention	No. of tons of PCB contaminated equipment exported; No. of tons of PCB contaminated oil exported;	290 transformers (approx. 200 tons) confirmed to contain PCB contaminated oil.	<u>Year 5:</u> 200 tons of PCB contaminated oils exported for disposal.	Transport and destruction report	<u>Assumptions:</u> That the amount of PCB equipment and oils estimated are accurate. <u>Risks:</u>	5B4
3.4 Transformers are tested, and those deemed contaminated are decontaminated and recommissioned for use; and PCB contaminated oil dechlorinated.	Sampling protocols for in-service and decommissioned transformers developed. No. of in-service, disused transformers, and bulk oil stores tested; No. of pieces of waste from dismantled transformers analysed; No. of pieces of contaminated apparatus between 50 and 500 ppm	3781 pieces of equipment identified but yet to be tested	<u>Year 2:</u> Sampling protocol in place <u>Year 3:</u> >4000 transformers tested <u>Year 5:</u> 1600 tons of equipment decontaminated and recommissioned for use; PCB contaminated oil dechlorinated.	Report Report Report	<u>Assumptions:</u> Owners of PCB-contaminated equipment grant access to the contractor for the analysis of their equipment <u>Risks:</u> Transformer holders not willing to grant access to their facilities for the identification of target transformers.	5B4

	decontaminated by retrofilling and reused; No. of t PCB contaminated oil dechlorinated.					
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Component 4: Raise awareness across Cameroon of the importance of the sound management of PCBs

Component 4 Outcome	Outcome Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	MTS Expected Accomplishment
Key stakeholders and the broader community well informed and included in the sound management of PCB in Cameroon allows to better understand the problem and to take actions to protect the population and the environment	Needs assessment identifies awareness needs Vulnerable communities informed of PCB risks and taking actions to protect themselves	Some awareness materials developed for: Regional Approach to Environmentally Sound Management of PCB Liquid Wastes and Transformers and Capacitors Containing PCBs CREPD and AFAIRD identified as interested and qualified NGOs, to assist in	<u>Year 4:</u> >200 vulnerable people attend sensitization workshops, and initiate actions to protect themselves from PCBs	Report	<u>Assumptions:</u> Needs assessment adequately captures needs of all vulnerable groups CREPD remains interested in assisting with project execution. Local communities and tribes interested in attending sensitization/information events; <u>Risks:</u> Suitable and capable NGO cannot be identified. More than 10 target groups are identified. Lack of understanding by at risk communities	EAB, EAC

Component 4 Outputs	Output Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	PoW Output Reference Number
4.1 Development of national awareness materials (including audio visual materials)	Needs assessment to identifying targets and awareness needs Gendered exposures to PCB and awareness needs of men and women are mapped out No. of awareness raising materials suitable for all identified target audiences developed	Some awareness materials developed for: Regional Approach to Environmentally Sound Management of PCB Liquid Wastes and Transformers and Capacitors Containing PCBs	<u>Year 1:</u> Needs assessment complete <u>Year 2:</u> 10 separate pieces of awareness raising material developed for identified target audiences	Report Awareness materials report	<u>Assumptions:</u> Needs assessment adequately captures needs of all vulnerable groups <u>Risks:</u> More than 10 target groups are identified.	5B4
4.2 Identification of NGOs to assist with dissemination of information and communication materials	No. of NGOs identified to assist in the development and dissemination of communication plans across Cameroon.	CREPD and AFAIRD identified as interested and qualified NGOs, to assist in project execution.	<u>Year 1:</u> 4 NGOs identified to assist with awareness activities	Report	<u>Assumptions:</u> CREPD and other NGO remains interested in assisting with project execution. <u>Risks:</u> Suitable and capable NGO cannot be identified. NGO does not have experience in PCB management.	5B4
4.3 National PCB awareness strategy implemented	No. of sensitization events conducted among circles identified in the	Some awareness activities undertaken during NIP development,	<u>Year 2:</u> 20 sensitization events complete <u>Year 3:</u> 10 project	Report Report	<u>Assumptions:</u> Local communities and tribes interested in attending sensitization/information events;	5B4

<p>and includes civil society, local communities and tribes.</p>	<p>needs assessment</p> <p>No. of sensitization events with specific messages to men and women</p> <p>No. of workshops conducted.</p> <p>No. of workshop participants (disaggregated by sex)</p>	<p>but not comprehensive</p>	<p>workshops conducted;</p> <p><u>Year 3</u>: 100 people have participated in project workshops</p> <p><u>Year 4</u>: 40 sensitization events held</p>	<p>Report</p> <p>Report</p>	<p><u>Risks</u>: Lack of understanding by at risk communities</p>	
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ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

In response to STAP screening of the Project Identification Form 1 October 2013, STAP comments:

- a) “The STAP hopes that the eventual project document will also consider all of the elements that constitute environmentally sound disposal. The STAP Advisory document on POPs Disposal Technology in GEF projects focuses on what exactly constitutes environmentally sound disposal of POPs, and what technologies can achieve it.”

The STAP Advisory document on POPs Disposal Technology in GEF was consulted during project development. The option of using the Figuel cement kiln for PCB contaminated oil disposal was considered in light of STAP advice on the topic. It is noted that the use of cement kilns for the treatment of PCB wastes is “generally limited to relatively modern rotary kiln units with overall BAT/BET environmental performance equipped with appropriate POPs waste handling/injection infrastructure as well as monitoring capacity,” and that application of such technology requires case-by-case assessment and performance demonstration. It also notes the importance of local partner capability, including relevant technical/operational experience and financial capacity, as well as the need for backstopping in the form of completion guarantees. In light of this advice, the project development team further consulted GEFSEC. Upon consultations it was agreed that the use of Figuel was not suitable. Instead the PCB contaminated oil (<500ppm) will be dechlorinated.

- b) “A query one might pose is if activity 2.6 (development of local guidelines and standards for environmentally sound management of PCBs) not be steered by the National Expert Group? Also this exercise would benefit from not only linking with other UNEP-run projects, but also considering the lessons learned from other similar projects in the GEF portfolio overall, and perhaps by similar work funded by other organizations in the region.”

The project document now notes these guidelines and standards are to be steered by the National Expert Group. In addition, as part of preparation of this project document, the results of the mid-term review of the Demonstration of a Regional Approach to Environmentally Sound Management of PCB Liquid Wastes and Transformers and Capacitors Containing PCBs were considered. In addition, to facilitate continued learning from this important regional initiative, the pool of experts involved in this project will be invited to contribute to the execution of this project, and representatives of the EA will also attend the West African project’s steering committee meeting.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS⁶

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

PPG Grant Approved at PIF: \$56,000			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
National coordinator	5,000	5,000	
Technical assistant (local)	5,000	5,000	
Technical assistant (international)	25,000	25,000	
National coordination meetings	16,000	16,000	
National coordination meetings (meetings with individual stakeholders)	5,000	5,000	
Total	56,000	56,000	0

⁶ If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

ANNEX E: CONSULTANTS TO BE HIRED FOR THE PROJECT USING GEF/LDCF/SCCF RESOURCES

<i>Position Titles</i>	<i>\$/ Person Week*</i>	<i>Estimated Person Weeks**</i>	<i>Tasks To Be Performed</i>
For Technical Assistance			
International			
Legal and policy	2500	20	Review of legislation and drafting of new legislation and regulations
Import control system (international)	2500	32	Consults nationally on the development of an import control system, develops system, and trains staff on the implementation and execution of the system.
Import control system (regional)	1,500	33	Supports international consultant in the development and implementation of the import control system and training of relevant national staff
PCB EIA and EMP	2500	32	(national and facility level, and addressing economic instruments)
Market-based instruments consultant	2500	24	Responsible for consultation and development of a feasibility study on market-based instruments, the results of which will be included in the disposal plan
Contaminated sites	2500	20	Assesses contaminated sites in consultation with facility owners (coordinated by NEG).
Awareness needs assessment and implementation	2500	10.2	Drafts needs assessment regarding PCB awareness and oversees strategy implementation
Justification for travel, if any: International consultants will be required to visit Cameroon. Local consultants will be required to travel within Cameroon. No international travel will be required for local consultants.			

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

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

N/A

ANNEX F: GEF BUDGET AND CO-FINANCE BUDGET

(see attached excel spreadsheet)

ANNEX G: M&E BUDGET AND WORKPLAN

M&E activity	Purpose	Responsible Party	Budget (US\$)*1	Time-frame
Inception workshop	Review of project activities, outputs and intended outcomes; detailed work planning	MINEPDED	20,000	Within two months of project start (back-to-back with technical meeting)
Inception report	Provides implementation plan for progress monitoring	Project coordinator	Included in EA fee	Immediately following Inception Workshop
Ongoing project monitoring	Ongoing monitoring of project according to M&E plan	Project coordinator	30,000	Throughout the project
Project Review by PSC	Assesses progress, effectiveness of operations and technical outputs; Recommends adaptation where necessary and confirms implementation plan.	MINEPDED	30,000	Month 12 (TC) and 24
MTR/MTE	This will be organized by UNEP Task Manager/UNEP Evaluation Office	UNEP TM	25,000	Month 12
Terminal report	Reviews effectiveness against implementation plan Highlights technical outputs Identifies lessons learned and likely design approaches for future projects, assesses likelihood of achieving design outcomes	MINEPDED	Included in EA fee	At the end of project implementation
Independent Terminal evaluation	This will be organized by UNEP Task Manager/UNEP Evaluation Office	UNEP TM	25,000	At end of project implementation
Independent Financial Audit	Reviews use of project funds against budget and assesses probity of expenditure and transactions	MINEPDED	25,000	At the end of project implementation
Total indicative Monitoring &Evaluation cost			155,000	

ANNEX H: PROJECT IMPLEMENTATION ARRANGEMENTS

DIVISION OF RESPONSIBILITIES:

Implementing Agency (IA): This project will be implemented by UNEP. UNEP will be responsible for the overall project supervision, overseeing the project progress through the monitoring and evaluation of project activities and progress reports. It will report the project implementing progress to GEF and will take part in the Project Steering Committee (PSC). UNEP will closely collaborate with the EA and provide it with administrative support in the implementation of the project.

Executing Agency (EA): The Government of Cameroon, through MINEPDED, Department of Standards and Control, will execute the project. As EA, MINEPDED's key roles include:

- Establishing and housing the project implementation unit (PIU)
- Acting as Secretariat for the Project Steering Committee (PSC)
- Oversee that the project runs according to the agreed workplan, budget and reporting tasks

PIU: The PIU will be staffed by a Project Manager and Project Assistant. The role of the PIU is to:

- Ensure Project execution (all technical aspects of project implementation)
- Ensure project governance and oversight of the financial resources from GEF investment
- Provide staff time and expertise in guiding and advancing the project
- Share all achievements and project products/outputs with stakeholders
- Supervise the consultants and project partner organizations to deliver against their contracts and in time
- Organize the PSC meetings and serve as its secretariat
- Manage and implement the project results and output level M&E framework, to evaluate project performance
- Manage the flow of information from the field and producing periodic monitoring reports.

PSC: The PSC's membership includes IA, EA, NEG members, utility representatives, civil society representatives. The role of the PSC is to:

- Oversee the GEF Project
- Provide overall guidance and ensure coordination between all parties
- Provide overall supervision for project implementation
- Approve the annual work plan and budget
- Oversee the implementation of corrective actions
- Enhance synergy between the GEF project and other ongoing initiatives

DESCRIBE THE INTERNAL STRUCTURE

The PIU will be housed at and be supported by the EA (MINEPDED, Department of Standards and Control). The PIU is responsible for the daily implementation of the project, including all reporting and monitoring and evaluation duties, as well as the follow-up of all contractual tasks. The PIU liaises with all project partners and serves as Secretariat to the PSC.

DESCRIBE THE EXTERNAL STRUCTURE

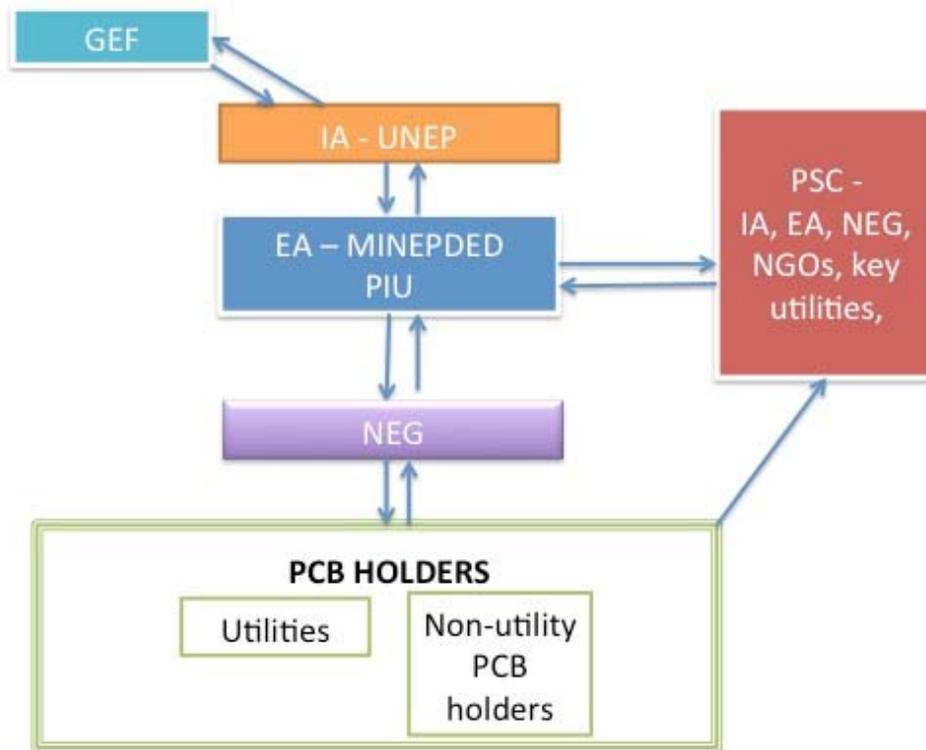
The PSC, chaired by the Executing Agency, is in charge of the project oversight and overall guidance. It will meet at twice per year, or according to the project's needs.

DESCRIBE THE OVERSIGHT MECHANISM

The main oversight body for the project is its PSC, comprised of the IA, the EA and representatives of all main partners and stakeholder groups. Further monitoring and evaluation procedures of the project, including regular reporting duties, are detailed in Annex G. The EA can undertake field visits at any stage and is tasked to organize the mid-term review and terminal evaluation and audit of the project.

PROVIDE THE ORGANIGRAM DIAGRAM

As is shown in the graphical sketch below, the EA makes agreements with all partners in the project. By implementing the agreements, the partners report back to the EA and interact among themselves according to project activities.



ANNEX I - KEY DELIVERABLES AND BENCHMARKS

Key deliverables	Time line (months after pro
1. Inception meeting report	4
2. National Expert Group training reports	6, 10, 14
3. Customs and Environment Controllers training report	16
4. PCB management plans (utility level)	25
5. Laboratory upgraded	26
6. Guidelines for ESM of PCBs	16
7. >10 contaminated site assessment reports	31
8. National PCB inventory	35
9. PCB oil repackaging report	41
10. Manifests, transport and shipping documents	51
11. Published sampling protocol for in-service transformers	42
12. Facility level analysis reports from in-service transformer samples	45
13. Transformer testing report	46
14. Awareness raising materials	10
15. Communications and awareness implementation plan	18
16. Progress reports	7,13,19,25,31,37,43,49,5
17. Lessons learned report	60

ANNEX J – POPS TRACKING TOOL

Attached in Excel spreadsheet

ANNEX K – OFP ENDORSEMENT LETTER

(see separate file)

ANNEX L: CO-FINANCING COMMITMENT LETTERS FROM PROJECT PARTNERS

(see separate file)

ANNEX M: ENVIRONMENTAL AND SOCIAL SAFEGUARDS CHECKLIST

As part of the GEFs evolving Fiduciary Standards that Implementing Agencies have to address ‘Environmental and Social Safeguards’. To fill this checklist:

- STEP 1: Initially assess E&S Safeguards as part of PIF development. The checklist is to be submitted for the CRC.
- STEP 2 : Check list is reviewed during PPG project preparation phase and updated as required
- STEP 3 : Final check list submitted for PRC showing what activities are being undertaken to address issues identified

UNEP/GEF Environmental and Social Safeguards Checklist

<i>Project Title:</i>	PCB Reduction in Cameroon through the use of local expertise and the development of national capacities		
<i>GEF project ID and UNEP ID/IMIS Number</i>		<i>Version of checklist</i>	<i>1</i>
<i>Project status (preparation, implementation, MTE/MTR, TE)</i>	<i>Preparation</i>	<i>Date of this version:</i>	<i>10 February, 2015</i>
<i>Checklist prepared by (Name, Title, and Institution)</i>	<i>Melanie Ashton, Consultant, Africa Institute</i>		

Section A: Project location

If negative impact is identified or anticipated the Comment/Explanation field needs to include: Project stage for addressing the issue; Responsibility for addressing the issue; Budget implications, and other comments.

<i>- Is the project area in or close to -</i>	<i>Yes/No/N.A.</i>	<i>Comment/explanation</i>
<i>- densely populated area?</i>		<i>Some electrical facilities are in urban areas. Transformer processing activities will be completed according to best practice, as outlined in the EMP.</i>
<i>- cultural heritage site</i>	<i>No</i>	
<i>- protected area</i>	<i>No</i>	
<i>- wetland</i>	<i>No</i>	
<i>- mangrove</i>	<i>No</i>	
<i>- estuarine</i>	<i>No</i>	
<i>- buffer zone of protected area</i>	<i>No</i>	
<i>- special area for protection of biodiversity</i>	<i>No</i>	
<i>- Will project require temporary or permanent support facilities</i>	<i>Yes</i>	<i>Temporary storage facilities will be required for transformers, for draining, and repackaging. These facilities will be constructed to international standard, including with appropriate bunding to prevent run-off.</i>

Section B: Environmental impacts

If negative impact is identified or anticipated the Comment/Explanation field needs to include: Project stage for addressing the issue; Responsibility for addressing the issue; Budget implications, and other comments.

	<i>Yes/ No/ N.A.</i>	<i>Comment/explanation</i>
Are ecosystems related to project fragile or degraded	<i>N.A</i>	
Will project cause any loss of precious ecology, ecological, and economic functions due to construction of infrastructure?	<i>No</i>	
- Will project cause impairment of ecological opportunities	<i>No</i>	
- Will project cause increase in peak and flood flows? (including from temporary or permanent waste waters)	<i>No</i>	
- Will project cause soil erosion and siltation?	<i>No</i>	
- Will project cause increased waste production?	<i>No</i>	
- Will project cause threat to local ecosystems due	<i>No</i>	
- Will project cause Greenhouse Gas Emissions?	<i>No</i>	
- Other environmental issues, e.g. noise and traffic	<i>No</i>	

Section C: Social impacts

If negative impact is identified or anticipated the Comment/Explanation field needs to include: Project stage for addressing the issue; Responsibility for addressing the issue; Budget implications, and other comments.

	<i>Yes/ No/ N.A.</i>	<i>Comment/explanation</i>
- Does the project respect internationally proclaimed human rights including dignity, cultural property and uniqueness and rights of indigenous people?	<i>NA</i>	
- Are property rights on resources such as land tenure recognized by the existing laws in affected countries?	<i>Yes</i>	
- Will the project cause social problems and conflicts related to land tenure and access to resources?	<i>No</i>	
- Does the project incorporate measures to allow affected stakeholders' information and consultation?	<i>Yes</i>	<i>The project includes comprehensive activities to engage stakeholders.</i>
- Will the project affect the state of the targeted country's (-ies') institutional context?	<i>No</i>	
- Will the project cause change to beneficial uses of land or resources? (incl. loss of downstream beneficial uses (water supply or fisheries)?	<i>No</i>	
- Will the project cause technology or land use modification that may change present social and economic activities?	<i>No</i>	
- Will the project cause dislocation or involuntary resettlement of people?	<i>No</i>	
- Will the project cause uncontrolled in-migration (short- and long-term) with opening of roads to areas and possible overloading of social infrastructure?	<i>No</i>	
- Will the project cause increased local or regional unemployment?	<i>No</i>	

- Does the project include measures to avoid forced or child labour?	No	
- Does the project include measures to ensure a safe and healthy working environment for workers employed as part of the project?	Yes	<i>Transformer operators are currently operating equipment containing PCBs and they use PPE. This project will provide training to ensure safety of operators.</i>
- Will the project cause impairment of recreational opportunities? - Will the project cause impairment of indigenous people's livelihoods or belief systems?	No	
- Will the project cause disproportionate impact to women or other disadvantaged or vulnerable groups?	No	
- Will the project involve and or be complicit in the alteration, damage or removal of any critical cultural heritage?	No	
- Does the project include measures to avoid corruption?	No	
<i>Only if it can be carefully justified that any negative impact from the project can be avoided or mitigated satisfactorily both in the short and long-term, can the project go ahead.</i>		

Section D: Other considerations

If negative impact is identified or anticipated the Comment/Explanation field needs to include: Project stage for addressing the issue; Responsibility for addressing the issue; Budget implications, and other comments.

	<i>Yes/No/N.A.</i>	<i>Comment/explanation</i>
- Does national regulation in affected country (-ies) require EIA and/or ESIA for this type of activity?	No	
- Is there national capacity to ensure a sound implementation of EIA and/or SIA requirements present in affected country (-ies)?	No	
- Is the project addressing issues, which are already addressed by other alternative approaches and projects?	No	
- Will the project components generate or contribute to cumulative or long-term environmental or social impacts?	Yes	<i>Prevention of PCB release to the environment</i>
- Is it possible to isolate the impact from this project to monitor E&S impact?	No	

ANNEX N: ACRONYMS AND ABBREVIATIONS

ADC	Cameroon Airport (Aéroport du Cameroun)
AES	National Electricity Society (Société Nationale d'Electricité)
AFAIRD	Association of Honest Africa Women for the Research and Development
ALUCAM	Aluminium Company (Compagnie camerounaise d'aluminium)
ASECNA	Agency for the Security of Aerial Traffic in Africa and Madagascar (Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar)
BAT/BEP	Best Available Technology/Best Environmental Practice
CAMTEL	Cameroon Telecommunications
CEO	Chief Executive Officer
CIMENCAM	Cameroon Cement Industry (Cimenteries du Cameroun)
CO2	Carbon Dioxide
CREPD	Research and Education Centre for Development
CSO	Civil Society Organization
DTIE	Division of Technology Industry and Economics
E&S	Environmental and Social
EA	Executing Agency
EIA	Environmental Impact Assessment
EMPs	Environmental Management Plan (')
ENEO	Energy of Cameroon
ENSAI	Graduate Institute of Agro-Industrial Sciences (Ecole Nationale Supérieure des Sciences Agro-industrielles)
EO	Evaluation Officer
ESM	Environmentally Sound Management
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
GEFTF	Global Environment Facility Trust Fund

GICAM	Employers Association (Groupement Inter-Patronal du Cameroun)
GIS	Geographic Information System
HQ	Headquarters
HYDRAC	Hydrocarbons-Analysis-Controls (Hydrocarbures-Analyses-Contrôles)
IA	Implementing Agency
IPCC	Intergovernmental Panel on Climate Change
LDCF	Least Development Countries Fund
M&E	Monitoring and Evaluation
MAP	Mediterranean Action Plan
MEAs	Multilateral Environmental Agreements
MINEPDED	Ministry of Environment (Ministère de l'Environnement, de la Protection de la Nature et du Développement Durable)
MOU	Memorandum of Understanding
MTE	Mid-Term Evaluation
MTR	Mid-Term Review
NAPA	National Adaptation Programme of Action
NAPs	National Action Plans
NBSAPs	National Biodiversity Strategies and Action Plans
NCSA	National Capacity Self- Assessment
NEG	National Expert Group
NGO	Nongovernmental organization
NIP	National implementation plan
NPFE	National Portfolio Formulation Exercise
NPIF	Nagoya Protocol Implementation Fund
OFP	Official Focal Point (GEF)
PAN ENVIRO	Pesticides Action Network
PCB	Polychlorinated biphenyl

PCDD	Polychlorinated Dibenzo-p-dioxins
PCDF	Dibenzofurans
PIF	Project Information Form
PIF	project Identification Form
PIR	Project Implementation Review
PIU	Project Implementation Unit
POPs	Persistent organic pollutants
PPE	Personnel Protective Equipment
PPG	Project Preparation Grant
PPP	Public Private Partnership
PRSPs	Poverty Reduction Strategy Papers
PSC	Project Steering Committee
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SADC	Southern Africa Development Community
SAICM	Strategic Approach to International Chemicals Management
SC	Stockholm Convention on Persistent Organic Pollutants
SCCF	Special Climate Change Fund
SCP/RAC	Sustainable Consumption and Production/Regional Activity Centre
SFM	Sustainable Forest Management
SGP	Small-Grants Programme
SONARA	National Society of Refining (Société National de Raffinerie)
STAP	Scientific and Technical Advisory Group
TE	Terminal Evaluation
TM	Task Manager
TNA	Technology Needs Assessment
UN	United Nations

UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme

Annex O: Agency Responses to GEF Council Comments Made at PIF Approval

Cameroon: PCB Reduction in Cameroon Through The Use Of Local Expertise and the Development of National Capacities

Comments by Germany

Germany approves the following PIF in the work program but asks that the following comments are taken into account:

- Germany appreciates the technical approach, which follows the NIP. Nevertheless, the following comments should be taken into consideration.

Component 2 (Development of national capacity for the environmentally sound management and disposal of PCBs) appears to have a very low budgetary estimate (in combination of GEF and co-financing); the reason hereby probably is the absence of a technical element (remediation) from this component. Attention has to be paid though to the creation of sustainable structures. Especially laboratories, functionality and the usefulness to testing on other hazardous chemicals (beyond PCBs) in the future is paramount. Funding also has to be secured for the National Expert Group to be available after the project period.

Agency Response: *The project will work through the national electrical generation and distribution utilities to develop a systematic program for testing of transformers at the companies expense. Experience has shown that investment in laboratory capacity through relatively small projects such as this is not sustainable on equipment and personnel grounds. It is noted that the Expert Group needs to be sustainable and this will be achieved as part of the project mainstreaming activities to install the group within existing government structures.*

It would be desirable to have clarity of the intention of exporting the PCB contaminated elements (component 3), i.e. whether that will be to regional centers given the previous project in West Africa (preferable) or to industrialized countries. While the former option would be desirable for the future, these facilities would have to be tested.

Agency Response: *The Regional West Africa Project has had to shift the project plan to export of wastes as the option for a regional facility for treatment was cancelled following a change of government and associated shift in policy in the target host country. All waste above 2000ppm PCB will therefore be exported to an industrialised country for treatment.*

The planned information exchange with the existing West African Regional Project is commendable for its effort to use synergies.

Comments by United States

- All four components of the project should ensure that due consideration is given to labor related issues in the handling of PCBs. The regulatory review should include a review of labor regulations on minimum age, wage and hour and occupational safety and health.

Agency Response: *The project will ensure highest levels of Health, Safety and Environment are adopted for all aspects where potential for exposure to PCB is identified as a risk. Work safety is a paramount importance to the project and all*

work involving potential exposure to PCB will be managed in accordance with a risk assessment to be performed by the appointed international contractor responsible for project supervision. In addition, all personnel will be provided training in the use of personal protective equipment by trained personnel and a trained international supervisor will be on site at all times to ensure compliance with HSE requirements. Occupational safety requirements will be addressed and where feasible adopted at national level for future operations.

Capacity building, training and awareness raising should include information on workplace safety and health, reaching workers who handle PCBs and their disposal.

Agency Response: *All workers employed to support the project will be provided training on the risks of exposure to PCB and the steps which need to be taken to avoid exposure.*

The project should consider partnering with international organizations, such as the International Labor Organization (ILO).

Agency Response: *All project operations will be undertaken in compliance with international best practice for occupational safety based on ILO guidance and minimum standards for worker safety.*

- We are pleased to see the Ministry of Labor and Social Security identified as a key stakeholder to be consulted. The project document is unclear as to whether the identified stakeholders will also be considered for the National Expert Group. Consideration should be given to labor experts sitting on the National Expert Group.

Agency Response: *The composition of the Nation Expert Group will be confirmed at project inception and due note will be made of the above comment.*

- Key stakeholders of labor ministries may include representatives of organized labor and employer organizations, which aren't explicitly mentioned on the PIF.

Agency Response: *Representatives from workers groups, employers organisations and trade unions will be included in the detailed project stakeholder analysis and be targeted as part of the project communications and awareness strategy.*

APPENDIX 1. SUPERVISION PLAN

See budget spreadsheet

APPENDIX 2: PROCUREMENT PLAN

To be completed at project inception

APPENDIX 3: TORS

PROJECT OFFICER

Location: Cameroon

Languages Required: English/French

Duties and Responsibilities

Summary of Key Functions:

Ensuring strategic direction of project operations;
Ensures effective and efficient financial resources management;
Resource mobilization and efficient procurement and logistical services;
Facilitation of knowledge building, climate technical inputs and knowledge sharing.

Ensures strategic direction of project operations focusing on achievement of the following results:

- Oversight and coordination of implementation of project activities;
- Assist in recruitment and supervision of technical and training expertise as required for implementation of the project;
- Developing and maintaining close linkages with relevant sectorial government agencies, UNEP, NGOs, civil society, international organisations and implementing partners of the project;
- Coordinating the establishment of the National Expert Group;
- Coordinating meetings of the Project Steering Committee.

Ensures effective and efficient financial resources management focusing on achievement of the following results:

- Coordinating inputs into annual results-based work plans, project budgets and logical frameworks as endorsed by the management;
- Coordinating inputs into all project reports as required (including Annual Project Reports, financial reports, Inception Report, Quarterly Reports and the Terminal Report).

Ensure Efficient advocacy, planning and programming, monitoring and evaluation and representation focusing of achievement of the following results:

- Formalizing any government, private institutions, academic institutions, NGOs/CBOs contractual agreements;
- Developing training materials, conducting workshops and preparing and disseminating materials such as briefing notes, fact sheets, presentations;

Competencies

Corporate Competencies:

- Demonstrates integrity by modeling the UN's values and ethical standards;
- Promotes the vision, mission, and strategic goals of UNEP and GEF;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability;
- Treats all people fairly without favoritism.

Functional Competencies:

- Promotes knowledge management in project team and a learning environment in the office through leadership and personal example;
- Actively works towards continuing personal learning and development in one or more Practice Areas, acts on learning plan and applies newly acquired skills.

Development and Operational Effectiveness

- Ability to organize and coordinate results-oriented strategic and thematic evaluations. Knowledge and understanding of evaluation and development evaluation in particular;
- Ability to conceptualize issues and analyze data;
- Ability to coordinate the work of the team;
- Good knowledge of Results Management Guide and Toolkit.

Management and Leadership

- Consistently approaches work with energy and a positive, constructive attitude;
- Demonstrates openness to change and ability to manage complexities;
- Leads teams effectively and shows mentoring as well as conflict resolution skills;
- Demonstrates strong oral and written communication skills.

Required Skills and Experience

Education:

- Master's degree preferably in Natural Resources, Chemistry, or Environmental Science, or related field with at least 4 years of relevant work experience;
- A first level university degree with 10 years of experience may be accepted in lieu of the advanced university degree.

Experience:

- Good understanding of Project Management;
- Ability to work with the government institutions;
- Experience in the usage of computers and office software packages and experience in handling of web based management systems.

Language Requirements:

English and French

APPENDIX 4:

FIGUEL CEMENT KILN TECHNICAL INFORMATION

CIMENCAM SITE VISIT/CONSULTATION REPORT (DECEMBER 2014)

I. INTRODUCTION

Dans l'optique d'éliminer les huiles contaminées au Poly Chloro Biphenyl (PCB), une équipe nationale d'experts PCB chargée d'évaluation des installations de la société Cimenterie du Cameroun (CIMENCAM) de Figuil, s'est rendue le jeudi 4 décembre 2014. Cette équipe était composée de :

In order to remove oil-contaminated Poly Chloro biphenyl (PCB), a national team of experts responsible for evaluating PCB Cement company facilities in Cameroon (CIMENCAM) Figuil, visited Thursday 4 December 2014.

- M. AOUDOU Joswa, coordonnateur du projet ;
- Mme NTANTANG Mary ; représentante de la société ENEO ;
- M. Pieter DIJKSHOORN ; EXPERT ERM (Environmental Ressources Management) ;
- M. NGASSOUM Martin Benoit ; Professeur à l'Université de Ngaoundéré ;
- M. EMOU MOUMANI Serge ; représentant du Délégué Régional MINEPDED/Nord.

II. DEROULEMENT DE LA MISSION/ CONDUCT OF the MISSION

A son arrivée sur le site, l'équipe a été reçue par MM. EKOLLO Francis, Directeur de l'usine et BIYONG George, Ingénieur des procédés environnementaux.

Après les civilités d'usage, la présentation des différents membres de l'équipe et de l'objet de la visite, qui était l'évaluation des installations de CIMENCAM dans l'optique d'élimination des huiles contaminées au PCB par les fours à haute température de ladite cimenterie. M. EKOLLO a pris la parole pour présenter la structure dont il a la charge et le fonctionnement du four.

On arrival at the site, the team was received by MM. Ekollo Francis, Director of the factory and BIYONG George, engineer environmental processes.

After the usual courtesies, the presentation of the different team members and purpose of the visit, which was evaluating CIMENCAM facilities with the aim of eliminating PCB-contaminated oil by furnaces high temperature of said cement. Mr. Ekollo took the floor to present the structure of which it is responsible and functioning of the oven.

II.1 Profil thermique du four/ Thermal Profile of the Oven

Le four sert à réchauffer à très haute température les matériaux utilisés dans la fabrication du ciment. Il fonctionne grâce à quatre types de combustible dont le fuel, les coques de graine de coton, le petcoke et les huiles usagées. A son entrée, on a une flamme qui brûle à une température de 2000 °c, cette flamme réchauffe les matériaux à une température de 1200°c. Au niveau de la tour, elle a une température de 400°c maximum avec un rayonnement extérieur de 350°c.

Dans ses propos, M. le Directeur a précisé à l'équipe que, les huiles contaminées au PCB que le projet veut mettre à la disposition de l'usine afin d'être utilisées comme combustible, doit faire l'objet d'une analyse préalable. La valeur calorifique et le pourcentage en certains éléments chimiques doivent être déterminés, ceci dans le but de mettre en évidence le taux de dilution ou de mélange avec d'autres constituants avant son utilisation.

En outre, Cette huile étant un produit nouveau pour l'usine, une demande écrite pour le brûlage des PCB avec d'autres ingrédients doit être produite par le projet. Selon le directeur, l'utilisation de cette huile pourra procurer des dividendes à la structure à la longue car, le PCB n'ayant pas un pouvoir calorifique élevé, l'état devrait payer un certain montant pour son utilisation.

The oven is used to heat at very high temperature materials used in the manufacture of cement. It operates through four types of fuel including fuel oil, cotton seed hulls, the petcoke and used oil. On entry, there is a flame which burns at a temperature of 2000 ° C, the flame heats the material to a temperature of 1200 ° C. At the tower, it has a temperature of 400 ° C with a maximum external projection of 350 ° c.

In his remarks, Mr. Director said to the team, oils contaminated with PCBs that the project wants to provide the plant to be used as fuel, must be analyzed beforehand. The calorific value and the percentage by certain chemical elements to be determined, this in order to highlight the degree of dilution or mixing with other components before use.

Also, this oil is a new product for the plant, a written request for the prescribed fire PCBs with other ingredients must be produced by the project. According to the director, the use of this oil can provide dividends to the structure in the long run because the PCB did not have a high calorific value, the state should pay a certain amount for its use.

II.2 la cheminé / The Chimney

Au dessus du four, se trouve une cheminé sur laquelle vient d'être installé un capteur de poussière. Il est prévu un contrôle de poussière à ce niveau. Pour le moment un analyseur est installé au niveau de la sortie du four. Cet analyseur permet de faire le contrôle de quelques éléments tel que le dioxyde de soufre (SO₂).

Par ailleurs, il n'existe pas d'observatoire d'analyse des poussières dans la ville. En 2009, il avait été mis en place un comité de suivi de poussière qui a disparu quelques temps après.

Above the oven, there is a chimney on which has been installed a dust. There is provided a dust control at

this level. Currently an analyzer is installed at the furnace exit. This analyzer allows for the control of some elements such as sulfur dioxide (SO2).

Furthermore, there is no dust analysis observatory in the city. In 2009 he was created a dust monitoring committee who disappeared shortly after.

II.3 genèse du projet/ Origins of the Project

Après les propos des responsables de la société, le coordonateur du projet a pris la parole pour parler de sa genèse.

En effet, c'est dans le cadre de la mise en œuvre de la convention de Stockholm, qu'il a été prévu l'inventaire des différents polluants Organiques Persistants (POP). Le Cameroun a reçu le financement du Fond pour l'Environnement Mondial, pour réduire les PCB. C'est dans ce cadre, qu'un atelier a eu lieu pour identifier les projets contribuant à éliminer les PCB dans notre pays et c'est ainsi que le projet PCB-Cameroun PPG Gant a vu le jour. Ce projet a pour objectif principal, l'élimination des huiles contaminées au PCB dans les fours à haute température.

D'après le coordonateur du projet, la visite de la mission à CIMENCAM de Figuil a pour but de savoir si la société est outillée pour procéder à l'élimination des PCB sur le plan local. Si oui un document sera rédigé pour mettre en œuvre cette activité dans le respect des normes environnementales. Dans le cas contraire, mention sera faite dans le rapport. Donc l'équipe évolue dans le cadre de la collecte des données pour enrichir le rapport du projet.

M. BIYONG précise que, dans le groupe Lafage, on ne brûle pas les huiles qui ont une concentration de plus de 50 PPM et que la société consomme environ 28 000 litres de fuel par jour et elle possède des cuves de 500 000 litres.

La représentante de ENEO déclare que, la société dispose actuellement de 40 tonnes d'huile contaminée au PCB. En 2009 la société AES SONEL avait évacué 120 tonnes de liquide contaminé, et que les récipients contaminés sont exportés.

Selon le coordonateur du projet, le chronogramme des activités du projet sera mis en place après la validation du rapport et il aura une durée de 5 ans. L'un des objectifs du projet est d'encourager les entreprises détentrices de PCB à les éliminer. L'incinération ne pourra commencer qu'après les essais et la formation des personnes qui vont manipuler les PCB, c'est-à-dire en 2016. Dans la réalisation du projet il y'aura la construction de nouvelles cuves par le projet pour le monitoring du nouveau liquide à incinérer. Le projet fera une étude avant l'installation des cuves.

Après cette phase de travail, l'équipe a procédé à une visite guidée de l'usine. Au cours de laquelle, l'aire de stockage des différentes matières premières, les trémies, la cheminée et la chaudière ont été passés en revue de même que l'analyseur de poussière, la salle d'analyse des données, les cuves, la salle de distribution des

combustibles et le transformateur.

A l'issu de cette étape, une pause s'en est suivi. Du retour de la pause l'équipe a fait ressortir sous forme de tableau quelques préoccupations qu'il a soumises à la société pour avoir des réponses.

After the words of company officials, project coordinator spoke to talk about its genesis.

Indeed, it is in the context of the implementation of the Stockholm Convention, it was planned the inventory of Persistent Organic different pollutants (POPs). Cameroon has received funding from the Global Environment Fund, to reduce PCBs. It is in this context that a workshop was held to identify projects helping to eliminate PCBs in our country and thus the PCB-Cameroon project PPG Glove was born. The project's main objective is the elimination of PCB-contaminated oil in high temperature furnaces.

According to the project coordinator, the visit of the mission to CIMENCAM Figuil aims to find out if the company is equipped to carry out the disposal of PCBs locally. Whether a document will be drafted to implement this activity in compliance with environmental standards. Otherwise, reference will be made in the report. So the team is evolving as part of data collection to enrich the project report.

Mr. BIYONG states that, in the Lafage group, does not burn oils that have a concentration of over 50 ppm and that the company consumes about 28,000 liters of fuel per day and has 500,000 liters tanks.

The representative ENEO said that the company currently has 40 tons of PCB contaminated oil. In 2009 the company AES SONEL had evacuated 120 tonnes of contaminated liquid and contaminated containers are exported.

According to the coordinator of the project, the timing of project activities will be implemented after the approval of the report and will have a term of 5 years. One of the project goals is to encourage companies holding eliminate PCBs. Incineration can only begin after testing and training of people who will manipulated PCBs, that is to say in 2016. In the project will there be the construction of new vessels by the project to the monitoring of new liquid to be incinerated. The project will study before installation of the tanks.

After this phase of work, the team procédée a guided tour of the factory. During which, the storage area of different raw materials, hoppers, the fireplace and the boiler were reviewed as well as the dust analyzer, the data analysis room, the tanks, the room distribution of fuels and transformer.

At the end of this step, a pause ensued. After the break the team highlighted in a table some concerns he submitted to the company for answers.

Cheminé/ chimney	Filtre/ filter	Four/ Oven	Stockage/ storage	Combustible/ fuel
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dimension	Types	Température dans différents compartiments du four/ <i>temperature different in different oven compartments</i>	Etanchéité des cuves <i>Sealing tanks</i>	Système de mélange (pourcentage)/ <i>mixing system percentage</i>
Emissions (paramètres contrôlés et non contrôlés)/ <i>controlled and uncontrolled</i>	Mailles des filtres/ <i>mesh filters</i>	Débit d'air <i>Air flow</i>	Nouvelles cuves et pompes <i>New tanks and pumps</i>	Composante du PCB <i>PCB component</i>
Points et fréquences des mesures <i>Points and frequency measurements</i>	Entretiens (fréquences) <i>Interview frequency</i>	Débit de combustible solide et liquide <i>Solid and liquid fuel flow</i>	Dépotage (à améliorer) <i>Unloading</i>	Biomasse composition <i>Biomass composition</i>
Température <i>Temperature</i>	Plan de gestion des filtres usagés <i>Used filters management plan</i>	Débit de biomasse et du fuel <i>Biomass flow and fuel</i>	Construction d'une zone à fus <i>Constuction of a zone</i>	
	Contrôle de performance <i>Performance testing</i>		Exposition du personnel <i>Staff</i>	
	Contrôle des COV <i>VOC Control</i>		Gestion des risques lors du dépotage <i>Risk management</i>	

			<i>during unloading</i>	
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III. CONCLUSION

En somme, nous pouvons constater que cette mission nous a permis d'avoir des données fiables pour la rédaction du rapport du projet. Elle nous a aussi permis de savoir que, toutes les parties prenantes du projet sont disposées à le recevoir malgré les petits réglages qui reste à faire pour mettre à jour le rapport du projet.

In sum, we can see that this mission has allowed us to have reliable data for the drafting of the report. It also allowed us to know that all project stakeholders are willing to receive despite the small adjustments remains to be done to update the project report.



Projet Destruction huiles minérales contenant des PCB

Données de base pour préparation de l'étude de faisabilité

Destinataires: ministère de l'environnement, ENEO

Date de transmission: 05/12/2014

Cheminée	
dimension	Diamètre: 1600mm, Longueur: 24m, épaisseur: 6/18/10mm, isolation thermique
Emissions	Emissions à contrôler périodiquement: Métaux lourds, PCDD, PCDF, COV, HF Emissions à contrôler en continu: Nox, SO2, poussières
Points et fréquence des mesures	5/6 de longueur soit 20m, mesures SPOT annuelles
Température	169°C
Le filtre	
Type	Filtre à manches avec rinçage à air comprimé modele DP 26X12/5,9
Manches	Poids 750g/m2, fibre de verre + membrane PTFE, dimensions: Ø152,4x5,9
Entretien	Changement immédiat des manches isolées en cas de poussières à la cheminée Campagne de remplacement des manches lors des arrêts annuels du four à l'issue des résultats de l'inspection spécifique (Fréquence de remplacement systématique à déterminer de façon empirique)
Plan de gestion des manches usées	Mis en décharge ou cession
contrôle de la performance	Suivi différence de pression entrée et sortie filtre, inspection visuelle pour détection présence poussières dans la chambre propre, Inspection spécifique à l'arrêt, régulation température et interlocks (arrêt injection combustible dès qu'un seuil est dépassé), détermination des airs faux par les mesures du service procédé. Ronde journalière de l'atelier par les rondiers suivant checklist; synoptique en salle centrale et enregistrement continu des données
Contrôle des COV	Mesures SPOT annuelles
Le four	
Description four	<i>Voir document joint</i>
Température dans les différents compartiments	<i>Voir fichier joint "zone du four"</i>
Débit d'air	21000 Nm3/h
Débit de combustible solide	1300 kg/h
Débit de combustible liquide	1100 l/h
Débit de la biomasse au back end	650 kg/h
Débit fuel au back end	200 l/h
Le stockage	
Etanchéité des cuves	OK
Nouvelles cuves et pompes	Nécessaire, zone d'installation à identifier
Dépotage	<i>Voir fichier joint</i>
Construction d'une zone à fut	Nécessaire (zone d'implantation à déterminer suivant plan de masse)
Exposition du personnel	Personnel au poste formé sur les risques chimiques sur le base des FDS
Gestion des risques lors du dépotage	Personnel au poste formé sur les risques chimiques sur le base des FDS
Combustible	
Système de mélange	Actuellement nous avons un mixeur statique pour le mixage fuel et huile régénérée; chaque combustible a sa pompe et le mixeur permet d'atténuer la différence de pression.
Composante du PCB	RAS
Composition biomasse	<i>Voir document joint</i>

