



# GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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## PART I: PROJECT INFORMATION

Project Title: Implementation of PCB Management Programs for Electric Cooperatives and Safe e-wastes Management			
Country(ies):	Philippines	GEF Project ID: <sup>1</sup>	9078
GEF Agency(ies):	UNIDO (select) (select)	GEF Agency Project ID:	150048
Other Executing Partner(s):	Department of Environment and Natural Resources- Environmental Management Bureau (DENR-EMB Lead Executing Agency); National Electrification Administration (NEA); Natural Resources Development Corporation (NRDC)	Submission Date: Resubmission Date:	9-08-2016 11-23-2016
GEF Focal Area (s):	Chemicals and Wastes	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/> Corporate Program: SGP <input type="checkbox"/>		
Name of Parent Program	[if applicable]	Agency Fee (\$)	589,000

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

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in \$)	
			GEF Project Financing	Co-financing
(select) CW-1 Program 1 (select)	Outcome 1.1 Countries have appropriate decision-making tools and economic approaches to promote the removal of barriers preventing the sound management of harmful chemicals	GEFTF	800,000	4,628,220
(select) CW-2 Program 3 (select)	Outcome 3.1 Quantifiable and verifiable tonnes of POPs eliminated or reduced	GEFTF	5,400,000	31,240,492
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
<b>Total project costs</b>			6,200,000	35,868,712

## B. PROJECT DESCRIPTION SUMMARY

Project Objective: Protection of human health and the environment through sound management of PCBs and PBDEs in e-wastes						
Project Components/Programs	Financing Type <sup>3</sup>	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Confirmed Co-financing
Component 1. Management of POPs in Waste Electrical and Electronics	TA/Inv	1.1 Strengthened legislation and institutional capacity in implementing	1.1.1 A rationalized National Policy on WEEE Management mainstreamed including	GEFTF	2,780,000	7,281,493

<sup>1</sup> Project ID number remains the same as the assigned PIF number.

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

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

Equipment (WEEE)		<p>PBDE action plan</p> <p>1.2 Reduction and eventual elimination of POPs-PBDEs releases from WEEE to mitigate their health impact.</p>	<p>incentive packages, financial mechanisms and Extended Producers' Responsibility (EPR) initiatives</p> <p>1.2.1 Systematized and standardized system for inventory of POP-PBDEs in WEEE in the country</p> <p>1.2.2 BAT/BEP demonstrated for the sustainable sound management of WEEE at selected waste recycling facilities</p> <p>1.2.3 Safe disposal of materials containing POP and hazardous chemicals</p>			
Component 2. Sound Management of PCB-contaminated equipment, PCB wastes and stockpiles from electric cooperatives	TA/Inv	2.1. PCB management plans of selected electric cooperatives effectively implemented.	<p>2.1.1 Screening criteria and financial mechanism finalized for subsidized funding enabling qualified electric cooperatives to implement PCB management plans.</p> <p>2.1.2 The PCB disposal facility at Limay, Bataan upgraded for undertaking further disposal of 600 t of PCB equipment from the electric cooperatives</p> <p>2.1.3. PCB wastes screened, transported, treated and disposed at the existing Non-Combustion Facility at Limay, Bataan</p>	GEFTF	2,520,000	22,291,242
Component 3. Institutional strengthening, capacity building and awareness raising	TA	3.1 Increased capacity for and awareness on sustainable and effective WEEE and PCB wastes management by relevant stakeholders	<p>3.1.1 Training programs on PCB and WEEE management for relevant stakeholders designed and implemented</p> <p>3.1.2 Awareness programs on WEEE and PCB waste management conducted and knowledge management</p>	GEFTF	400,000	3,554,845

			infrastructure established.			
Component 4. Project Monitoring and Evaluation	TA	4.1 The project and all its stakeholders are able to monitor and evaluate the project's progress allowing for the implementation of the national action plans on POPs.	4.1 A system of procedures for full monitoring (including gender and environment and social safeguards) and evaluation mechanism set up ensuring best performance as indicated in the project's work plan.	GEFTF	200,000	1,233,066
Subtotal					5,900,000	34,360,646
Project Management Cost (PMC) <sup>4</sup>				GEFTF	300,000	1,508,066
<b>Total project costs</b>					<b>6,200,000</b>	<b>35,868,712</b>

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

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

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount (\$)
Recipient Government	DENR-EMB (Central and Regional Offices)	Grants	7,257,956
Recipient Government	DENR-EMB (Central and Regional Offices)	In-kind	1,881,551
Recipient Government	National Electrification Administration (NEA)	Grants	3,749,160
Recipient Government	National Electrification Administration (NEA)	In-kind	47,600
Recipient Government	Development Bank of the Philippines (DBP)	Loans	12,000,000
Private Sector	Electric Cooperatives*	Equity	4,679,045
Private Sector	Electric Cooperatives*	In-kind	1,841,351
Private Sector	Integrated Recycling Industries (IRI), Inc.	Equity	2,070,843
Private Sector	Cebu Common Treatment Facility, Inc. (CCTFI)	Equity	266,206
CSO	Médecins du Monde	In-kind	1,700,000
GEF Agency	UNIDO	Grants	125,000
GEF Agency	UNIDO	In-kind	250,000
<b>Total Co-financing</b>			<b>35,868,712</b>

*\*Co-financing contributions from electric cooperatives reported in the above table do not include transformer replacement costs as this may be defrayed from the loan package being offered by the Development Bank of the Philippines. Detailed co-financing from electric cooperatives and other stakeholders is found in Annex G.*

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

#### D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee <sup>a)</sup> (b) <sup>2</sup>	Total (c)=a+b
UNIDO	GEF TF	Philippines	Chemicals and Wastes	POPS	6,200,000	589,000	6,789,000
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
<b>Total Grant Resources</b>					6,200,000	589,000	6,789,000

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

#### E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS<sup>5</sup>

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>hectares</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO <sub>2e</sub> mitigated (include both direct and indirect)	<i>metric tons</i>
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>600 metric tons of PCB-contaminated oil and equipment and 1.150 tons of PBDEs</i>
	Reduction of 1000 tons of Mercury	<i>metric tons</i>

<sup>5</sup> Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries:</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries:</i>

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

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

**PART II: PROJECT JUSTIFICATION**

**A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF<sup>6</sup>**

A.1. *Project Description*. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area<sup>7</sup> strategies, with a brief description of expected outcomes and components of the project, 4) [incremental/additional cost reasoning](#) and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and [co-financing](#); 5) [global environmental benefits](#) (GEFTF) and/or [adaptation benefits](#) (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.

The project structure presented in the discussion below is consistent with that presented in the PIF. A minor redistribution of fund allocation per component was made. Additional output (Output 2.1.2) was integrated in the project document to reflect the required strengthening of the functionality of the PCB facility in the Philippines while Output 3.1.3 - Knowledge management infrastructure established - from the PIF was merged with Output 3.1.2 on awareness raising.

**A.1.1 The global environmental problems, root causes and barriers that need to be addressed.**

1. The management of persistent organic pollutants (POPs) listed under the Stockholm Convention (SC) remains to be a global challenge. While the success of the global efforts to rid the world of POPs have been demonstrated, developing countries are still in need of new and additional resources to address existing and emerging chemicals issues including the 'old' and 'new' POPs listed under the Convention.
2. Due to their very broad use, to the often inappropriate disposal criteria and their long persistence in the environment, polychlorinated biphenyls (PCBs) are now ubiquitous environmental contaminants, with a bio-accumulation behaviour caused by their lipophilicity. PCBs tend to concentrate in sediments, especially in the marine environment, as the water layer above them protects them against the ultra-violet component of solar radiation that would otherwise cause photodegradation. The impacts of PCBs on human health and the environment is very well documented. Evidence of PCB toxicity was found in

<sup>6</sup> For questions A.1 –A.7 in Part II, if there are no changes since PIF, no need to respond, please enter “NA” after the respective question.

<sup>7</sup> For biodiversity projects, in addition to explaining the project’s consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving..

animals used for experimental purposes: the toxic effects include skin disorders, weight loss, endocrine and reproductive disorders, carcinogenesis (liver carcinoma), etc. Based on a March 2013 review of scientific evidences, IARC (International Agency on the Research on Cancer) has classified PCBs as class 1 carcinogenic compound. Thus, according to Annex A Part II of the Stockholm Convention, Parties to the Convention are obliged to eliminate equipment and oils containing PCBs from use by 2025 and bring these under environmentally sound waste management by 2028. However, developing countries and countries with economies in transition face several challenges concerning the environmentally sound management (ESM) of PCB oils and PCB-containing equipment including lack of capacities, poor inventories, limited resources and inaccessible information (PCB Elimination Network, accessed March 2015).

3. As far as PCBs are concerned, although the environmentally-sound disposal technology for the PCB dechlorination delivered under the previous UNIDO project *"Global Programme to Demonstrate the Viability and Removal of Barriers that Impede Adoption and Successful Implementation of Available, Non-combustion Technologies for Destroying Persistent Organic Pollutants (POPs)"* (GEF ID 2329), has been successfully tested and is currently operational, there are still a number of barriers limiting the rate of disposal of PCBs in the Philippines:
  - The information on cross-contaminated transformers (i.e. non pure PCBs) is scarce, as most of the information concern pure PCB equipment, therefore the extent of the PCB issue is not completely clear;
  - There is limited capacity in the country for testing and analysis of PCBs, and the current rate is prohibitive (reaching around 200 USD per sample tested);
  - There is currently a very high number of small electric cooperatives (ECs) operating locally which were not covered by the previous UNIDO project and which are lacking technical and financial capacity for destroying or treating their PCBs contaminated equipment;
  - Some of the electric cooperatives undertook the preparation of their PCB management plans, which are, however, not supported by the necessary analytical information on electrical equipment.
4. Around 2% of the total solid waste generation in developed countries consists of waste electrical and electronics equipment (WEEE) (UNEP, 2007). UNEP estimates per capita of WEEE generation within the EU at 14 to 15 kg annually and is expected to grow at a rate of 3% to 5% per year. These translates to around 5 to 7 millions tonnes per annum. The presence of hazardous substances in WEEE makes it imperative to effectively manage them, as well as, to strictly implement regulations concerning their proper disposal. WEEE have components that are covered under the amended Stockholm Convention (2009) on POPs. These include certain brominated flame retardants (BFRs) that are listed in Annex A of the Convention. These are: (a) hexabromobiphenyl (HBB) and (b) polybrominated diphenyl ethers (PBDE) - commercial-OctaBDEs and commercial pentaBDE. There is no specific exemption for the production or uses of HBB, while production and use of POP-PBDEs have to be eliminated by Parties subject to the exemptions allowed by the Convention.
5. Annex I of the Basel Convention text lists categories of wastes to be controlled and these waste streams include (Y10) Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs) and/or polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs). Both PCB and PBDE as POPs are related to this category of hazardous wastes under the Basel Convention. Likewise, the Stockholm Convention on POPs, under article 6 (2) establishes that the Conference of the Parties shall cooperate closely with the appropriate bodies of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal to, inter alia:

- Establish levels of destruction and irreversible transformation necessary to ensure that the characteristics of persistent organic pollutants as specified in paragraph 1 of Annex D are not exhibited;
  - Determine what they consider to be the methods that constitute environmentally sound disposal referred to above; and
  - Work to establish, as appropriate, the concentration levels of the chemicals listed in Annexes A, B and C in order to define the low persistent organic pollutant content in paragraph 1 (d) (ii).
6. The main use of PBDEs was as flame retardant in plastic or foam components of electric and electronic equipment (EEE), vehicles, or in general, whenever such plastic component need to be protected from the risk of fire. PBDEs are released to air from products during use, through volatilization and particulate. Emissions of PBDEs can also occur from recycling and dismantling activities such as dismantling of vehicles, buildings and constructions. Emissions can occur from electronic waste recycling plants and shredder plants. Potentially toxic products such as brominated dibenzo-pdioxins and furans might be generated during incineration of articles containing PBDEs. These compounds are highly persistent in air, very persistent in marine sediment, and highly bioaccumulative. The available information on the human toxicity of PBDEs are scarce, however toxicological studies have demonstrated reproductive toxicity, neurodevelopmental toxicity and effects on thyroid hormones in aquatic organisms and in mammals.
7. PBDE production data for 1970-2005 ranged between 1.3 million to 1.5 million tonnes as estimated by the POPs Reviewing Committee (POPRC) of the SC (UNEP, 2010). During this period, global usage for c-PentaBDE and c-OctaBDE was estimated at around 100,000 tonnes each. Production of c-pentaBDE and c-OctaBDE ended in 2004, while c-DecaBDE production continues. Commercial-DecaBDE production until 2005 was estimated to be at least 1.1 million tonnes. Although not listed at present, higher brominated PBDEs can be debrominated during its lifetime and thus could potentially be precursors of lower PBDEs, such as the POPS-PBDEs.
8. E-waste management in the Philippines, just like in many countries, is for a large part conducted without any concern for the environment or the human health. The low-value components of the E-waste, like plastic casings removed during dismantling from computers and monitors, are often abandoned, dumped in the environment or even burnt in the open. Recycling operations are, in most cases, very basic, leading to the exposure of workers and recyclers to PBDEs, HBB and heavy metals and other contaminant of concern. The main barriers that need to be addressed in the country to prevent the release of these contaminant in the environment are the following:
- lack of a comprehensive regulations on POPs and the weak enforcement of existing regulations;
  - lack of environmentally-sound procedures and technologies for collection, dismantling, segregation and recycling of E-waste;
  - low awareness in all the sectors of the society on the dangers of POP, in general– from consumers to resellers to the waste industry.

Likewise, a threshold limit for classifying low or high-POP content waste based on PBDE concentration has not been yet established under article 6.2 of the Stockholm Convention and the related Basel Convention guidance.

9. Coupled with increased local generation, the country is faced with handling and management challenges. There are only a handful of treatment, storage and disposal (TSD) facilities that are into processing WEEE and even fewer still, engage in treatment and recovery. The bulk of WEEE, therefore, end up in the unregulated informal sector which are oblivious to the health and environmental health hazards associated

with its improper handling. This is particularly striking since poverty is the main driver of WEEE recycling among the lower income brackets and who are, at the same time, most vulnerable to adverse health impact of improper WEEE handling.

### **A.1.2 The baseline scenario and associated baseline projects.**

As a Party to the SC on POPs, the Philippines is obliged to comply with the targets designed to reduce or eliminate releases from intentional and unintentional production of POPs. The Government of the Philippines, through the Department of Environment and Natural Resources (DENR), developed a National Implementation Plan (NIP) in 2006, which outlined programs and actions to achieve its obligations. The NIP has recently been updated (2014) to address the changes in the obligations to the SC, review the action plans previously developed and the achievements so far, and formulate new action plans that would address the additional obligations. In the updated NIP, two of the priority action plans identified were the need for the development and implementation of incentives for rural electric cooperatives to comply with the phase out of PCBs and management of PBDEs from WEEE stream in the country. The baseline situation and associated baseline projects are detailed in the following section as per related project components:

#### ***Component 1: Management of POPS in Waste Electrical and Electronics Equipment (WEEE)***

##### **E-waste regulatory framework**

10. The recent government initiative to implement the DENR Administrative Order (DAO) 2013-22 *Revised Procedures and Standards for the Management of Hazardous Wastes* is a promising way forward to a sustainable management of WEEE in the country. Among its salient features include: streamlining the procedures for generation and compliance to the legal and technical requirements for hazardous waste management; ensuring that the provisions of DAO 1992-29 are followed particularly on the requirement for hazardous waste generators, transporters and treaters; and having classified WEEE as (M506) and under Miscellaneous Waste (M507).
11. Under the DAO 2013-22, E waste are classified as hazardous waste with code M506, which includes “all waste electrical and electronic equipment that contain hazardous components such as lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) that includes its peripherals i.e. ink, cartridge, toners, etc.” DAO 2013-22 does not include any threshold concentration of the hazardous substances listed under M506 leading to the classification of these waste as hazardous. Special wastes or household hazardous wastes, which include e-waste, are also classified as hazardous wastes with waste number M507, or those “household hazardous wastes such as paints, thinners, household batteries, lead-acid batteries, spray canisters and the like that are consolidated by Material Recovery Facilities (MRFs), or those from residential and commercial sources that comprise of consumer electronics, white goods (i.e. refrigerators, washing machines, air conditioners, etc.), batteries, oil and busted lamps”. Under this administrative order, hazardous wastes are regulated from the point of generation, to its transport, treatment, and disposal. Generators, transporters, and Treatment, Storage, and Disposal (TSD) facilities are required to register with the Environmental Management Bureau (EMB). The transport of the waste should be covered with Permit-to-Transport (PTT) and comply with the manifest system of hazardous wastes.

13. EMB-DENR has also drafted the “Guidelines on Environmentally Sound Management (ESM) of Waste Electrical and Electronic Equipment (WEEE)” in 2015. The Guidelines underwent several consultations and it is targeted to be issued by 2016. The Guideline has the following objectives.
- Provide the framework mechanism for the appropriate management of WEEE;
  - Reduce the amount of electrical and electronic equipment (EEE) type of waste and the hazards brought about by its components;
  - Promote the reuse of EEE and valorization of its waste components;
  - Encourage involvement of all relevant agencies and stakeholders in the life cycle of EEE through design innovation leading to their more efficient dismantling, recycling, and reuse; and
  - Institutionalize the principle of “extended producers responsibility” (EPR) in addressing the financial requirements involved in the implementation of the WEEE Guidelines.
14. The draft Guideline also includes requirements to adopt Environmentally Sound Technologies for the disposal and recycling of E-waste, and rules related to the removal of components containing hazardous substances (POPs, mercury, heavy metals) prior to recycling. In addition, the Guideline specifies duties for parties, among which the main ones are as follows:
- **Producers and importers:** Producers and importers, among others, are required to prepare a WEEE management plan and to setting up a WEEE Management System Operator; to contribute with a WEEE management fee and to submit an audited annual report to DENR-EMB;
  - **Distributors and retailers:** to purchase only from registered producers and importers; to distribute only products bearing the EEE-prescribed marking; to provide appropriate and environmentally sound space for temporary storage of WEEE at no cost;
  - **WEEE management system operators:** together with producers, to implement the WEEE Management Plan subject to the approval of EMB; to collect the WEEE management fee; provide EMB with an annual audit report; comply with the National Regulation on waste regarding the transport manifest, storage, treatment, reuse, recycle, and/or disposal of WEEE;.
  - **Collection points and consolidation centers:** Accept and allow the temporary storage of containers and WEEE, and provide appropriate storage areas; comply with relevant regulation on Environment, Health and Safety; inform the public; provide appropriate training to staff;
  - **TSD facilities:** comply with the requirements under DAO 2013-22 and the relevant provisions under the Guideline; and
  - **Local Government Units:** Establish collection points or consolidation centers; formulate and implement pro-forma guidelines in WEEE management. The implementation of DAO 2013-22 specifies that a separate stream for WEEE be part of the regular recovery activities in all MRFs. The WEEE stream from these MRFs together with those from the local junkshops will be transported to the appropriate TSD for dismantling and recovery of PBDE from the WEEE plastic components.
15. In March 2, 2016, the City of Cebu issued an ordinance "providing for the management of special wastes in the city of Cebu, providing fees and imposing penalties for non-compliance thereof"( RN 13-1758-2016). The ordinance applies to “household consumers, commercial establishments, LGU-materials recovery facilities, and formal and informal waste recyclers involved in the life cycle of Special Wastes as classified under waste number M507 of DAO 2013-22.” It includes specific obligations for the generators (Article III), collection points (Article IV), transportation, storage and treatment (Article V), recyclers (Article VI), producer of EEE (Article VII). The ordinance refers to the need to prevent the release of hazardous substance, although POPs are not explicitly mentioned.

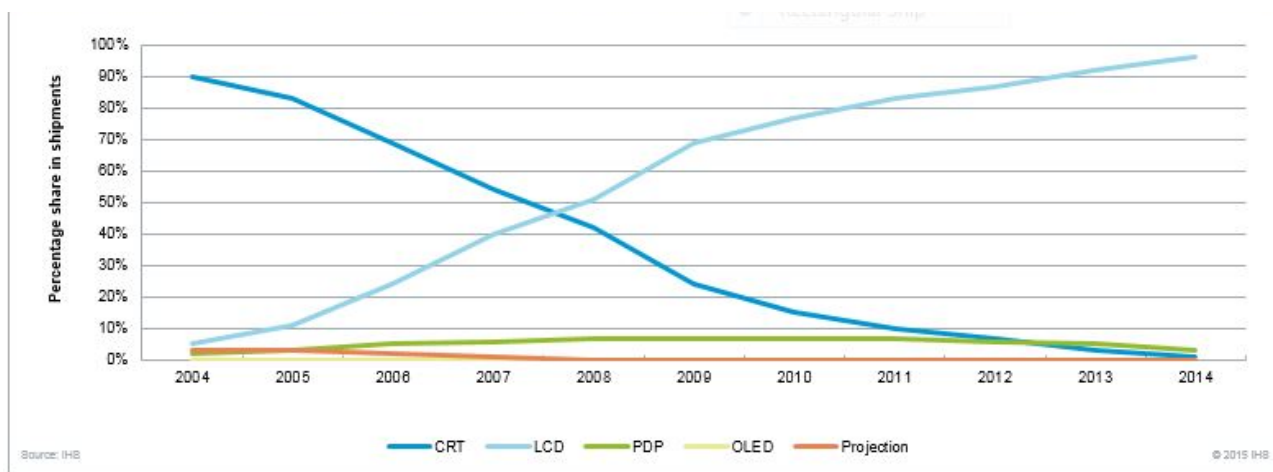
16. While the policy is in place and the guidelines have been drafted, a number of issues on E-wastes regulatory framework still remains. The Philippines still suffers from major gaps in provisions, management and enforcement of critical regulations. The regulatory framework dedicated for WEEE management is relatively new (DAO 2013-22). It does not have POPs-related provisions and requires strong enforcement. Likewise, it only addresses the formal sector while a greater challenge lies with the unregulated informal sector. Compounding the problem is the absence or lack of consolidated and reliable data on generation, collection, disposal and management schemes, while environmental awareness on the hazards associated with WEEE is still low.

*Preliminary Inventory of POP-PBDES in Electrical and Electronics Equipment (EEE)*

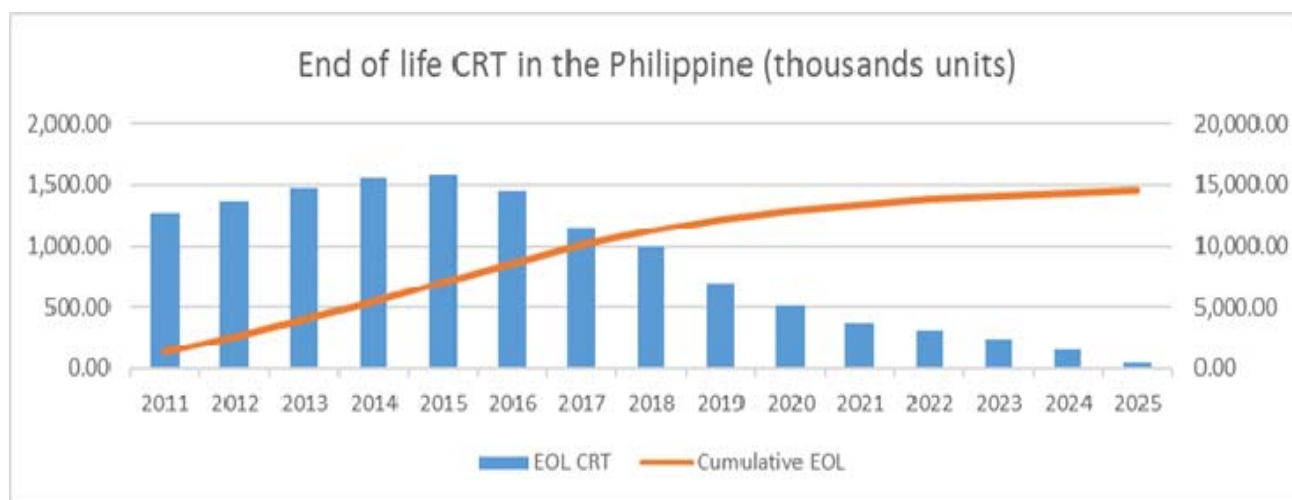
17. Most countries lack reliable data on WEEE generation, the Philippines included. Currently, available generation reports of WEEE in the Philippines are based on the studies conducted by the University of the Philippines and are based primarily on sales data or partially estimated using material flow models. Peralta and Fontanos (2006) used the end-of-life model developed by Mathews (1997) of Carnegie Mellon University and accounted for the relationships among reuse, storage, recycling, and landfills. Yang et al. (2004) calculated e-waste generation by using sales data for each year and assumed product lifetimes. Peralta and Fontanos (2006) estimated the level of e-waste generation based on domestic sales data of five major electrical and electronic products namely televisions, air conditioners, washing machines, refrigerators and radios. A total of 25 million units of e-waste were estimated as obsolete over a 10-year period (1995 to 2004), and around 2.7 million units became obsolete by the end of 2005. Another 14 million units have been projected to become obsolete in the next 15 years.

18. Based on the updated NIP (2014), EEE in the Philippines are the largest material flows containing c-octaBDE. The inventory of EEEs based on the country's population (from 62 million in 1990 to 84 million in 2004) and penetration rate (no. of CRTs per capita) gave an estimated cumulative weight of CRTs in the Philippines from 1990 to 2004 of 11,019 tons. Based on the UNEP Guidance equations (UNEP PBDE Inventory Guidance 2013), and penetration rate from 1990 to 2004, this figure converts to 93,400 kg of c-octaBDEs comprising of 43% hepta BDE (40,197.05 kg) and 11% hexaBDE (10,283 kg). Using the same UNEP PBDE Inventory Guidance, the amount of c-octaBDEs estimated from importation of 222,897 tons of CRTs from 1997 to 2004 was 61,543 kg. C-decaBDE, as per new developments in the Stockholm Convention chemicals listing, would also soon become an important PBDE source that need to be addressed by Parties (UNEP/POPS/POPRC.10/10/Add2).

19. The above figures also seem to underestimate the current amount of CRT monitor reaching their end of life in the Philippine. Based on market information (Euromonitor international, 2015) in the Philippines, the market sales of all TV monitors climbed from 27,256,000 unit in 2001 to 48,254,400 units in 2015. In 2014, LCD accounted for more than 95 percent share among TV shipments worldwide, leaving just a handful of plasma TV sets and bulky cathode-ray-tube (CRT) televisions as shown in **Figure 1**. It is expected that both CRT and plasma shipments will end as soon as their production base shuts down. Assuming a lifespan of 10 years for the CRT monitors, the peak of end of life CRTs has been already reached in 2015 (**Figure 2**), and then the rate of CRT discarded will slow down to 0 in 2025. In addition to this, the Philippines imported 551,365 units of TVs and CRTs from 2007 to 2012, and around 270,000 CRT units in 2013 only from Japan and Korea.



**Figure 1: Share in shipment of different types of monitors**



**Figure 2: Projection of the end-of-life CRT in the Philippines**

Based on the above information, around 15 millions CRT monitors would reach their end of life by the year 2025. The rate at which these equipment will actually enter the waste stream is still unknown as these are mostly kept inside houses or offices. However, as the peak year of their end of live already passed, there is an urgent need of establishing capacity for the environmentally sound disposal of these waste.

Estimates related to the pilot project areas: National Capital Region (Manila) region and Cebu.

20. The project will focus on 4 areas of the wider metro-Manila, where the partner NGOs have most of their capacity of interacting with E-waste collectors. These are: Camarin (Caloocan); Bagong Silang (Caloocan); Tondo (Manila); Longos (Malabon), covering an overall population of around 1.2 million inhabitants. There are no specific estimates on the generation of E-waste from these areas. However, adopting the same assumptions made for the estimation of the generation of ICT waste and wasted CRT monitors, their amount and the associated amount of PBDE waste can be tentatively estimated to be around 2% of the country's generation.

21. Cebu is the capital city of the province of Cebu, the second most populous metropolitan area in the Philippines after Metro Manila. A recent study carried out by IGED provides an estimation of E-waste

yearly generation, based on the consumption and use method, of around 938 tons of desktop PC, 14 tons of mobile phones, 410 tons of laptop pc and 4529 tons of used TV (out of which the largest part are CRT monitors), for an overall amount of 5891 tons. Most of these e-waste do not actually enter the waste stream, but are just kept in the houses.

22. Following the Swiss Federal Laboratories for Material Science and Technology (EMPA) guidelines, the average amount of brominated plastic in ICT equipment (desktop pc, laptop pc, mobile phone) is 18%. In this fraction, the average concentration of c-PBDEs has been estimated, based on data from EMPA, at 0.225 kg/t. The estimated amount of c-PBDEs from end of life ICT equipment can be calculated as  $1362 \times 0.42 \times 0.225 / 1000 = 0.13$  tons.
23. Based on Stockholm Convention guidance documents, the plastic content in CRT monitors may be estimated to around 30% of their weight; and the c-PBDE content may be estimated as around 2.54% of the weight of the plastic. For Cebu, assuming a 60% fraction of CRT monitor over the overall end of life TV sets, the above converts in a theoretical amount of c-PBDE in the order of around 20 tons. Based on these estimates, it is also quite clear that CRT monitor represent a priority in term of PBDE. As previously stated, an urgent action to remove the PBDE-containing plastics in the recycling chain and in circulation should be a priority.

#### E waste flows and processing in the pilot areas

24. Considering the pilot areas covered, the project has partnered with both Integrated Recycling Industries (IRI) Philippines, Inc. in Metro Manila and Cebu Common Treatment Facility Incorporated (CCTFI) for the processing of PBDE-containing plastics in their e-wastes collection.
25. IRI Philippines receives scraps from electronic industries, including CRT monitors. IRI was established in 2001 and is located in an industrial park. It is a SW 110, SW 104 & SW 325 Licensed contractor with DOE under EQA, 1974 (Prescribed Premises, Scheduled Waste Treatment & Disposal Facilities, as Scheduled Waste Collector, Transporter and Provider of Treatment and Disposal Facilities). It is an EMB-registered TSD facility and it conducts business in the area of reclamation of precious metals, treatment of hazardous wastes, crushing of discarded equipment, purchase of materials for metal reclamation and plastic recycling, disposal of scrap materials (nonferrous and precious metals, plastics, etc.). IRI has a processing capacity of 2 tons/day of electronic scraps.



*IRI employees processing e-wastes collected*

26. CCTFI, on the other hand, is an environmental service provider established initially to help the electroplating industry in treating and disposing its hazardous wastes properly. CCTFI was established in July 1996 as an outcome of the former GTZ-assisted Industrial Pollution Control Cebu Project conducted by the DENR. Its commercial operation started late 1998. Over time, CCTFI has expanded its services to other manufacturing companies producing contaminated waste water and sludges, and currently intends to CCTFI would like to strengthen the marketing of its services, especially to companies, in order to maintain or even expand its client base.
27. In both the Manila region and Cebu, like in other part of the country, the E-waste management cycle encompasses the following actors:
- On the side of EEE distribution and use: distributors and retailers of EEE, household and corporate users, second hand industry and repair shop; and
  - On the side of E-waste generation and treatment: Material Recovery Facilities (MRF) informal collectors and junkshops, informal / backyard recycling (dumping residual waste to illegal dumpsites) formal recycler like the CCTFI (exporting to foreign industries and disposing residual waste in an official manner)
28. Commercial, industrial and government entities are classified as **corporate consumers**. Formal and corporate consumers are usually serviced by formal waste managers to dispose / sell their used or end of life equipment. Institutional users and in some cases large corporates have an internal policy requiring to issue bidding processes to select the waste service provider. Corporate consumers have to submit a Self-Monitoring Report (SMR) to the Environmental Management Bureau (EMB). Based on the SMRs, about 200 tonnes of e-waste is generated by the corporate sector annually in Cebu (Ballesteros, 2014). However, the staff of the DENR-EMB Region VII confirmed that this figure does not give an adequate picture of the total e-waste generation by the corporate sector because many of them do not send the monitoring reports as required by the Ministry.
29. **Second-hand shops** offer multiple repairing and upgrading services for mobile phones and computers. These shops also sell equipment which has been repaired or assembled using new or used components. Second hand shops have therefore a double role: from one side, they prolong the life of used EEE by placing them in the market after repairing; from the other side, they are generators of E-waste. As for them

the E-waste part represents a cost, in the absence of a regulatory framework on E-waste and its enforcement, it is expected that most of the repair shop dump their waste in an improper way.

30. **Junk shops** are also formal actors on the management of some recyclable waste like plastic containers, steel, aluminium but they are not allowed to manage E-waste. Therefore, as far as E-waste management is concerned, junk shops operates informally and sell e-waste components to informal recyclers, like informal smelters or dismantlers that may be found for instance in the Metro Manila area.
31. **Material recovery facilities (MRFs)** are storage areas receiving special waste stream (category M507) including wastes from residential and commercial sources like consumer electronics, “white” appliances, batteries, oil, busted lamps. MRFs cannot manage waste electrical and electronic equipment (category M506). However as there is a substantial overlapping between the two waste categories, MRFs obviously also manage E-waste.
32. **Treatment, Storage and Disposal (TSD)** facilities are the only facilities authorized for the management of hazardous waste. According to the DENR, there were 122 registered Treatment, Storage, and Disposal (TSD) facilities in the Philippines as of December 2015. However, only 32 facilities are engaged in handling e-waste. Their scope of operation and permitting requirements are established under DAO 2013-22. The approximate average capacity of the 32 registered e-waste TSD facilities is 38 tons/day. The process may vary from storage to dismantling to recycling to thermal treatment to refurbishing depending on the ECC issued to the company.
33. Communities of **“informal” collectors** operates both in Cebu and in Metro Manila. Informal collectors mostly collect E-waste from households and from the dumpsites. Theoretically, the waste collected by the informal collectors cannot join the formal stream of waste management. In practice, these waste may enter the formal stream taking advantage of some backlogs in the system, like for instance the overlapping between M506 and M507 waste categories which can be stored at MRFs.
34. **Informal recycling facilities** are common in the Philippines. Some of them are, for instance, located in Caloocan city and Tondo. They process the integrated circuit boards from some e-waste to extract precious metals (mostly gold). Informal collector operating in the business of CRT recycling may also be found. Usually, they manually remove the plastic component of e-waste, and then dump these waste in rivers, dumpsites or landfills together with municipal solid wastes, in illegal landfills or in rivers. The glass part of the CRT monitors are also usually dumped in these same places.



*"Informal" recycling facilities*



*"Informal" e-wastes collection*

35. Within the value-chain in e-wastes recycling, collection remains the most challenging link. Isolated efforts on collection have been somehow initiated by different actors. In 2006, Recyclables Fair was initiated to establish WEEE markets. These events aimed to collect WEEE from shopping malls in Metro Manila on a regular monthly schedule. The activity provided the venue for households and offices to dispose their WEEE (Ayala Foundation, 2011). Also, DENR and the National Solid Waste Management Commission (NSWMC), in partnership with the Department of Trade and Industry- Board of Investment (DTI-BOI) and with technical assistance from Japan International Cooperation Agency (JICA), also implemented a project on Cell Phone Waste Collection and Recycling in 2007. Drop-off points for collection of discarded cell phones and components, including 20 collection bins in three designated areas in Metro Manila, were set up at shopping malls and other public places.
36. With so many players involved in the whole life cycle and value chain of electronic products and wastes, a critical assessment of this aspect will be undertaken in order to understand the priority actions that need to be carried out along the life cycle of electronic products entering both the producers and consumers' chain. There is a need, specifically, to resolve collection issues in the "informal" sector and how this maybe integrated into the formal sector.

*Availability of analytical data concerning POPs PBDEs in E-waste.*

37. In the course of the activity of NIP updating and during the preparatory stage of this project, quick semi-quantitative determination of brominated compounds content in the plastic casing of wasted EEE was carried out. The equipment used for this testing is a portable X-ray fluorescent spectrometer. This device is basically a portable handheld metal analyzer, containing a miniature x-ray tube, a Si-PIN detector, a built-in standard library for steels and alloys. The equipment can measure the following element as standard: Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, W, Ta, Re, Pb, Bi, Ag, In, Sn, & Sb, plus Cr, Br, Hg, Pb, Cd analysis in plastics and other materials for RoHS. Therefore, it provides an indirect quantification of

PBDE, which need to be estimated based on the measured bromine concentration, and assumes an average bromination of the flame retardant in plastic. Confirmation testing in the laboratory is, therefore, necessary.

38. During a site visit to IRI, EMB staff conducted XRF analyses of the plastics currently in the storage of IRI. Bromine (Br) content were not detected on the plastics from the washing machine tubs. Bromine readings from CRT computer monitor plastic casings were from as low of 66 ppm to as high as 66,000ppm. Low Br readings were obtained from front plastic casings of computer CPU. Br was not detected from rear plastic casings of laptops, from cellphone casings, and from UPS casings. The quick testing results confirmed the presence of elevated concentration of brominated compounds in the plastic casing of CRT monitors, whilst the presence of the same in the casing of mobile phone and LCD monitor was not confirmed.
39. As laboratory analytical data related to the content of POPs PBDE in E-waste in the Philippine are not available, there is a need to perform analysis of some waste streams and verify the PBDE content of those materials which are found to contain high concentration of Bromine through XRF testing. Analytical capacity on PBDE analysis should also be strengthened to enable the country to monitor articles, products and wastes that may contain PBDE.
40. Considering the information presented above, the following gaps on E-waste management have been identified:
- Lack of a streamlined policy that include POPs-related provisions and weak enforcement;
  - Low level of awareness of health and environment related issues on e-wastes processing;
  - Low capacity on PBDE analysis necessary for monitoring articles, products and wastes that may contain PBDE;
  - PBDE-containing plastics continue to enter the recycling chain and;
  - Integration of the informal sector into the formal sector of e-wastes collection and processing.

## ***Component 2. Sound Management of PCB-contaminated equipment, PCB wastes and stockpiles from electric cooperatives***

### ***National Regulatory and Institutional Framework on PCB Issues***

41. The Chemical Control Order (CCO) for PCBs (DAO 2004-01) issued in 2004 targeted the complete phase-out of PCB equipment by 2014, while the complete disposal for PCBs were set for 2025 in relation to the 2006 National Implementation Plan on POPs . Moreover, Section 6 of the recently issued EMB Memorandum Circular 2015-004 prescribed the use and phase-out of remaining PCBs in the country. It states that no additional PCB equipment, PCB-contaminated equipment, and non-PCB equipment shall be used, and the remaining PCB equipment, PCB-contaminated equipment, PCB equipment in use and PCB wastes that were not disposed after March 19, 2014 shall be subject to phase-out and environmentally-sound treatment and disposal at the earliest possible time with a timetable to be indicated in the PCB Management Plan and subject for approval by the EMB Regional Office. Upon completion of the management plan, PCB owners shall submit a PCB-Free Certificate attesting that a PCB concentration of less than 2 ppm has indeed been attained
42. A technical guidance document on PCBs was issued by EMB through MC 2015-07 as an output of the integrated POPs project of the World Bank. The technical guidance provides detailed procedures and strategies for the PCB Management Process, including registration, identification, inventory, handling and

storage, preparation of PCB Management Plans. Under the UNIDO Non Com Project, a Code of Practice for PCB was also developed. The Code of Practices provide the owners of PCB-containing equipment with guidance on storage, disposal and sampling of PCB equipment.

43. Republic Act No. 10531, approved on May 7, 2013, defines electric cooperative as electric distribution utility organized and registered pursuant to Presidential Decree 269, Republic Act No. 9520 and other related laws. Section 4 of RA 10531 states that the National Electrification Agency (NEA) shall have the powers, functions and privileges to strengthen electric cooperatives, help them become economically viable and prepare them for the implementation of retail competition and open access pursuant to Section 31 of the Electric Power Industry Reform Act (EPIRA) of 2001. NEA is likewise empowered to supervise the management and operations of all electric cooperatives, provide institutional, financial and technical assistance to electric cooperatives upon request, and serve as guarantor to qualified electric cooperatives in their transactions with various parties.
44. The National Electrification Administration (NEA), created on August 4, 1969 through RA 3068, is the agency mandated to implement a Rural Electrification Program for the country. It has provided technical, institutional, and financial assistance to the electric cooperatives (ECs) which in turn undertake power distribution on an area coverage basis. ECs serve as NEA's partners in the Rural Electrification Program. They are organized as private, non-stock, non-profit, non-political entities owned and operated by the consumers in their service area. There are 119 electric cooperatives operating nationwide, 39 of which are members of the Association of Island Electric Cooperatives (AIECs). In addition, there are ECs that are under the universal charge-missionary electrification subsidy of NEA. These are ECs that are perennially government subsidized because of low or negative revenues. As of January 07, 2015, NEA has energized 20,513 sitios (villages) or 63% of the targeted 32,441 sitios which is expected to be completed until June 2016. The Sitio Electrification Program contributed to the provision of electric service to over 10.3 million consumer connections benefitting about 51 million Filipinos in the countryside. The overall electrification target is to attain 90% electrification of households by 2017, anchored on the Department of Energy's (DOE) Household Electrification Plan.
45. DENR-EMB has two sections handling the management of PCBs, the Hazardous Waste Management Section (HWMS) which regulates hazardous wastes, in this case, PCB and PCB contaminated equipment that are ready for disposal, and the Chemical Management Section (CMS) which handles the inventory of all equipment, in use and ready for decommissioning or disposal. Per initial inventory of data from EMB, only 25 ECs have registered with the Chemical Management Section and submitted their PCB Management plan and inventory.
46. In terms of policies on PCB management, the Philippines has a sound regulatory framework in place that needs to be enforced. DENR-EMB is actively conducting awareness and dissemination programs on the implementation of the PCB regulation.

#### Availability of PCB disposal technologies in the Philippines.

47. The Government of the Philippines has assumed ownership of the facility built under the UNIDO Non-Com project (GEF ID 2329), the largest PCB disposal facility ever built under a GEF POPs project. DENR-EMB, through its operational budget, has assumed the maintenance and re-start up cost of the facility since the dissolution of the PNOC Alternative Fuels Corporation (PNOC-AFC).

48. The facility has a design capacity of 750 tons per year of PCB-containing equipment and wastes, specifically PCB-containing transformers, capacitors and contaminated oil. Under the Non-Com project, the facility has successfully processed a total of 31 batches for low level PCB oil (concentration ranging from 34 to 12,261 mg/kg) and successfully treated to meet the Philippine standard level of <2mg/kg. The same performance was shown for high level PCB (400,000 to 800,000 mg/kg) destruction. The plant was able to comply with the PCB destruction target of <2mg/kg on 3 initial runs. (Final Report. Outcome of Commissioning. The Non Combustion POPs (PCB) Destruction Facility. September 23, 2014). For the sustainable operations of the facility, DENR-EMB signed an MOU with its commercial arm, the Natural Resources Development Corporation (NRDC). IPM Construction and Development, the noncom facility supplier, was subcontracted by the Government for the PCB disposal operations.
49. To strengthen the functionality of the noncom facility, additions or improvements of some of the processes, including the transformer washing system, are recommended. This will be done further assessed and implemented under the current project. This project will also ensure that it will build on the outputs achieved from the previous project while ascertaining that lessons learned and successful experiences are adopted.

*Involvement of electric cooperatives.*

50. In the 2006 NIP, the total PCB stockpile from various sources including electric utilities and cooperatives, commercial buildings, industrial establishments/manufacturing plants, military camps and bases, servicing facilities and hospitals is 2,400 tons. The electric utilities and cooperatives comprise 68% of the total weight of PCB stockpile. The previous UNIDO project focused disposal operations on the 3 major electrical companies in the Philippines - MERALCO, NAPOCOR, NGCPDENR-EMB and PSALM. there is currently a large number of small electric cooperatives which perform the distribution and transmission for provinces and cities which were not covered by the previous project. In the 2014 updated NIP, one of the identified priorities is the development and implementation of incentives for rural electric cooperatives (ECs) to comply with the phase-out of PCBs set in the MC 2015-004. This was communicated to the ECs in different consultative meetings with DENR.
51. The integrated POPs management project of the World Bank (GEF ID 3622) provided technical assistance to PCB owners, including electric cooperatives, to implement an environmentally sound management and disposal of PCBs. It ensured compliance to existing regulations such as the DAO 2004-01, Chemical Control Order for PCB; DAO 2013-12 or the Revised Procedures and Standards for the Management of Hazardous Waste; the 2008 Code of Practice on Management of PCBs; and the recently issued Memorandum Circular 2015-004. PCB management plans covering inventory with specific timelines for decommissioning, retiring, treatment and decontamination, as well as existing condition of the stockpiles, emergency preparedness and response procedures, and health and safety plan are to be prepared and submitted by 31 December 2015. Unfortunately, PCB owners still face some challenges in meeting the requirements of the PCB regulations as communicated during the preparatory phase of the project.
52. DENR-EMB actively does site inspection on PCB stockpiles for identification and labelling. Discussions with ECs management during these inspections revealed several issues which led to the conduct of regional consultative workshops during the preparatory phase of the project. Participating electric cooperatives in the workshops revealed that some of the PCB stockpiles were already bidded-out for treatment, but majority are still stored in their stockyard awaiting advice from NEA or their respective EC board. The

information gathered during the consultation was corroborated by the field reports of DENR-EMB from 2011 to 2012 in ten (10) selected ECs with the objective of updating and validating the PCB inventory as reported in the CCOs. The inspection reports showed poor storage practices of PCBs (no pallets and no PCB shelter), no laboratory analysis, and incidents of leaks and spillages and improper labeling were observed. Fifty percent of the inspected cooperatives had no Pollution Control Officers (PCOs), 30% disposed transformer oil through TSD facilities (however there was no record of these transactions), and 10% had no inventory record of the PCB stockpiles. One of the inspected facility, CasurecoIII, belongs to the ailing (red) ECs. Based on the inspection reports, there were TSD facilities identified that can handle PCB transformer oil. These are Bicol Transformer Rewinding Services & Supply (BTRSS) and Gulf Oil Petroleum Products. However, these facilities are not registered to handle PCB (L404) wastes. At present, only the Non Com Facility is registered to handle L404 wastes while there are five (5) DENR-registered transporters for such wastes.



*DENR-EMB officials during site inspection in an electric cooperative*

At the same time, the electric cooperatives also expressed the challenge in meeting the required testing for the PCB management plans due to its prohibitive cost.

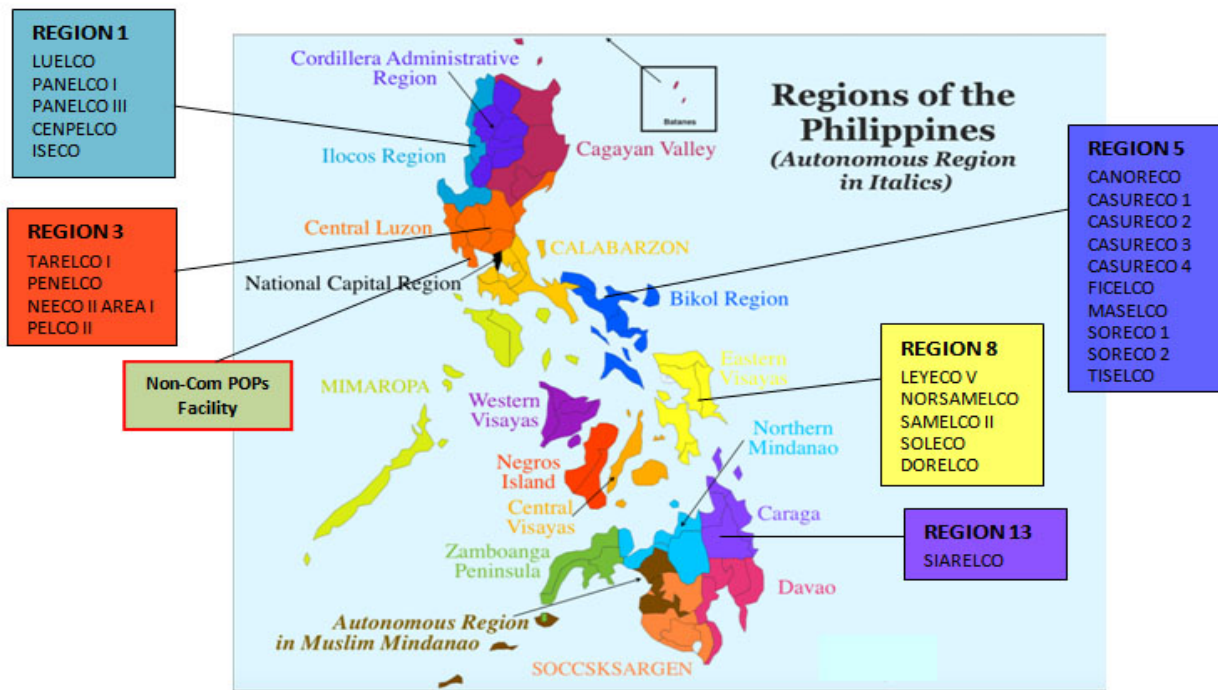
53. The current situation of the ECs dictate that technical assistance is necessary for them to comply with the memorandum circular on the formulation of a PCB plan. Consequently, financial assistance, especially for the ailing electric cooperatives, is needed.

### ***Component 3. Institutional strengthening, capacity building and awareness raising***

54. The DENR-EMB has conducted and has been recipient of a number of trainings on environmental sound management of POPs including those on identification of POPs, conducting environmental audits in industries, drafting management plans for PCBs and other POPs, conducting inventories of PCB stockpiles, and analysis of PCBs and other POPs for the EMB laboratory staff. These seminars and trainings were later extended to stakeholders such as industry generators, PCB owners, academe, and NGOs. This component of the project aims to further enhance the training, capacity building and awareness raising programs through the inclusion of sound WEEE management.
55. EMB and other stakeholders (local government units, NGOs, pollution control officers of various industries, the media, environmental laboratories) participated in the environmental baseline and monitoring activities for POPs (dioxins, furans, PCBs) in the different environmental media namely soil, air, water, sediments, and biota environmental baseline and monitoring through programmes initiated by the institution and in coordination, with several programmes being implemented by the DENR. These activities generated particular awareness among the stakeholders on the presence of POPs in various

environmental media. While analytical trainings/activities on POPs analysis have been conducted, it is envisaged to further strengthen the infrastructure and analytical capacities of the laboratory division on POPs analysis. This is in support of Memorandum Circular No. 2014-007 requiring suspected PCB containing materials be tested for Aroclors and if results are negative further testing for PCB congeners be done. In addition, there is currently no protocol for sampling and analysis for PBDE as well as a standard procedure on estimating PBDE in WEEE and WEEE generation. These activities are envisaged to be undertaken through the current project.

56. Several NGOs in the Philippines are engaged in raising awareness on POPs issues. The Ecological Waste Coalition of the Philippines, Inc. (EcoWaste Coalition) has been an important partner of the UNIDO Non-com POPs project delivering awareness programs to the general public and working with the communities around the noncombustion facility to make them understand the activities being undertaken. At present, the EcoWaste Coalition is implementing a chemical safety project, which seeks to “create an informed and vigilant citizenry that will assert the right of every citizen to information on matters affecting human and ecological health and their right to clean air, safe water, thriving wildlife and toxics-free environment,” and a zero waste project, which seeks to “promote zero waste for health, environmental, climate and social justice.”
57. Médecins Du Monde (MDM) is a Non-Governmental Organization based in Paris, France. Its Philippine branch office was established in 2013 to pilot a program for the mitigation of environmental and health hazards related to e-waste informal dismantling targeting four urban poor communities in Metro Manila. It is the only program in the Philippines which targets and partners directly with the informal e-waste sector, on a daily basis, in order to find solutions for the mitigation of sanitary and environmental exposure to toxicants. Their program focuses on the reduction of the level of exposure of the dismantlers and the promotion of protective equipment and safe dismantling areas (SDA); strengthening the capacity of communities to address their own concerns through the establishment of organization of dismantlers; and improving access to quality health care for acute and chronic health problems that may be related to the dismantling activities or the living conditions of these communities.
58. Having gained the trust of the communities and relevant stakeholders on the above mentioned issues, the continued assistance of ECOWaste Coalition and MDM on awareness raising and engaging the communities is deemed important by the project partners.
59. During the PPG stage of the project, workshops and consultations were conducted by UNIDO and EMB for the electric cooperatives based in Regions 1, Cordillera Administrative Region (CAR), 3, 5 and 8. These regions were targeted based on their proximity to the noncombustion facility and/or the availability of the PCB Management Plans of most of the electric cooperatives in these regions.



**Figure 3 Map of the Philippines showing the targeted electric cooperatives**

60. Also, during EMB inspections, there were still issues observed on the storage of decommissioned equipment, handling of transformer oils, labelling of possibly PCB-decontaminated materials and observed leaking of oil drums. Thus, training of technician from electric cooperatives and continued awareness raising should pursued and a wider representation for trainings should be targeted.

### **A.1.3 The proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project**

61. The project is consistent with the GEF6 strategy on Chemicals and Waste 1 and 2 - CW-1: Develop the enabling conditions, tools and environment to manage harmful chemicals and wastes and CW-2: Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies/substances. Specifically, it is consistent with CW-1 Program 1: Develop and demonstrate new tools and regulatory, along with economic, approaches for managing harmful chemicals and waste in a sound manner and CW-2 Program 3: Reduction and elimination of POPs. As from the GEF6 programming direction text, *“projects in this program must propose activities that bring about measurable reduction of POPs. The program will support the application of technologies, techniques and approaches for eliminating stockpiles of POPs, POPs in products, and POPs containing waste, including e-waste.”*

62. The project is therefore fully consistent with the above mentioned programs, as it includes two components specifically addressed at measurably reducing POPs from electrical equipment (PCBs) and E-waste (POP PBDEs), provision of decision making tools and economic approaches on these issues and a component aimed at raising the awareness of operators, authorities and of the general public on POPs issue.

63. Under the project, the following measurable results in term of POPs reduction have been identified:

- 600 tons of PCB oil and PCB-contaminated equipment (60 tons PCB-contaminated oil and 540 tons PCB-contaminated equipment) coming from a safeguarded amount of 852 tons identified by ECs disposed of.
- At least 1150 kg of PBDEs disposed, coming from 50,000 CRT monitors collected and recycled. .
- Capacity for the treatment of at least 50t/yr of solid PCB contaminated material (carcasses,cardboard, wood) established.
- Capacity for the disposal of at least 300t/year of POP contaminated E-waste components established.
- As an associated benefit, the project will ensure the safe disposal, through encapsulation, of around 225 tons of lead containing glass.

### *Proposed Alternative Scenario*

The proposed alternative scenario and brief description of expected outcomes and components of the project are detailed below.

#### ***Component 1: Management of POPs in Waste Electrical and Electronics Equipment (WEEE)***

64. It is clear that the reduction of PBDEs releases can only be undertaken as a portion of a more general waste management activity, which in the end, would reduce also the release of other contaminant of concern (for instance, lead from CRT monitors). This requires identification of parallel investments or existing facilities, where the component of POPs reduction representing the incremental cost is a component to be integrated into the whole recycling process; and at the same time, relevant authorities need to mainstream the POPs component into the general effort of law-making and enforcement.

65. The main objective of this component is, therefore, to prevent material containing POPs (PBDEs) and other toxic metals (lead from funnel glasses, mercury) to be recycled or released in the environment, and to dispose POPs-contaminated material in an environmentally- sound manner.

In practice, the project will operate at different levels:

- By undertaking surveys to identify the EEEs which are most contaminated by PBDEs;
- By establishing and enforcing strict rules on the import of used EEEs;
- By increasing the collection rate of POPs containing waste within the formal network;
- By promoting the shift from informal to formal operation of e-waste collector and processors;
- By establishing capacity on segregation of POPs and heavy metal component in the E-waste stream, through implementation of BAT and BEP at selected e-waste recycling facilities;
- By improving and enforcing a regulatory framework on E-waste to ensure the sustainability of the above and;
- By disposing in an environmentally sound way POPs contaminated materials.

66. The project will target mainly the waste stream consisting in end of life CRT monitors,as these are considered the equipment with the highest amount of PBDE. Other E-waste stream will, however, be also assessed during the course of project implementation. The objective of the project is to collect and safely

recycle 50,000 CRT monitors in 5 years. As CRT monitors also contain a large amount of lead in the funnel glass, the project will also undertake the ESM disposal of this non-recyclable waste stream.

To implement the strategy outlined above, the e-waste component of the project is designed to achieve the following outcomes:

**Outcome 1.1 Strengthened legislation and institutional capacity in implementing PBDE action plans**

*Output 1.1.1 A rationalized National Policy on WEEE Management formulated including incentive packages and Extended Producers' Responsibility (EPR) initiatives.*

67. As reported in the baseline, the regulation and permitting system (as prescribed by DAO 2013-22) for E waste from industrial and commercial sources are already in place. Special wastes or household hazardous wastes, which include e-waste, are also classified as hazardous waste. Under DAO 2013-22, MRFs which consolidates household hazardous wastes are required to register as TSD facility. However, to-date, there is no MRF which is registered as TSD facility with EMB. Further, as also mentioned in the baseline, EMB has drafted the Guidelines on the Environmentally Sound Management (ESM) of Waste Electrical and Electronic Equipment (WEEE). This Guideline is still at its initial stage and the provision on POPs needs to be integrated. The project will conduct gap analysis of the existing regulations on E-waste and the project will enhance and improve current policies on chemicals and wastes including better defining the role of MRF and junkshops on the management of M506 (hazardous e-waste) and M507 (special waste) waste categories. In addition, the project will identify incentive mechanisms to sustain the collection of E-waste from households, which represent currently the largest storage of E-waste, and to compensate the incremental cost associated with the segregation and disposal of POPs plastic.
68. Under this output, a quality standard for the content of PBDE in waste and plastic material will be studied. POPs BFR are currently not anymore produced or used for the production of plastic articles. The main purpose of the provision of the Stockholm Convention on PBDE and PBB is to prevent their release in the environment through the disposal and recycling of POPs-contaminated plastics. Therefore, in addition to the regulation related to the end of life stage of plastic in articles, there is the need to perform a risk assessment and a socio/economic impact assessment of proposed quality standards for PBDE in plastic articles to ensure that POP-based flame retardant cannot reenter the environment through recycling.
69. In the Philippines, the import of obsolete EEE is still continuing. Importation of used electrical and electronic equipment for direct resale and recycling is allowed under DAO 2013-22 subject to permitting requirements of EMB and compliance to the Basel Convention notification procedure. However, there is no criteria on the remaining service life and PBDE-content of used EEE which is allowed to be imported. It is reported that a substantial amount of CRT monitors from Japan and Korea are still entering the Philippines. Once these equipment reach their end of life, only the valuable scraps containing recyclable metal and the electronic cardboard are re-exported, whilst plastic and the lead-containing glasses remain in the Philippines and very often are dumped in the environment. The project, through international and national experts, will provide training and technical assistance to regulatory officers to ensure that the rules of the Basel Convention on the import of used electronic equipment are fully complied with. This will

prevent the import of almost end-of-life EEE in the country, which is a pseudo-legal method often adopted by WEEE producers/ holders to get rid of their WEEE at no cost.

**Outcome 1.2 Reduction and eventual elimination of POPS-PBDEs releases from WEEE to mitigate their health impact.**

*Output 1.2.1 Systematized and standardized system for inventory of PBDE in WEEE in the country.*

70. Currently, the knowledge on PBDE wastes is very scarce. Information on POPs in E-wastes are mostly based on limited surveys reported in the literature. Therefore, even the estimates made under NIP update activities are no more than “educated guesses” based on limited scientific evidences. In addition, although regulations like the Restriction of the Use of Certain Hazardous Substances (ROHS) are becoming a standard adopted worldwide, the presence of toxic substance in EEE and WEEE largely depends on the national and regional standards. To understand the severity of the issue of PBDE in E-waste in the country, the project will undertake a wide survey aimed at detecting PBDE and if possible, polybrominated biphenyls (PBBs) in specific waste and recycled material streams. The result of the survey will constitute the basis for the mainstreaming of a countrywide policy on E-waste management and recycling. Under the project, at least 10000 analysis with portable XRF detector will be undertaken to detect bromine in waste, of which 5% will be confirmed by GC/MS or GC/ECD methods. Statistical analysis of the result will allow to identify the key sources of these contaminants in E-waste and will constitute the basis for the country strategy on E-waste classification. Under this activity, the capacity of the concerned regulatory agency on PBDE analysis will be strengthened and the output for the inventory can be used as a decision making tool for Output 1.1.1.

*Output 1.2.2 BAT/BEP demonstrated for the sustainable sound management of WEEE at selected waste recycling facilities.*

71. The segregation of E-waste components containing or contaminated by POPs or other toxic substances like mercury implies a better organization of the recycling operation and the establishment of measures to prevent the exposure of workers to these substances in recycling facilities. The improvement of the recycling process may include the establishment of dismantling and conveyor belts, semi-automated dismantling operations, separate storages, screening, crushing, sieving etc. in such a way that the E-wastes are finally dismantled into streams which can be either directly recycled, sold to other national or international recyclers, or safely packaged for final disposal. On the side of the improvement of workplace environment, the implementation of BEP will encompass ventilation systems, training and use of PPEs, establishment of procedures and documentation, including the development of Safety Data Sheet of substances and mixtures used in the process. Recycling facilities will be also provided with XRF devices, (including maintenance and assistance for the project operation).

72. Under the project, the segregation of hazardous components of E-waste from non-hazardous will represent the opportunity for a better organization of the recycling facilities, which will in the end result in an increased productivity, reduced hidden and liability costs and better quality of the recycled resulting in the access to a larger market for the enterprises. With the efficacy of recycling technologies successfully demonstrated in this project, other LGUs will be encouraged to set up similar facilities in the country with

funds from government financial institutions such as the DBP. Under this component, it is expected that at least 50,000 CRT monitors and TV set will be collected for segregation of the PBDE containing plastic and further dismantling, amount to an estimated weight of 1250 tons and a plastic weight of around 312 tonnes. These activities will be implemented within the premises of IRI Philippines in Metro Manila and CCTFI in Cebu City. These selection of IRI, out of several pre-screened facilities, was based on its capacity to deliver the required project outputs of processing 50,000 CRT monitors over a span of 4-5 years. For CCTFI, the recently approved City Ordinance on e-wastes identified the company as the authorized treatment facility where designated collection points can deliver the collected wastes for processing. The participation of IRI and CCTFI will ensure the achievement of the target PBDE elimination.

73. Currently, the formal sector (TSDs) are mostly effective in collecting E-waste from corporates and institutions. However, the collection of household E-waste is still scarce and for the largest part in the hands of informal sector. Under this output, a mechanism to promote the collection of household E-wastes will be demonstrated and the association of informal recyclers into formal organizations of collectors will be promoted. This will be undertaken through the involvement of Medecins Du Monde already experienced in the waste sector and has established sound relationship with informal collector of E-waste. Through the implementation of this mechanism, several objectives will be achieved including the improvement of the working condition of the informal collectors, prevention of dumping or open burning of non-recyclable wastes like plastic and CRT glasses and access of formal recyclers to a household E-wastes stream.

*Output 1.2.3. Safe disposal of materials containing POP and hazardous chemicals.*

74. In plastic articles such as the monitor casing, PBDE flame retardants are held in place physically rather than chemically-bonded to the plastic material. Hence, the PBDE can be theoretically recovered via appropriate extraction procedures and subsequently treated. Currently, however, there are no commercially available technologies for the destruction of PBDE identified except incineration or possibly co-processing. Furthermore, it has to be considered that for PBDE neither the Stockholm nor the Basel convention has established an upper limit above which non-destruction technologies are allowed or recommended. This is also reflected in the EU regulation on POPs, which states that “in view of the lack of comprehensive scientific information on quantities and concentrations in articles and wastes, as well as exposure scenarios, at this stage, no maximum concentration limits can be established for PFOs and polybrominated diphenyl ethers”. Currently, a general restriction under the EU REACH regulation to limit the amount of deca-PBDE below 0.1% in plastic article is under assessment (see Annex XV Restriction report, Proposal for a restriction: substance name Bis(pentabromophenyl)ether, ECHA, August 2014).
75. Based on the above information, and considering that incineration is banned in the Philippines, the following options will be adopted for the disposal of PBDE-containing material segregated in the course of project implementation:
- In the absence of SC or BC threshold limit, the 0.1% concentration limit for PBDE established under the European ROHs regulation being proposed for deca-BDE in plastic will be adopted. Plastic waste containing PBDE at a concentration higher than the EU ROHs regulation 0.1% (1000 ppm) will be

therefore disposed as POPs waste. These waste can be either shredded and encapsulated in engineered landfills, sent abroad for final destruction, or co-processed in cement kilns.

- As of now, the percentage of CRT monitors casing contaminated by PBDE and the expected concentration level are still unknown. The project's commitment to treat around 50,000 CRT screen is based, however, on official although preliminary estimates, as follows:
  - In the study published under the Stockholm Convention website (Assessing POP-PBDEs and BFRs in E-waste Polymers In Nigeria) the average concentration of PBDE in casing of old CRT TV set was in the order of 0.69% , with only 15% found containing PBDE.
  - In the same study, out of 225 CRT computer monitor, only 8 were found to contain PBDE. The average PBDE concentration in all the monitor examined was in the order of 0.05%.
  - If the same would be found in the Philippines, then out of the 312 tons of plastic segregated from the CRT monitor, assuming they come equally from computer monitors and TV sets, around 23 tons of the TV set will be found contaminated by PBDE, with an overall PBDE weight in the order of  $312 \text{ tons} \times 0.0069 / 2 = 1.0764 \text{ tons}$  of PBDE; whilst only 6 tons of contaminated plastic with an overall PBDE weight in the order of  $312 \text{ tons} \times 0.0005 / 2 = 78 \text{ kg}$  of PBDE will be found.
  - On this basis, it can be assumed that under this output, out of 1250 tonnes of CRT monitors (50,000 units weighing 25 kg each), 312 tons of plastic screened through XRF, around 30 tons of PBDE contaminated plastic will be identified and disposed of, with an amount of PBDE destroyed/disposed in the order of 1.15 tons. It is to be emphasized that these are preliminary estimates that can only be confirmed during project implementation.
- In addition to PBDE-containing plastics, there is a need to address the disposal of lead-contaminated glass which will be segregated during the processing of CRT monitors. Lead-containing glass (the funnel glass) represents around 19% of the weight of CRT monitor. Therefore, out of the 1250 tons of monitors, around 240 tons will be non- recyclable lead glass. This type of glass will be crushed, encapsulated and disposed in special sanitary landfill cells in the Philippines.
- All other materials coming from the disposal of CRT monitors (metal, wire, non-lead glass materials) are recyclable wastes that can be easily placed on the market.

## ***Component 2. Sound Management of PCB-contaminated equipment, PCB wastes and stockpiles from electric cooperatives***

76. While the previous UNIDO Noncom project focused on the disposal of PCB wastes and stockpiles from major electrical utilities in the Philippines, this component will ensure that assistance will be provided to small electric cooperatives in the country to implement their PCB Management Plans as reviewed and approved by the DENR-EMB. A loan mechanism has also been established with the Development Bank of the Philippines to ensure that the ECs would have options to phase out and replace online PCB-containing transformers. DBP can provide loans of up to 80% of the total project cost. Thus, it is envisaged that through the project, a subsidy on the disposal cost of around 600 tons of PCB-contaminated oil and equipment maybe provided as assistance to enable qualified electric cooperatives to dispose of their PCB

stockpiles while accessing either the NEA or DBP loan for the replacement of PCB-containing transformers.

The PCB component of the project envisages the following outcomes:

**Outcome 2.1. PCB management plans of selected rural cooperatives effectively implemented.**

*Output 2.1.1 Screening criteria and financial mechanism finalized for subsidized funding for qualified electric cooperatives to implement PCB management plans.*

77. For the PCB component of the project, the aim is to assist the rural electric cooperatives (ECs) in addressing their PCB stockpiles. The inventory of the stockpiles of the ECs will be validated by the regional offices of EMB. The validated figures will be compared with the environmental management plans filed by the ECs. In addition, the management plan will be verified whether it includes the analysis of PCB stockpiles, work plan and timetable for their eventual disposal including the expected costs. In addition, all applicable items specified in Memorandum Circular 2015-004 for inclusion in the PCB management plan should be complied with. Once approved by the DENR, the PCOs of these ECs will be trained on the adopted Code of Practice (MC 2009-007) for the management, storage, transportation and ultimate disposal of PCBs for the effective implementation of the plan.

78. The project component includes the finalization of the preliminary screening and selection criteria, agreed during the PPG, to be used for ECs applying for the financial incentive program. The preliminary criteria proposed include willingness of the ECs to comply with the CCO on PCBs, status of the inventoried stockpiles, and financial capacity, among others. Qualified ECs will serve as pilot ECs of the study. It is envisaged that the loan package from the DBP and NEA will enable the ECs to replace their PCB-containing (in-service) transformers while the GEF grant will be able to provide financial incentives to the ECs and implement the PCB disposal plans of 20 ECs at the minimum, with the assumption of 30 tons PCB wastes for disposal per EC.

As electric cooperatives are governed by NEA and ERC policies, the project also aims to review these policies *vis a vis* that of DENR-EMB to harmonize PCB management-related provisions.

*Output 2.1.2 The PCB disposal facility at Limay, Bataan upgraded for undertaking further disposal of 600 t of PCB equipment coming from the Electric Cooperatives*

79. The disposal technology established in Bataan (photos below) under the UNIDO Noncom project is a batch chemical dechlorination process based on dispersed metallic sodium (Wurtz-Fittig process). It can directly process oil contaminated by PCB up to a concentration of around 5,000 ppm, while higher concentrations may only be treated through repeated treatment cycles. A detailed description of the facility is found in **Annex H**.



*The PCB disposal facility in Bataan, Philippines*

80. In order to strengthen the functionality of the facility, an assessment will be undertaken to verify the requisite improvements. A decontamination equipment for transformer carcasses and solid materials, as well as an oil regeneration unit, may be provided in order to provide complete services to the PCB wastes owners. Likewise, the facility may also be equipped with a PCB screening equipment to facilitate a quick analysis of the dielectric oil.
81. The Standard Operating Procedures (SOP), including the waste acceptance criteria, will be upgraded. Technicians involved in the disposal operations will be trained on these upgraded procedures and the operations of the new systems installed. The Environmental and Social Management Framework (**Annex I**) of the project will also be mainstreamed in the operations of the facility. Safeguards will be put in place and staff and operators will be trained on their (safeguards) proper monitoring and observance.

*Output 2.1.3. PCB wastes screened, transported, treated and disposed at the existing Non- Combustion Facility at Limay, Bataan.*

82. Based on the PCB Management Plans of the selected ECs, a processing plan will be developed. The processing plan will include pre-screening of the PCB wastes, transport of PCBs and actual disposal operations. The concentration of all PCB wastes (oil and equipment) brought to the plant will be verified. A transport management plan will be prepared and will be carried out through an accredited hazardous wastes transporter in order to ensure that proper transport protocols are observed. Disposal plan will be finalized based on the kind and availability of the PCB wastes. Under the project, it is expected that at least 600 tons of PCB contaminated equipment will be disposed, out of the 852 committed and safeguarded by the ECs.

***Component 3 Institutional strengthening, capacity building and awareness raising***

83. Management of PBDEs is a relatively new issue for the Philippines and necessitates the inclusion of capacity building and awareness raising in the project activities. It also targets inclusion of local units and informal recyclers in order to advance the knowledge on proper handling of E-wastes streams. For the PCB component, the involvement of new stakeholders will bring the awareness of PCBs (and POPs, in

general) to the level of ECs, especially those involved in transformer maintenance and actual handling of PCB wastes.

This component envisages the following outcomes:

**Outcome 3.1 Increased capacity for and awareness on sustainable and effective WEEE and PCB wastes management by relevant stakeholders.**

***Output 3.1.1 Training programs on PCB and WEEE management for relevant stakeholders designed and implemented***

84. ECs operators, managers, pollution control officers and officers from local authorities will be trained on all the aspects of the environmentally-sound management of PCBs, including national and international PCB regulations, identification and labeling, inventory, treatment and disposal options, management of PCB-contaminated equipment (use, maintenance and decontamination, health and safety requirements and procedures, management of spills and contingency plans, and prevention of PCB-cross contamination. The training will be delivered to all the ECs joining the project and will be facilitated in coordination with DENR-EMB. NEA and PHILRECA has committed to include PCB training programs in their Annual meetings and conferences.
85. Two training sessions on E-waste management that will include, but not limited to: (i) General introduction to the Basel and Stockholm Conventions; (ii) E-waste flow worldwide and in the Philippines; (iii) Specific requirement for E-waste under the Basel and Stockholm Conventions; (iv) E-waste and POPs - PBDE, PFOs, PCBs, U-POPs; (v) the issue of open burning and safe incineration; (vi) E-waste and toxic metals: lead, mercury, cadmium; (vii) E-waste regulation in the Philippines; (viii) the REACH regulation and the WEEE and ROHs directive; (ix) E-waste collection issues: formal and informal collectors; (x) E-waste disposal, segregation and recycling technologies. The training will be delivered to around 30 accredited industries involved in e-waste recycling operations and to regulatory officers.

Training on PBDE analysis and inventory will be provided to the relevant laboratory staff of DENR and its local offices and to academic professionals engaged on POPs research.

The evaluation of training effectiveness will include as a minimum: a preliminary test, based on questionnaires with closed-ended questions specific for each training topic; a final test, based on desk exercises or based on real cases as well as questionnaires; and a feedback form to be distributed to the participant for evaluating the trainers and for providing suggestions for improvement of the training.

***Output 3.1.2 Awareness programs on WEEE and PCB waste management conducted and knowledge management infrastructure established.***

86. The main purpose of the awareness raising programs on WEEE and PCB is to inform stakeholders not necessarily involved directly on the management of PCBs and WEEE, on the risk posed by the mismanagement of hazardous waste, on the modality to prevent and manage POPs contamination, on the job opportunities which may be generated through proper implementation of sound management of hazardous waste and chemicals. Therefore, the awareness raising program will include both broadcasting

of awareness raising materials (TV, radio, website) and more conventional and widespread communication program through short lessons in highschoools, and local communities, including communities where informal recyclers operate. The content of awareness raising programs will be targeted to the audience. The following activities shall be carried out under this output:

- Drafting and endorsement of a communication strategy related to the environmentally sound management and disposal of WEEE and PCBs, and more in general, on the environmentally sound management of hazardous chemicals and waste.
- Holding awareness workshops raising which will involve, at the minimum, the following:
  - Workshops for the scientific and technical community (Universities, laboratories, waste management companies)
  - Workshops for community stakeholders for both PCB and WEEE component.
  - Workshops/short lessons (2 hours) for highschool students on scientific courses (at least 20 highschoools receiving one lesson)
  - Practical workshops for communities of informal E-waste recyclers, with support from NGOs. At least one workshop delivered to not less than 10 communities)
  - Preparation and distribution (broadcasting and / or publication on the web) of awareness raising materials

Ecowaste Coalition and MDM will support UNIDO and DENR-EMB in the delivery of the awareness raising programs for the targeted stakeholders on PCBs and E-wastes, respectively. Gender dimensions will be incorporated in all the awareness raising activities to be undertaken,

87. Under this output, knowledge management (KM) actions will be carried out and a KM infrastructure will be established. The knowledge management system to be established for this project is detailed in Section A.8.

#### ***A.1.4 Incremental/Additional cost reasoning and expected contributions from the baseline, the GEF TF, LDCF, SCCF, and co-financing***

A summary of the baseline, incremental cost reasoning and cofinancing elements is provided in the table below:

<b>Baseline</b>	<b>Co-financing budget (USD)</b>	<b>Alternative Scenario</b>	<b>GEF Grant (USD)</b>
<b><i>Component 1: Management of POPs in Waste Electrical and Electronics Equipment (WEEE)</i></b>			
DENR (Department of Environment and Natural Resources) has completed the draft “Guidelines On The	Co-financing from DENR-EMB on all activities related to the improvement and enforcement of regulation on E-Waste and	Waste regulation and guidelines, including provisions on POPs and hazardous chemicals, POPs and hazardous substance	2,780,000

<p>Environmentally Sound Management (Esm) of WEEE.”</p> <p>The implementation of DAO 2013-22 specifies that a separate stream for WEEE be part of the regular recovery activities in all MRFs. However, no POPs-related provision is established.</p> <p>Isolated efforts on inventory and collection have been undertaken but needs to be further strengthened.</p> <p>Without the project, the collection and recycling of WEEE will remain largely in the hands of informal recyclers, with a limited presence of formal recyclers (for instance IRI and CTFs) processing mostly WEEE from corporates and institutions. The issue of POPs in plastic waste will remain unaddressed.</p> <p>No technologies for the destruction of POPs PBDEs will be demonstrated or implemented in the country, and plastic from WEEE will continue to be dumped or burnt in the open, with release of POP-PBDEs, U-POPs and harmful chemicals (lead and mercury)</p>	<p>Hazardous waste and provision of analytical services on POPs (USD 3,244,444)</p> <p>Private companies co-financing (IRI for USD 2,070,843 and CCTFI for USD 266,206) related to the following aspects:</p> <ol style="list-style-type: none"> <li>1) Processing facilities and planned investment in the waste segregation process</li> <li>2) Planned investment for reducing health risk for workers</li> <li>3) Personnel which will be dedicated to waste segregation or other activities relevant to the project</li> <li>4) Planned upgrades of waste storage facilities</li> <li>5) Incremental costs related to the segregation of POPs contaminated material which otherwise would be sold or landfilled</li> </ol> <p>In addition to that, MdM will provide in cash and in kind cofinancing associated to their parallel projects aimed at E-waste collection and support for the formal registration of E-waste associations / cooperatives. (USD1,700,000)</p>	<p>concentration limits for EEE and WEEE will be formulated and mainstreamed. Incentive packages and EPR initiatives will be established.</p> <p>The Basel convention criteria related to the classification and management of hazardous E-waste will be integrated in the existing or new regulations and guidelines.</p> <p>A system for the monitoring and inventory of POPs in E-waste, based on practical handbook, sampling and analytical methodology, will be demonstrated.</p> <p>Two E-waste recycling plants will be upgraded to improve the identification and the segregation and safe storage of POPs containing waste. Materials contaminated by PBDEs and other harmful substances coming from the recycling of CRT monitors (50,000 sets) will be identified and properly disposed.</p> <p>Sustainability of actions will be ensured through the establishment of incentive mechanisms and technical assistance on the enforcement of the new or improved regulations.</p>	
<p><b><i>Component 2: Sound Management of PCB-contaminated equipment, PCB wastes and stockpiles from electric cooperatives</i></b></p>			

<p>The Chemical Control PCB legislation already in force in the Philippine, however there are still enforcement issues: indeed, out of the 120 electrical cooperatives (ECs) operating in the country, only 26 submitted data on PCB equipment.</p> <p>Without the project, there is a substantial risk that ECs – lacking technical and financial resources – will improperly dispose their PCB equipment – estimated at 852 tons. There will be little commitment from ECs to complete the inventory of PCB contaminated equipment.</p> <p>The PCB noncom facility built in 2014 under the GEF project 2329 is currently operational and will complete the disposal of 1500t of PCBs as envisaged under co-financed contribution for that project. This however will not include the PCB equipment from the ECs.</p>	<p>Cash co-financing facilitated by a loan granted by the DBP for a maximum amount of USD 12M to be disbursed to ECs fulfilling the criteria for financial support.</p> <p>A number of 26 ECs committed to provide co-financing to the project in terms of:</p> <ol style="list-style-type: none"> <li>1) PCB contaminated transformers replaced with financial support from the loan;</li> <li>2) Storage facilities to safeguard PCB wastes;</li> <li>3) Sampling and analytical cost, including missed electrical production due to sampling and replacement operation.</li> <li>4) Transportation expenses (of equipment to the disposal site)</li> <li>5) Personnel participating in project activities</li> </ol> <p>for an overall amount of USD 6,520,396</p> <p>Co-financing from DENR-EMB, including its regional offices, on all activities related to the improvement and enforcement of regulation on PCBs including site inspection and PCB management plans review and approval and analytical services on POPs. (USD 3,108,393)</p> <p>Co-financing from NEA on coordination and training (USD 662,453)</p>	<p>For Component 2, strengthening of the functionality of the facility will be undertaken to ensure that the facility can provide complete services to the PCB owners.</p> <p>At least 600 tons of PCB-containing equipment and wastes from electric cooperatives will be safely disposed. Prioritization of the criteria for access of the grant and the available loan will be set-up together with the Development Bank of the Philippines and DENR-EMB.</p>	<p>2,520,000</p>
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<b>Component 3: Institutional strengthening, capacity building and awareness raising</b>			
<p>Training and awareness raising activities have been undertaken in the past but awareness on POPs issues is still very limited. Knowledge on PBDE management still needs to be addressed while PCB awareness is very limited among ECs and other new partners.</p> <p>Without the project, the awareness on POP-PBDEs, HBB and PFOs among waste recycler will remain substantially absent.</p> <p>There are no knowledge management system implemented for the E-waste sector while there is an online PCB management system under the DENR website philpcbtracker.com.</p> <p>Without the project, awareness on gender mainstreaming issues in the environmental and waste management activities will remain absent.</p>	<p>Co-financing from DENR-EMB on all activities related to the training and awareness raising activities on POPs, including Gender and Development (GAD) initiatives (USD 1,987,692)</p> <p>Co-financing from NEA on coordination and awareness raising (USD 1,567,153)</p> <p>Total co-financing from baseline activities, including monitoring and project management, USD 35,868,712</p>	<p>Under the alternative scenario for component 3, training will be delivered to all the ECs joining the project. At least two training sessions, on E-waste management and POPs for at least 30 recycling facilities and regulatory officers will be conducted.</p> <p>Awareness program on WEE and PCB waste management will published via different media.</p> <p>Workshop and lessons for communities and highschoools will be deliverd.</p> <p>Requirements for gender mainstreaming as per the GEF, UN and country policies will be fulfilled throughout all project activities, including equal access to job opportunities and training, and equal access to information and awareness raising events.</p>	400,000

88. For Component 1, the GEF grant will support only the incremental cost aimed at segregating PBDE contaminated plastic from non-contaminated plastic, and the disposal of POPs contaminated plastic. The demonstration of segregation of PBDE plastic will have the beneficial effect to increase the capacity of the recycling industry to efficiently dismantle WEEE and separate recyclable from non-recyclable components. In addition, the identification of PBDE contaminated plastic by means of XRF handheld detectors , and the statistical assessment of the analytical data by contaminated brands / type of equipment will allow to establish more efficient and economic procedures for the segregation of contaminated plastic, therefore reducing the future cost of segregation. The project will also assess possible technologies that may be adopted to address PBDE management. The usual disposal practice is to landfill PBDE contaminated

plastics. During the course of the consultation process, the possibility of extracting PBDEs from the plastics and treating the extracted solution was considered a possibility but the financial viability of this option is to be further studied.

89. For Component 2, the GEF grant will be used to subsidize the disposal of PCBs from rural cooperatives and to further enhance the suitability of the existing facility to treat all PCB-contaminated materials including solids and metallic parts. Transformer replacement program will be financed through the loan package from DBP.

#### ***A.1.5. Global Environmental Benefits***

90. The project is expected to achieve effective management of POPs-PBDE from WEEE, and PCB wastes and PCB-contaminated equipment. These targets are essential to minimize or even eliminate exposure to POPs of stakeholders directly involved in the disposal, dismantling, and recycling of WEEE and PCBs, as well as those who may be exposed due to their lack of awareness on risks and those in close proximity to contaminated sites. Successful implementation of the project components will contribute significantly to the global environmental benefit of reducing risks to human health. Improper disposal of WEEE to landfill sites, as well as mismanagement of PCBs could be eliminated through implementation of the project, thereby avoiding pollution of groundwater and surface water, as well as emission of toxic fumes to the atmosphere. As such, ecosystems are protected, while biodiversity is also preserved.

91. Under the project, the following measurable results in term of POPs reduction have been identified:

- 600 tons of PCB-contaminated oil and equipment coming from a safeguarded amount of 852 tons identified by ECs disposed through a subsidy program;
- At least 1.150 tons of PBDEs disposed, coming from 50,000 CRT monitors collected;
- Capacity for the treatment of at least 50t/yr of solid PCB contaminated material (carcasses, cardboard, wood) established;
- Capacity for the disposal of at least 300t/year of POP contaminated E-waste components established and;
- As an associated benefit, the project will ensure the safe disposal, through encapsulation, of around 225 tons of lead containing glass.

#### **A.1.6 Innovativeness, sustainability and potential for scaling up**

92. The proper disposal of POPs containing waste (in this case, either PCBs in electric equipment or PBDEs in plastic) always entails an additional cost for the owners of the contaminated material. Besides the GEF grant, which is intended to support part of the PCB disposal cost, the project will establish a financial mechanism (based on a competitive loan package) which will facilitate replacement of transformers and improvement of TSD facilities for both e-wastes and PCBs. This is an innovative approach as the traditional elements of the loan packages being offered by local development banks centers on building of infrastructure that addresses environmental issues. A new loan modality was instituted bringing about 'special' loan packages that maybe provided for both the phase out of PCBs and disposal of the wastes. DENR-EMB is poised to work hand-in-hand with DBP, as well as other financial institutions to assist eligible stakeholders in gaining access to financing programs for projects on improved environmental compliance, pollution control and waste management.

93. The sustainability of the project outputs will be ensured by: (i) strengthening implementation of policies, laws and regulations related to PCB and WEEE management; (ii) mobilization of stakeholders becomes self-sustaining given the critical mass of the project activities; (iii) collaboration with financing institutions such as the Development Bank of the Philippines (DBP) can also augment existing programs to ensure sustainability; (iv) design and establishment of knowledge management framework and; (v) financial sustainability maybe ascertained through the emergence of disposal and recycling sectors dedicated in supporting sound management of both PCBs and e-wastes and of the EPR policy that will be implemented.

94. Scaling up and replication are highly feasible as there are more than 100 ECs in the country that may benefit from the project outputs. The envisaged mechanism of funding transformer replacement, even disposal, through loan packages will ensure that the funding for PCB management efforts in the Philippines will be fully accessible. Lessons learned from the previous PCB project would also contribute to the scale up potential. For E-waste management, the strengthening of national policies and the results of the demonstration activities will be highly useful in the scale up and replication of the efforts.

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

Not applicable

*A.3. Stakeholders.* Identify key stakeholders and elaborate on how the key stakeholders engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes ☒ /no ☐)? and indigenous peoples (yes ☐ /no ☒)? <sup>8</sup>

While the project envisages collaboration with governmental institutions, private industry, civil society, NGOs and local communities, the participation of indigenous people is not foreseen.

DENR-EMB	The Environmental Management Bureau is a supporting body for the Department of Environment and Natural Resources. Being the national authority responsible for pollution prevention and control, and environmental impact assessment, EMB will be the lead executing agency for the project.
Development Bank of the Philippines (DBP)	DBP is the country's premier development financial institution. It promotes inclusive Green Growth of the Philippine economy by providing "Green Loans" and technical advisory assistance to various clients. Its "Green Loans" program finances environmental projects such as pollution prevention and control, waste management, sanitation, clean transport and renewable energy. DBP's "Green Financing Program" designed to stimulate environmental investments in strategic sectors and industries, will be tapped to finance major components of the project namely PCB

<sup>8</sup> As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.

	management for the rural electric cooperatives and the collection and treatment of WEEE in the LGU target area.
Local Government Units (Metro Manila and Cebu)	Metro Manila area and Cebu are targeted for the demonstration activities on inventory and collection envisaged in the project. Other LGUs will be involved on the training activities and in the dissemination of lessons and learnings from the project.
IRI	IRI was established in 2001 and is located in an industrial park in Metro Manila. It conducts business in the area of reclamation of precious metals, treatment of hazardous wastes, crushing of discarded equipment, purchase of materials for metal reclamation and plastic recycling, disposal of scrap materials. IRI will partner the project in segregating and safeguarding PBDE contaminated plastics from E-waste in Metro Manila area.
CCTFI	CCTFI is an environmental service provider established initially to help the electroplating industry in treating and disposing its hazardous wastes properly. CCTFI was established on July 1996 as an outcome of the former GTZ-assisted Industrial Pollution Control Cebu Project conducted by the DENR. CCTFI will partner the project in segregating and safeguarding PBDE contaminated plastics from E-waste in Cebu.
Owners of Treatment, Storage and Disposal (TSD)	The TSDs participating in the project will partner with the target LGU in providing preliminary treatment to WEEE collected by MRFs. It is expected that TSDs will increase their capital expenditures to accommodate increased WEEE as a result of improved waste collection efforts by LGUs.
Natural Resource Development Corporation (NRDC)	NRDC is the corporate arm of the DENR and mandated to create market for products and technologies and other natural resource-based commodities. It will be the operational entity in charge of coordinating the commercial management of the Bataan facility and the relationships with the plant operator and electric cooperatives, owners of PCB contaminated equipment to be disposed of. The operational management of the plant will be bidded out.
National Electrification Administration (NEA)	NEA is the government agency tasked with the total electrification of the Philippines. It partners with electric cooperatives (ECs) to ensure that they become more efficient, reliable and competitive. They will be involved in the capacity building and information dissemination requirements of the project.
ERC	The Energy Regulatory Commission is an independent regulatory body acting as a quasi judicial, quasi legislative, performing administrative functions in the electric industry. The role of ERC

	is focused on two primary responsibilities: to ensure consumer education and protection, and to promote the competitive operations in the electricity market.
PHILRECA	PHILRECA is a non-stock non-profit, and non-political organization, of 119 Electric Cooperatives operating in the Philippines. Through their association, Annual Conferences with General Managers of ECs, and monthly Board meetings are being organized. PHILRECA also serves as conduit between the ECs, NEA and the ERC.
NGOs (Medicine du Monde, ECOWASTE)	The NGOs will be tasked to carry out the awareness raising activities of the project. They will be working mainly with the affected communities. MdM contribution will be crucial in achieving the project's aim of reduced health risks of informal WEEE dismantlers and in including them into the formal stream. ECOWASTE continued role in supporting education and awareness raising of the communities around the PCB noncom facility is, likewise, envisaged.
Academe and relevant industrial and professional organizations	The academe will assist in implementing the project's awareness raising component by incorporating impact and mitigation of WEEE in short courses and seminars designed for accreditation of PCOs by EMB. Partnerships with industrial associations, such as PHILRECA for PCB management, and association of recyclers in the Philippines will also be undertaken to ensure that a wider reach of beneficiaries are engaged.

A.4. Gender Equality and Women's Empowerment. Elaborate on how gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes ☒ /no ☐)?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes ☒ /no ☐)?; and 3) what is the share of women and men direct beneficiaries (*approx.*: women 40%, men 60%)? <sup>9</sup>

95. Gender and Development (GAD) considerations will be made an integral part of the project strategy in consideration of the Gender policies of the GEF, UNIDO and the DENR-EMB. A preliminary gender analysis (**Annex J**) was conducted during the preparatory phase of the project to mainstream gender dimensions into the project elements. Gender indicators were also provided in the logical framework of the project. A midterm and final analysis on gender mainstreaming will be undertaken in order to measure the success of the project in this issue.

96. It has been noted that one of the key actions undertaken by the GEF relative to gender mainstreaming was to incorporate gender responsive approaches and indicators in the GEF-6 focal area strategies in which

<sup>9</sup> Same as footnote 8 above.

focal area projects will incorporate GEF gender indicators which will be monitored in the project eventually. UNIDO, for its part, has included gender dimension in the design, implementation, monitoring and evaluation of programs, projects and activities developing its tools and guidelines on mainstreaming gender in the whole gamut of project management. The most significant UNIDO tools and guidelines that are consistent with the GEF's Gender Mainstreaming Policy include Gender Mainstreaming the Project Cycle, Gender Mainstreaming Guide for Environment, Gender Analysis Template and Gender Expert Database.

97. In the Philippines, Gender and Development (GAD) focuses on the promotion of gender equality and women empowerment. The Philippine Commission on Women (PCW) in its efforts to make governance gender responsive are promoted through legislation, such as the Magna Carta of Women (MCW) which mandates non-discriminatory and pro-gender equality and equity measures to enable women's participation in the formulation, implementation, and evaluation of policies, plans, and programs for national, regional, and local development. The Philippine Framework Plan for Women (FPW) indicated actions planned for gender responsive governance to be undertaken by government agencies, local Government Units and civil society. Details of which are found in **Annex J**.
98. The different line agencies including the Department of Environment and Natural Resources including the Environmental Management Bureau are expected to comply strictly especially in the utilization of funds as GAD funds utilization is strictly looked into by the Commission on Audit (COA). DENR-EMB should ensure that agencies plans, programs, projects and activities are aligned to the Philippine Plan for Gender-Responsive Development 1995-2025 that it strictly monitors the use of GAD funds for the purpose for which they have been appropriated. Interesting to note that in the project on PCB, there must be active promotion of non-sexist language in the DENR-EMB and generation of sex-disaggregated data which are very important in the formulation of gender-responsive policies, programs, projects and activities.
99. In the implementation of the project, the following shall be done in order to integrate gender dimension in the whole gamut of project management. These steps maybe distinct activities or maybe incorporated in the different activity components of the project:
- Assess and categorize the potential of the project to integrate gender dimension and contribute in the advancement of women empowerment and gender equality.
  - Collection and analysis of sex-disaggregated data and qualitative information to understand roles and needs of women and men in the project. This will be done both at the project team level and project implementation level. Identification of the number of female and male project team members, determination of the roles and responsibilities in the project and ensure that in the documentation of the various project activities, contribution of male and female participants are documented through attendance sheet and other project document. Target of at least 40% women and 60% men is considered reasonable considering the concerned sector.
  - The project must ensure that the project activities meet the specific needs of women and men. Capacity building activities will ensure that training curricula and tools are developed to accommodate the different education/skill levels that may exist between women and men.

- Mechanisms to ensure gender balanced representation and participation in project activities and decision-making processes (target at least 40% of whichever sex is underrepresented) will be established.
- Gender-specific targets or performance indicators that track gender results and impact including number of men and women, number of gender sensitive publication produced by the project, etc. will be developed.
- Any adverse impacts or risks that may affect the equal access to, equal participation in and/or equal benefit from project activities among women and men will be taken into account. One possible activity will be to identify if there are any cultural/ religious/legal restrictions that would not allow women or men to access or participate in project activities.
- Equal opportunity for women and men in the management and implementation arrangements of project will be ensured.
- Sufficient financial resources for gender equality and women's empowerment activities will be allocated. The PMU should attend a basic gender course. Also, gender expert consultant will be engaged to ensure gender issues are addressed during implementation; a comprehensive gender analysis and baseline exercise in the field at project implementation will be undertaken.
- Capacity within the project team and among stakeholders to ensure gender-responsive implementation and the continued integration of a gender perspective within the sector/area of intervention after the project ends will be endeavored.
- Access, participation, and benefits among women and men and incorporate remedial action that redresses any gender inequalities in project implementation will be monitored. Report on how gender is mainstreamed will be generated and mid-term reviews, assessments, audits, etc. will include gender as a specific criteria/component.

**A.5 Risk.** Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

100. In the following table, the risks, risk categorization and proposed countermeasures are identified and listed by project component. Given the experience accumulated through other projects, the overall risk for the project is considered low.

<b>Risks</b>	<b>Risk type</b>	<b>Risk level</b>	<b>Proposed mitigation measures</b>
Resistance from informal sectors involved in WEEE	Technical	M	Partnering with NGOs with very specific experience in cooperating with informal sectors with the specific role to increase

collection and dismantling to modify their operations			awareness and promote the shifting toward the establishment of formal waste collection operation, linking them to the formal network or providing alternative livelihood options.
Segregation scheme impractical or not sustainable	Technical and Financial	L	The technical and financial support from the GEF is aimed to cover the incremental cost associated with the segregation of POPs containing E-waste. Technical and financial analysis of segregation scheme tailored to the specific recycler will be carried out to verify its impact and sustainability.
POPs contaminated E-waste not reaching the project target.	Technical	M	Although this risk cannot be completely excluded due to the fact that inventory are based on indirect measurement of POPs, it is very likely that the inventoried POPs contaminated E-waste are an underestimation of the actual situation.
Disposal technology for POP contaminated plastic not available in the country or too expensive compared to available funds	Technical – Financial	L	Market research will be undertaken to ensure that all possibilities have been studied.
Disposal cost not competitive	Financial	M	An international bidding to improve the capacity of the plant will be held so that the technology improvement adopted will fulfill strict and financial requirements. The project will subsidize disposal costs for the ECs to ensure the competitiveness of disposal services
Low participation and interest from the stakeholders to participate in awareness raising activities or training	Technical	L	Different methodologies and targeted materials will be developed to generate interests among stakeholders.

Climate change associated risks	Environmental	L	The Philippines is a country prone to natural disasters associated with climate change. The disposal facility is, however, located in an area with very low hydrologic risk. The project will reduce the environmental effect of flood by removing sources of POPs.
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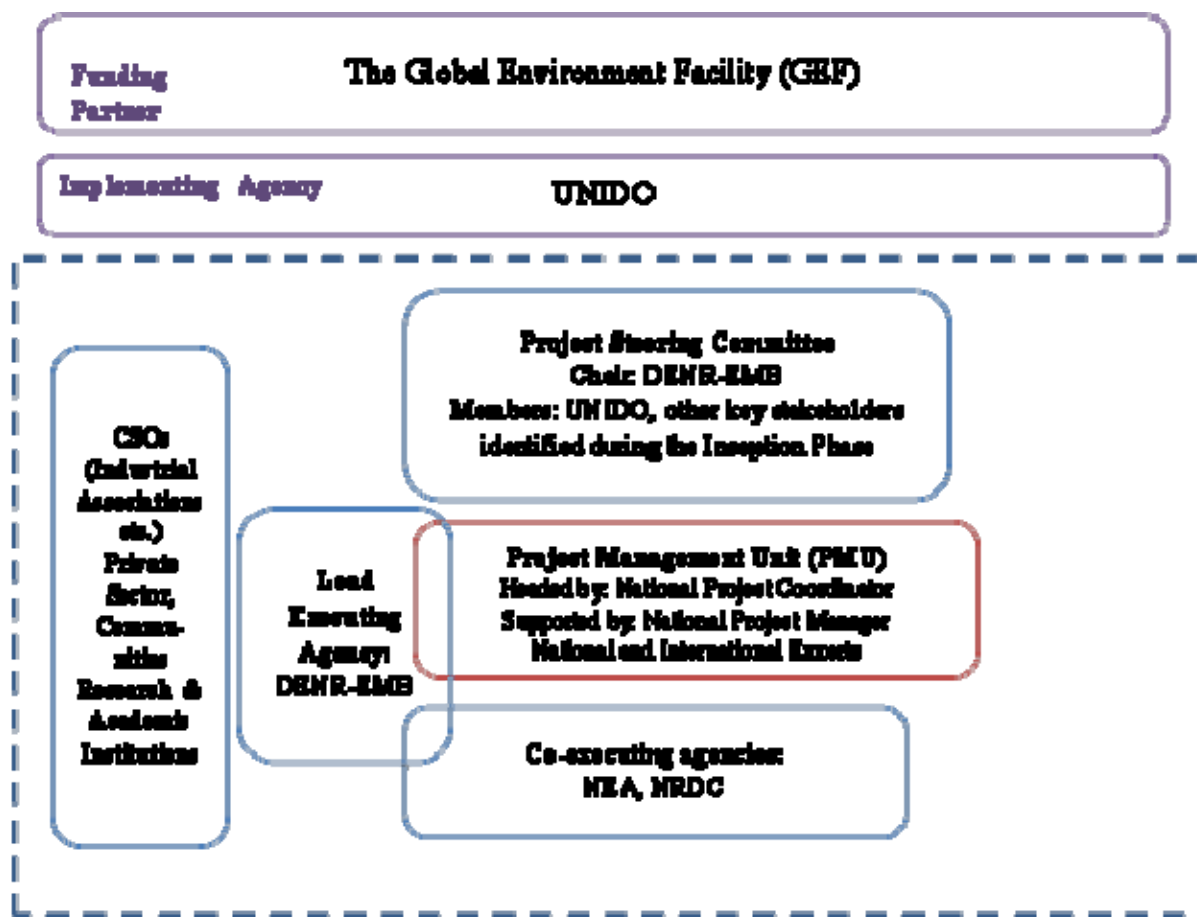
*A.6. Institutional Arrangement and Coordination.* Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

#### A.6.1 Institutional Arrangement

101. The institutional arrangement for project implementation is provided in **Figure 4** below. UNIDO is the GEF Implementing Agency (IA) for the project. A project officer will be appointed in UNIDO HQ to oversee the implementation of the project, assisted by a support staff and supervised by a senior professional staff engaged in the management and coordination of UNIDO's Stockholm Convention Programme. The UNIDO Country Office in the Philippines will also play a significant role in the supervision and monitoring of the project. UNIDO country-level monitoring will be provided as part of the in-kind contribution of the organization to the project.

102. The Department of Environmental Resource through its Environmental Management Bureau (DENR-EMB) will be the lead executing agency for the project. Co-executing institutions will include:

- Natural Resource Development Corporation (NRDC) will be the operational entity in charge of coordinating the commercial management of the Bataan facility and the relationships with the plant operator and electric cooperatives and owners of PCB-contaminated equipment and wastes to be disposed of.
- The National Electrification Administration (NEA) will have also a role in facilitating PCB elimination through the project, by providing the Electric Cooperative with the financial, technical and institutional assistance needed.



**Figure 4 Project implementation structure**

103. The Project Management Unit will be established in the DENR-EMB premises. A National Project Director (NPD) from EMB will be appointed and would chair the Project Steering Committee. A National Project Coordinator (NPC), also from the Ministry, will be assigned by the NPD to oversee the activities of the project. Having two main components, two National Project Managers (NPMs) may be recruited to manage and execute the day-to-day tasks required by the project and a Project Assistant who will be in charge of the administrative functions required. UNIDO will provide execution support by recruiting international and national experts based on specific required tasks. The NPM will be responsible for drafting the reportorial requirements of the project including progress reports, annual work plans, GEF project implementation report (PIRs) and country reporting requirements based on the prescribed formats. The PMU is responsible for informing UNIDO of any delays or difficulties during the implementation so that appropriate support or corrective measures can be adopted in a timely and remedial fashion.

Targets and indicators will be reviewed annually as part of the internal evaluation and planning processes undertaken by the PMU. The project will also adhere to the Environmental and Social Monitoring Framework (ESMF) as proposed in **Annex I**.

104. A Project Steering Committee (PSC) will be established, chaired by the National Project Director from DENR-EMB and will comprise of representatives from relevant ministries, UNIDO and other relevant stakeholders. The members of the PSC will be finalized during the project inception phase. The PSC will

hold its regular sessions at least once a year throughout the project implementation, but additional meetings can be held if necessary. Technical Working Groups (TWGs) will be established depending on the requirements of the project. The TORs of both PSC and TWG will be formulated and agreed during the project inception phase. The PSC and TWG should make necessary decisions within the rules and regulations of UNIDO and the GEF as per GEF C.39/inf3.

105. UNIDO will enter into contractual agreements with NRDC as executing partner on the execution of PCB disposal activities at the noncombustion facility in Bataan (Component 2). NRDC, as the designated operating entity by DENR-EMB of the noncombustion facility, will lead the actual execution of the PCB disposal activities. A preliminary institutional assessment was conducted on NRDC to ascertain their capacity to execute the activities stipulated under Component 2 of the project. The Terms of Reference will be developed, together with DENR-EMB, during the inception phase to detail the work that needs to be undertaken by NRDC

106. Contractual arrangements will also be established with the Integrated Recycling Industries – Philippines, Inc. and Cebu Common Treatment Facilities Inc on the processing (screening and segregation of collected CRT monitors) as part of Component 1. IRI is the pioneer and leading treatment, storage and disposal facility in the Philippines that is engaged in e-wastes recycling registered with the Environmental Management Bureau. With a processing capacity of 2 tons per day of electronic scraps, IRI is expected to facilitate, in part, the attainment of the project target GEB of 1.15 tons of PBDE by collecting and safely recycling 50,000 units of CRT TV and computer monitors in 5 years. The company complies with all the existing environmental laws and regulations in the Philippines and conforms to international standards with certifications for ISO 9001:2000, ISO 14001:2004, and OHSAS 18001:2007. CCTFI, on the other hand, is a registered hazardous waste collection and treatment facility of the Environmental Management Bureau and had started expanding its capacity for handling e-wastes through its subsidiary, the Cebu E-Resources Recovery, Inc. (CERRI) in 2014. In partnership with malls in Cebu with the trash-to-cash program which encourages residents to bring collected e-waste to its monthly recycling market, CCTFI is the appointed recycler which buys the e-wastes at the same price as the junk shops. The recently approved Cebu City ordinance on e-wastes also identified CCTFI as the authorized treatment facility where designated collection points can deliver the collected e-wastes for processing. The participation of CCTFI in the project will aid in the achievement of the target GEB and other project outputs. As the project required technically-equipped facilities to undertake the activities, DENR-EMB endorsed the aforementioned facilities as project partners.

Once segregated and collected from IRI and CCTFI, the disposal of PBDE-containing plastics will be undertaken through an open-competitive process under UNIDO procurement rules and procedures.

All corresponding contract-related reports to be submitted will need to be approved by DENR-EMB, through the Technical Working Group either through meetings or circulation to members, and endorsed to UNIDO for further review and approval before payment is effected.

107. A market survey of Philippine NGOs was undertaken during the PPG to ascertain their capacities in terms of delivering the required awareness raising activities and outputs. Pre-selected NGOs were required

to present their work in the relevant components of the project. Based on these, DENR-EMB endorsed the following NGOs to support the delivery of some project components:

- (i) Medicine du Monde to work with the informal e-waste sector integrating their activities into the formal sector. Médecins Du Monde (MdM) is an NGO based in Paris, France. Its Philippine branch office was established in 2013 to pilot a program for the mitigation of environmental and health hazards related to e-waste informal dismantling targeting four urban poor communities in Metro Manila. It is the only program in the Philippines which targets and partners directly with the informal e-waste sector, on a daily basis, in order to find solutions for the mitigation of sanitary and environmental exposure to toxicants. The program aims to reduce the level of exposure of the dismantlers and the promotion of protective equipment and safe dismantling areas (SDA); strengthen the capacity of communities to address their own concerns through the establishment of organization of dismantlers; and improve access to quality health care for acute and chronic health problems that may be related to the dismantling activities or the living conditions of these communities.

As the project intends to strengthen the collection of household e-wastes and the promotion of association of informal recyclers into formal organizations, the project will touch base and build on MdM's current experience and efforts on e-waste informal recyclers.

- (ii) Ecowaste Coalition to provide support on PCB awareness raising activities, especially with the communities around the PCB noncombustion facility. Ecowaste Coalition has been an important partner of the UNIDO Noncom POPs project delivering awareness programs to the general public and working with communities around the facility to make them understand the activities being undertaken. Ecowaste Coalition is an independent and not-for-profit environmental network of over 100 public interest groups promoting chemical safety and zero waste to protect the public health and the environment. It has 15 years of track record in coalition-building for environmental health advocacy. It creates and supports various initiatives and platforms for green activism for its members in line with the constitutionally-guaranteed rights to health and to a balanced ecology.

The project partners endorsed the continued assistance of Ecowaste Coalition to deliver awareness raising activities for the PCB component of the project.

#### A.6.2 Coordination with other GEF initiatives

108. The proposed project will build on previous and ongoing GEF projects in the Philippines. The results and lessons learned from the UNIDO-GEF-DENR Non-Com POPs Project, *"Global Programme to Demonstrate the Viability and Removal of Barriers that Impede Adoption and Successful Implementation of Available, Non-combustion Technologies for Destroying Persistent Organic Pollutants (POPs)"* (GEF ID 2329), which facilitated the deployment of a noncombustion technology for the PCB treatment in the Philippines, will be considered during project implementation.

109. Another associated project is the WB-GEF-DENR Integrated Persistent Organic Pollutants (IPOP) Management Project. The project components include: strengthening the regulatory framework and

capacity building for POPs monitoring, reducing releases of unintentionally produced POPs, managing PCBs, and identifying and remediating POPs contaminated sites. With existing initiatives to build capacity for the reduction and containment of POPs, stakeholders in the project will coordinate in areas of training and information dissemination to raise public awareness, as well as the improvement in the methodology for characterization and audit of POPs from identified sources.

110. The GEF-UNIDO project on BAT/BEP for fossil fuel-fired utilities and industrial boilers: implemented in 2011, the project aims to reduce POPs releases through capacity building towards an implementation of BAT/BEP schemes in fossil fuel-fired power utilities and industrial boilers. Complementing the project's capacity building for industry is the development of a curriculum of study for engineering students featuring green boiler technology; it has been expanded and adopted for future trainers. The capacity building and awareness raising components on POPs issues will be coordinated with the project.

111. The newly approved GEF-UNIDO regional project on reduction of UPOPs releases from open burning activities which aims to assist in the rehabilitation of dumpsites and develop the municipal recycling facilities in target areas in the Philippines would support the initiatives of the current project in terms of WEEE management. Full coordination will be undertaken with the project team to develop complementary activities.

Additional Information not well elaborated at PIF Stage:

*A.7 Benefits.* Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

This project has two main pillars: environmentally-sound management of PCBs and of PBDEs from E-waste. Although similar in their objective to destroy POPs and reduce their release to the environment, the socio-economic structure underpinning these two components are very different.

112. The social and economic benefits brought about by the management of PBDE in E-waste (Component 1) will focus mainly on small-medium enterprises as well as informal community of recyclers. There are two industrial enterprises joining the project: IRI and CCTFI. IRI is somehow advanced in terms of e-waste processing while CCTFI is currently building its expertise on e-waste recycling. Both companies, however, lack awareness and the technology to segregate PBDE containing plastic from the general plastic waste stream. The cost of PBDE-plastic segregation and disposal is obviously an incremental cost which has to be covered by GEF grant. However the project challenge is to bring – within the same financial and technical assistance - efficiency and to develop a better occupational environment in addition to the management of POPs. Therefore, the combined result of both the GEF and co-financing resources will bring about a more efficient e-waste management process, which in the end will allow the project partners to manage this waste stream at a reduced cost thus accessing a larger market. The project will also bring substantial benefits for the recycling communities and the general population. The recycling communities will be engaged and provided with compensatory schemes to increase the collection of e-waste possibly contaminated by PBDEs, and will have access to facilitated registration schemes aimed at promoting their transition from informal collectors to registered and licensed collectors. The coordination of this compensation/incentive scheme with the increased capacity on the industrial side will allow all the actors to access a larger fraction of e-waste market, with evident environmental and socio- economic benefits. Whilst the technological and financial support established on the side of enterprises aim at the establishing of a larger disposal capacity for POPs containing waste, the incentive mechanism developed should mostly

be considered as a demonstration activity, where awareness raising will play a key role in ensuring its sustainability and replicability after project end.

113. For Component 2 on PCB management, the project will create impact mostly on the side of the electricity transmission/distribution sector. In the Philippine, due to the geographical architecture of the country (around 7,100 islands), the transmission and distribution of electricity is fragmented and the electrification of the whole territory of the country is still a challenge. The distribution of electricity is under the mandate of electric cooperatives.

In this framework, the management of PCBs represents an additional challenge and there is the need to ensure that the cost associated with the replacement or decontamination of PCBs containing transformer does not slow down the process of electrification of the country. For this reason, since the very beginning of project design activities a great effort has been dedicated to find forms of economical support not only to subsidize the cost of PCB treatment, but also for the replacement of obsolete or contaminated transformers. The mechanism envisaged by the project will bring significant socio and economic benefits. Supported by the GEF incremental funding, the project will reduce the economic burden associated to PCB treatment for ECs by providing a disposal/treatment service at a subsidized cost and, at the same time, through the establishment of a loan programme in cooperation with NEA and Development Bank of Philippines, it will provide eligible ECs with a financial scheme to purchase new equipment at low repayment rate. This will also ensure the full cooperation of the ECs which in this way will see the management of their PCB as an opportunity rather than a pure cost.

The social and economic advantage of the above is evident: the project is aimed at reducing the environmental and health impact of PCBs improving at the same time the development of the country.

*A.8 Knowledge Management.* Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

114. The knowledge management system for this project has several purposes. A platform containing all project generated reports – either technical or monitoring reports – will be built and will feed into larger networks of information sharing. Information sharing will utilize cloud-based platform with restricted access for project stakeholders to allow differentiated level of access. The platform will be basically built for facilitating the work of the PMU. It will be arranged into technical documents, administrative documents, monitoring and evaluation reports. All the document will be available through a very simple hyperlinked summary – built either in excel or word. The cost of this system will be minimal, and, if built since the very beginning of the project, it will allow for a significant time and resource saving.

115. The knowledge management platform to be created will also be used to disseminate project results. For this purpose, a project website will be built. The website will be established using a blog-type platform, allowing PMU and other project operators to update the website content in realtime. The website will be initially built with the support of a professional web-site builder. Subsequently, the website will be updated regularly by the PMU – by assigning a person with the specific task of result dissemination. Even for the website, different level of access will be granted depending on the targeted stakeholders.

116. The KM platform will also be utilized to make UNIDO and GEF experience in the field of PCB management and disposal available to the interested operators and project partners. Therefore, a collection of technical documents and reports generated through the implementation of other PCB projects, will be made available to the PMU, by uploading these documents into the cloud-based folder. These will include, among others, technology specification, templates and guidelines for project reporting, UNIDO policies on environmental safeguarding, gender mainstreaming, STAP technical documents, etc. Although several of these documents are available on the web, it has been noticed that even experienced operators are very often unaware at the existence of these materials. Therefore, periodic bulletins – basically simple summaries of the available literature– will be released on a regular basis to inform the stakeholders and project partners of the availability of these documents. Some of these will be also linked to the website, when relevant for general audience. The PMU and other relevant stakeholders will also be encouraged to participate in relevant webinars, trainings, etc. that will be provided by other entities. The project will also endeavor to utilize available social media platforms like Facebook and Twitter to further disseminate relevant information on the project activities.

117. Although based on simple activities and systems, the knowledge management will be the responsibility of the PMU but may require assistance from a staff who may be recruited on a part-time basis dedicated to maintaining the system, and prompting PMU staff on the deadline for uploading relevant reports into the system.

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

B.1 *Consistency with National Priorities.* Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

118. The proposed project generally adheres to the policy of the state as to the regulation, restriction or prohibition of the importation, manufacture, processing, sale, distribution, use and disposal of chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment. Importantly, this project contributes directly to the country's development priorities articulated in the Midterm Update of the Philippine Development Plan (PDP) 2011 - 2016. The PDP highlights the criticality of improving the state of the environment and natural resources (ENR) as key to achieving sustained and inclusive economic growth in the country. It recognizes ENR's vital contributions, in the form of inputs and ecosystem services, to sustain resource - dependent communities, the agriculture and industry sectors, as well as water supply systems and the energy sector. Components in this project will provide strategic interventions that will enable government and other stakeholders to strengthen the implementation of various environmental laws on solid and hazardous waste management that help protect the environment. Equally important is the project's indirect contribution to the country's priorities in the area of social development through improving human capabilities to achieve freedom from illnesses.

119. The project is also reflective of the United Nations Country Team's commitment to streamline and align the different programmes and projects of the individual UN agencies in the Philippines to support the PDP. The United Nations Development Assistance Framework (UNDAF) 2012 - 2018 strongly considers the cross-cutting nature of environmental sustainability in the implementation of development projects in the country. It also recognizes the extreme importance of providing assistance to the government in increasing resilience to the impacts of climate - related events and man - made disasters through climate change adaptation / mitigation and disaster risk reduction and management. Through UNIDO's mandate

and global competencies, this project will create the opportunity for the country to increase its capacity in addressing issues pertaining to environmental protection including the prevention and risk reduction from man-made disasters.

120. The project is aligned with the PCB and PBDEs targets stipulated in the National Implementation Plan of 2013 and specifically aims to enhance the country's compliance to the Stockholm Convention on POPs. The project intends to implement the NIP envisaged strategy for PCBs by facilitating the obligations of ECs in fulfilling the requirement of the CCO on PCB, both financially and technically. The project is also fully consistent with the NIP action plan on PBDEs (Table 3.2.3 of the NIP) envisaging the following objectives:

- Establish and implement national strategies on the proper management of storage, treatment, and disposal of PBDE-containing wastes such as WEEEs and End-of-Life Vehicles (ELVs)
- Eliminate PBDE from the recycling streams
- Establish baseline conditions that could be used for risk assessment in evaluating the effectiveness of the action plans and other efforts to reduce the environmental and health risk associated with PBDE in the country.

121. The new regulation (DAO 2013-22) includes PCBs (with code L404) and classifies WEEE as M506 and as miscellaneous waste (with code M507), which include "all waste electrical and electronic equipment that contain hazardous components such as lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl esters (PBDEs) that include its peripherals i.e., ink cartridges, toners, etc." The regulation also adds a waste classification - special waste (with code M507), which include "all household hazardous wastes emanating from residential and commercial sources that are consolidated by Materials Recovery Facilities (MRFs) such as consumer electronics, white goods (i.e. refrigerators, washing machines, air conditioners, etc.), batteries, and busted lamps." This is a way forward to implementation and compliance to the SC on POPs, which is also a major goal of the project. The IEC component of the project will also complement the information dissemination activities arising from the implementation of DAO 2013-22.

### **C. DESCRIBE THE BUDGETED M &E PLAN:**

122. The Project Management Unit will be in charge of the regular monitoring of the project, both from the technical and financial standpoint, and for the day by day planning and coordinating of project activities. UNIDO HQ, through regular missions to the county, and regular conference calls with PMU staff and PSC representatives will also play an important role in project monitoring and supervision. Project monitoring will be documented by progress reports (PRs) and Project Implementation Reports (PIRs). Project planning will be documented by annual Workplans. National and international consultant will provide assistance to the PMU in performing the required activities of the project. Safekeeping of project documentations and outputs shall be the responsibility of the PMU.

Type of M&E activity	Responsible Parties	GEF Budget USD	Cofinancing, USD	Time frame
Regular monitoring and analysis of performance indicators	UNIDO PM, PMU, DENR/EMB, NRDC, NEA and consultants as required	30,000	246, 613	Regularly to feed into project management and Annual Project Review
Annual Project Review to assess project progress and performance	PMU, UNIDO PM and Project Steering Committee to review the project performance and make corrective decision	40,000	123, 306	Annually prior to the finalization of APR and to the definition of annual work plans
Mid-term Evaluation	UNIDO PM, PMU, independent evaluation consultants	30,000	123,306	Mid of project
Terminal Project Evaluation	UNIDO PM, PMU, independent evaluation consultants	40,000	123,306	Evaluation at least one month before the end of the project; report at the end of project implementation
Visits to field sites to monitor progress and assess delivery of services	UNIDO PM, PMU, DENR/EMB, Regional offices, NRDC, consultants as required	60,000	616,535	As necessary for the project implementation
<i>Total Indicative Cost</i>		200,000	1,233,066	

#### Key impact indicators for the project

In addition to the indicators listed in the Result Framework table (Annex A), the following key indicators directly related to the Global Environmental Benefit will be measured during project implementation:

Key Impact Indicator	Baseline	Target (at Year 5)	Means of Verification	Frequency of verification	Location
Amount of PCB from EC treated	0	600 tons	Progress reports Disposal reports. Hazardous Waste Manifest certificates Site visits	6 months	EC premises Non-com facility in Bataan Limay PMU office
Amount of CRT monitors collected and processed	0	50,000	Progress reports Disposal reports. Hazardous Waste Manifest certificates Site visits	6 months	IRI disposal facility CCTF disposal facility Site visits in the demonstration areas PMU office
Amount of PBDE in plastic segregated from CRT monitors and disposed of	0	1150 kg	Progress reports Br readings of XRF disposal devices Disposal reports. Hazardous Waste Manifest certificates Site visits	6 months	IRI disposal facility CCTF disposal facility PMU office

### 123. Independent Evaluations

The project will be subjected to at least two independent external evaluations as follows:

- (a) Mid-term Evaluation. An independent Mid-Term Evaluation will be undertaken at the end of the third year of project implementation. The Mid-Term Evaluation, performed by an independent consultant, will measure progress made towards the achievement of outcomes and will identify corrections if needed. The evaluation will focus on the project performance in terms of relevance, effectiveness, efficiency and timeliness of project implementation; highlight issues requiring decisions and actions; and present initial lessons learned on project design, implementation and management. It will also evaluate if the environmental and social safeguards elements have been observed during the project implementation. Findings of this review will be incorporated as recommendations for enhanced implementation during the second half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this mid-term evaluation will be prepared in accordance with the generic TORs developed by the UNIDO Evaluation Office.
- (b) Final Evaluation. An independent Final Evaluation will take place after the operational completion of the project, and will focus on the same issues as the mid-term evaluation, with a greater focus on project impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities future projects, based on lesson learned and success stories. The Terms of Reference for this evaluation will be prepared in accordance with the generic TORs developed by the UNIDO Evaluation Office.

## 124. Project Management Activities

### *Inception Phase*

The project Inception Phase will involve the establishment of the PMU, appointment of the members of the Steering Committee, the project launching through an Inception Workshop (IW) and convening of the first Project Steering Committee (PSC) meeting. The IW is aimed at launching the project with the full project team, relevant government counterparts, co-financing partners, key stakeholders, UNIDO, DENR/EMB, NDRC, NEA and other partners as appropriate. This will provide the platform to disseminate project objectives, general workplan and implementation structure to relevant stakeholders.

The 1st PSC is aimed at convening the project team to better understand and assimilate the goals and objectives of the project, as well as to finalize the preparation of the project's first annual work plan on the basis of the project's results framework matrix. This work will include reviewing the results framework as necessary (indicators, means of verification, assumptions), imparting additional detail as needed, and completing an Annual Work Plan (AWP) for the first year of project implementation, including measurable performance indicators. Additionally, the meeting will: (i) introduce project staff to the UNIDO team, which will support the project during its implementation; (ii) delineate the roles, support services, and complementary responsibilities of UNIDO staff vis-à-vis the executing partners and the project team; (iii) provide a detailed overview of UNIDO reporting and Monitoring & Evaluation (M&E) requirements, with particular emphasis on the content and format of the Annual Project Implementation Reviews (PIRs), the Annual Project Report (APR), the Annual Work Plan (AWP), meetings, as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the project team on UNIDO project related administrative and financial procedures, budgetary requirements and reviews and mandatory budget rephrasing. In the course of the project, the structure of the project's Management Information System will be also introduced.

The 1st PSC will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines and conflict resolution mechanisms. Specific targets for the first year implementation progress indicators together with their means of verification will be developed and agreed in this workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the AWP. The Inception (Phase) Report will be drafted and circulated for comments and approval by project partners within one month from the meetings.

## 125. Reporting Requirements

### (a) Inception Report

A Project Inception Report (IR) will be prepared immediately following the Inception phase. It will include a detailed First Year Work Plan divided into quarterly timeframes, which detail the activities and progress indicators that will guide the implementation during the first year phase of the project. The Work Plan will include the tentative dates of specific field visits, support missions from UNIDO and/or UNIDO consultants, as well as timeframes for meetings of the project's decision-making structures. The report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 month timeframe.

### (b) Project Implementation Report

The Project Implementation Report (PIR) is an annual monitoring process mandated by the GEF. It is an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project will be under implementation for a year, the project team shall complete the PIR. The PIR can be prepared any time during the year (July-June) and ideally, immediately prior to the PSC.

The PIR includes the following: (a) Analysis of the achievement of project objectives; (b) Analysis of project performance over the reporting period, including outputs produced and information on the status of the outcome; (c) Management of Risks (d) Co-financing accounting (resources provided both as in kind or cash contribution). Expenditure reports, lessons learned and recommendations to address key problems, if applicable, may be reported.

The PIR shall also constitute the annual project report of the project. The annual progress report is a UNIDO requirement and part of the UNIDO central oversight, monitoring and project management.

### (c) Terminal Project Report

A terminal project report will be drafted to summarize the main activities, outputs, results and lessons learned and will serve as a basis for discussion in the final workshop. The terminal project meeting will be held in the last month of project operation. This will serve as a venue to consider the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results and acts as a means, which lessons learned can be captured for use in other projects under implementation or formulation.

## 126. General Considerations

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


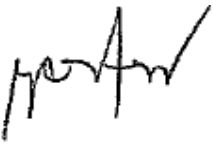
## 127. Legal Context

The Government of the Republic of the Philippines agrees to apply to the present project, mutatis mutandis, the provisions of the Revised Standard Technical Assistance Agreement concluded between the United Nations and the Specialized Agencies and the Government on 24 February 1993.

### **PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)**

#### **A. GEF Agency(ies) certification**

**This request has been prepared in accordance with GEF policies<sup>10</sup> and procedures and meets the GEF criteria for CEO endorsement under GEF-6.**

<b>Agency Coordinator, Agency Name</b>	<b>Signature</b>	<b>Date (MM/dd/yyyy)</b>	<b>Project Contact Person</b>	<b>Telephone</b>	<b>Email Address</b>
Mr. Philippe R. Scholtès, Managing Director, Programme Development and Technical Cooperation  UNIDO GEF Focal Point		11-23-2016	Carmela Centeno 	+431 260263385	c.centeno @unido.org

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

**ANNEX A: PROJECT RESULTS FRAMEWORK** (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
<b>Project Development Objective:</b> Protection of human health and the environment through sound management of PCBs and PBDEs in e-wastes.	Key indicators: <ul style="list-style-type: none"> <li>• Amount of POPs waste disposed of (tons)</li> <li>• Amount of POPs release prevented yearly.</li> <li>• Number of people trained on POPs with specific reference to PCBs, POP-PBDEs and HBB.</li> <li>• Total capacity for E-waste sound management and PCB disposal installed.</li> <li>• Enacted and enforced legislation and guidelines on E-waste.</li> <li>• Number of materials recycled or re-used</li> </ul>	57.24 tons of low level PCBs (40-15,500 ppm) destroyed by the existing non-com facility in Bataan. 1500tons of PCB waste secured for disposal in the period 2016 to 2018 with government resources.  No POPs – PDEs, HBB or mercury containing E-waste properly disposed of.  The non-com PCB disposal plant has a capacity of 750 tons/year.  Zero capacity currently available for the ESM segregation and disposal of POP-PBDEs or HBB containing E-waste	Additional 600 tons of PCB equipment coming from ECs disposed of.  At least 1250 tons of E waste potentially contaminated by PBDEs or 50,000 CRT monitors treated. At least 1150 kg of PBDE disposed of.  Capacity for the treatment of at least 50t/yr of solid PCB contaminated material (carcasses,cardboard, wood) established.  Capacity for the collection, storage, and processing of at least 300t/year of E-waste potentially contaminated by POPs established.  Strengthened legislation and guidelines on E-waste enacted and enforced	See below	See below

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
<b>Component 1. Management of POPs in Waste Electrical and Electronics Equipment (WEEE)</b>					
<b>Outcome 1.1 Strengthened legislation and institutional capacity in implementing PBDE action plans</b>	<p>Number of policies/guidelines enforced relevant to management of e-wastes in the recycling chain</p> <p>Number of facilities able to screen POPs-containing plastics from the recycling chain</p>	<p>A number of regulations exists however these are not entirely implemented and in most cases are not specifically addressed on E-waste management.</p> <p>There is currently no screening or segregation practiced in e-wastes recycling facilities</p>	<p>Expanded E-waste regulation and guidelines, including provisions on POPs, POPs and hazardous substance concentration limits for EEE and WEEE drafted and enacted.</p> <p>Increase in the number of facilities adopting best practices on screening and segregation of POPs-contaminate e-wastes</p> <p>Equal access to training and information for women and men ensured.</p>	<p>Draft, and official versions of regulation and guidelines Meeting and workshop minutes.</p>	<p>Key stakeholders will actively participate in the process of regulatory improvement. GoP committed to improve and approve the existing regulation on E-waste within project timeframe.</p>
<i>Output 1.1.1 A rationalized National Policy on WEEE Management formulated including incentive packages and Extended Producers' Responsibility (EPR) initiatives.</i>	<p>Number of expanded/strengthened regulation incorporating quantitative criteria for POPs in WEEE guidelines and elements of EPR.</p> <p>Number of policies revised/strengthened relevant to PCB management for electric</p>	<p>Regulations on hazardous wastes (DAO 2013-22) existing where e-waste is classified as hazardous wastes; Guidelines on Environmentally-sound management of WEEE drafted.</p>	<p>Incentive Packages and EPR initiatives formulated and approved</p> <p>The Basel convention criteria related to the classification and management of hazardous E-waste are integrated in the existing or new</p>	<p>Draft, and official versions of the expanded E-waste regulation, E-waste guidelines, incentive packages and EPR schemes</p> <p>Meeting and workshop minutes.</p>	<p>The government of Philippine is committed to strengthen the current regulations and enforcement of the regulation on E-waste to integrate provisions related to POPs</p>

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
	cooperatives		regulations and guidelines.		
<b>Outcome 1.2 Reduction and eventual elimination of POPS-PBDEs releases from WEEE to mitigate their health impact.</b>	<p>Number of men and women; boys/girls protected from potential harm of E-waste.</p> <p>Amount of POPs containing or contaminated E-waste properly disposed. Amount of POPs destroyed.</p>	<p>Absence of an inventory system for POPs in E-waste, lacking of BAT/BEP technologies for segregation of POPs contaminated waste and limited availability of recycling plant result in POPs contaminated waste not properly treated with POPs entering the environment and population exposed to POPs.</p>	<p>Equal opportunities to jobs generated in this outcome ensured.</p> <p>Equal access to training, awareness raising event and information for women and men ensured.</p> <p>Systematic inventory of POPs in E-waste established. ESM of POPs contaminated E-waste demonstrated .</p>	<p>Site visits Mission reports, Technical reports Training reports Waste manifests Training reports Plant process logs</p>	<p>Informal and formal recyclers are willing to operate under the project. The incentive scheme developed will be effective and will allow to comply with project targets.</p>
<i>Output 1.2.1 Systematized and standardized system for inventory of POP-PBDEs and HBB in WEEE in the country</i>	<p>Presence of a standardized system for inventory of POP-PDEs in the country including enhanced capacity for screening and laboratory analysis,</p>	<p>Absence or lack of consolidated and reliable data on generation, collection, disposal and management schemes, while environmental awareness on the hazards associated with WEEE is low.</p> <p>The absence of specific limits for the characterization of POPs containing plastic hinders their segregation for non</p>	<p>A system for the monitoring and inventory of POPs in E-waste, based on practical handbook, sampling and analytical methodology, prepared and demonstrated through:</p> <ul style="list-style-type: none"> <li>at least 10,000 analysis with portable xrf;</li> <li>5% of xrf analysis confirmed by GC/MS or</li> </ul>	<p>POPs in E-waste methodological documents. POPs inventory report containing results of laboratory and screening analysis. Training materials and training reports.</p>	<p>Technologies for the rapid and cost-effective identification of POPs contaminated materials are available.</p>

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
		POPs wastes.	GC/ECD methods;		
<i>Output 1.2.2 BAT/BEP demonstrated for the sustainable sound management of WEEE at selected waste recycling facilities</i>	Number of operators adopting systems for the segregation of POP-PDEs from WEEE recycling operations.	Collection and recycling of household WEEE largely in the hands of informal recyclers, with a limited presence of formal recyclers processing mostly WEEE from corporates and institutions.	Incentive mechanisms developed under 1.1.1 to promote the collection of household E-waste, and the association of informal recyclers into formal organizations of collectors demonstrated.	Financial statements and activity reports related to the E-waste incentive mechanism. Training materials and training reports. Waste collection / generation / treatment log and waste manifests. Site visits and mission reports	Informal recyclers willing to participate in project activities including joining the incentive mechanism for registering as formal recyclers may be identified. The incentive scheme including EPR are effective to ensure the collection of POPs contaminated E-waste.
<i>Output 1.2.3 Safe disposal of material containing PBDE and other hazardous chemicals</i>	Amount of waste containing POP-PBDEs segregated and disposed.	Technologies for the destruction of POPs PBDEs is missing in the country, and plastic from WEEE is frequently dumped or burnt in the open, with release of POP-PBDEs and U-POPs.	Two E-waste recycling plants upgraded to improve the identification and the segregation and safe storage of POPsof containing waste and preventing the exposure of workers to hazardous material and substances;  At least 50000 CRT computer monitors or TV recycled with identification and segregation and disposal of PBDEs containing plastic containing 1150 kg of PBDE..	TORs and bidding documents related to the equipment for upgrading waste recycling plants. Site visit and inspections. Waste acceptance / treatment log and waste manifests. Training materials and training reports.	The formal recyclers identified at PPG stage are available and have enough technical capacity to integrate the process with POPs-segregation procedures.

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
<b>Component 2. Sound Management of PCB-contaminated equipment, PCB wastes and stockpiles from electric cooperatives</b>					
<b>Outcome 2.1. PCB management plans of selected electric cooperatives effectively implemented.</b>	<p>Number of men and women; boys/girls protected from potential harm of PCBs.</p> <p>Amount of PCB containing or contaminated electric equipment properly disposed or treated.</p> <p>Amount of PCBs destroyed.</p> <p>Number of materials recycled or reused</p> <p>Commercial value of materials recycled or re-used</p>	<p>Legislation on PCBs is already in force in the Philippine.</p> <p>A PCB disposal facility operational. Electric cooperatives with reduced capacity of managing PCBs and limited access to PCB treatment and disposal services.</p>	<p>At least 600 tons of PCB containing equipment disposed or treated.</p> <p>Equal opportunities to jobs generated in this outcome ensured.</p> <p>Equal access to training and information for women and men ensured.</p>	<p>Site visits</p> <p>Mission reports, TORs, bidding documents, bidding evaluation reports.</p> <p>Technical reports</p> <p>Training reports</p> <p>Waste manifests</p> <p>Training reports</p> <p>Plant process logs</p>	<p>Technical cooperative willing to join the project.</p> <p>The facility in Limay, Bataan is operational</p>
<i>Output 2.1.1 Screening criteria and financial mechanism formulated for subsidized funding for qualified electric cooperatives to implement PCB management plans.</i>	<p>Number of policies relevant to PCB management for electric cooperatives harmonized.</p> <p>Number of men/women trained</p> <p>Number of ECs cooperatives identified and committed to disposing PCBs.</p> <p>Existence of a financial</p>	<p>The Chemical Control PCB legislation already in force in the Philippine.</p> <p>Around 119 electric cooperatives (ECs) operates in the country, however only 26 submitted data on PCB equipment.</p> <p>ECs do not have technical and financial</p>	<p>At least 20 cooperative joining the project.</p> <p>Policies of the DENR integrated in the policies of NEA and ERC</p> <p>An international bidding will be launched for the procurement of equipment for the</p>	<p>Agreements with Electric Cooperatives (ECs).</p> <p>Inventory results and ECs PCB management plans., integrated by analytical results.</p> <p>Policies revised/strengthened</p> <p>TOR and bidding documents concerning the upgrading of the PCB dechlorination</p>	<p>The technical and financial support provided by the joint effort of the GEF project and the government will ensure that most of the ECs will join the project.</p> <p>The project will use the s regular capacity building/training by NEA and PHILRECA</p>

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
	mechanism for the replacement of PCB contaminated transformers.	resource to dispose / decontaminated their PCB equipment.  NEA and ERC guidelines does not take into consideration DENR regulations.	upgrading of the PCB disposal facility in Bataan, ensuring the best technical and economic option will be selected.	facility in Bataan.  TOR, bidding and contractual documents for disposal / treatment services of PCB contaminated equipment. Site visits and mission reports.	to ensure good dissemination and communication with all ECs on the project objectives and envisaged outputs..
<i>Output 2.1.2. The PCB disposal facility at Limay, Bataan upgraded for undertaking further disposal of 600 t of PCB equipment coming from the Electric Cooperatives</i>	Availability of additional equipment for the treatment of low-contaminated PCB transformers at the disposal facility at Limay, Bataan.	The PCB Dechlorination facility built in 2014 under the GEF project 2329 is currently operational and is completing the disposal of 1500 t of PCBs as envisaged as Co-financed contribution for that project. This does not include the PCB equipment from the ECs.	The PCB dechlorination facility upgraded to treat also solid waste contaminated by PCB (transformers carcasses, insulating cardboard, etc.) in addition to PCB contaminated oil. 600 tons of PCBs or PCB equipment safely disposed of during the project.	TOR and technical specifications Bidding reports and technical / financial selection reports. Site visits Mission reports Plant process logs	The disposal facility at Limay, Bataan is functional and needs only additional equipment to treat low contaminated materials.
<i>Output 2.1.3. PCB wastes screened, transported, treated and disposed at the existing Non-Combustion Facility at Limay, Bataan</i>	Amount of PCB wastes disposed of in an environmentally sound way.	During PPG, more than 852 tons of PCB contaminated equipment were identified from 26 ECs. Very limited amount of analytical data is available.	At least 600 tons of PCB containing equipment ready for disposal or treatment identified.	TOR and technical specifications Site visits Mission reports Treatment logs and waste manifests.	The identified PCB contaminated equipment will be secured for treatment under the project until the project starts

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
<b>Component 3. Institutional strengthening, capacity building and awareness raising</b>					
<b>3.1 Increased capacity for and awareness on sustainable and effective WEEE and PCB wastes management by relevant stakeholders</b>	<p>Availability of training reports, awareness programs reports.</p> <p>Number of people (Men/women) attending training and awareness events.</p>	Limited awareness and limited technical capacity in both the E-waste and PCB sectors call for a more systematic and wide implementation of training and awareness raising initiatives.	Equal opportunities to jobs generated in this output ensured. Equal access to training, awareness raising initiatives, and information for women and men ensured.	<p>TOR and technical specifications</p> <p>Site visits</p> <p>Mission reports</p> <p>Training materials</p> <p>Training reports</p>	Informal recyclers, formal recyclers, EC cooperatives will join the project and are interested in attending trainings.
<i>3.1.1 Training programs on PCB and WEEE management for relevant stakeholders designed and implemented</i>	<p>Documentary evidence of training carried out available.</p> <p>Funds allocated for gender capacity building activities.</p> <p>No. of men and women participating in workshops or capacity building events</p> <p>Presence of a Knowledge Management infrastructure (websites, online databases) operational and updated with relevant information on POPs and project activities..</p>	<p>There are no knowledge management system implemented for the E-waste sectors, whilst there is an online PCB management system under the DENR website <a href="http://philpcbtracker.com">philpcbtracker.com</a></p> <p>The EC cooperatives lacks technical capacity on POPs management</p> <p>Informal operator lacks completely the technical capacity for the ESM management of potentially POPs contaminated E-waste</p>	<p>Training delivered to all the ECs joining the project.</p> <p>Training sessions on E-Waste management and POPs for at least 50 trainees including operators and control authorities.</p> <p>Website and online database for POPs and E.waste</p>	<p>Training materials.</p> <p>Training minute and training reports.</p> <p>Questionnaire survey reports</p>	Training of operators and control authorities is effective in ensuring that proper identification, collection and disposal modalities of PCBs and E-waste will be sustained during and after project end.
<i>3.1.2 Awareness programs on WEEE and PCB waste</i>	Presence of awareness programs and materials on WEEE and PCBs.	The awareness on POPs is mainly limited to the academic society	Awareness program on WEE and PCB waste management	Awareness raising material, site visits, mission reports,	Increase awareness of operators, authorities and of the public is

<b>Hierarchy of Objectives</b>	<b>Indicators</b>	<b>Baseline</b>	<b>Target</b>	<b>Sources of Verification</b>	<b>Assumptions</b>
<i>management formulated and conducted</i>	Increase of the awareness on PCB and POPs in e waste of relevant stakeholders measured through interviews and questionnaires.	and some institutions.  PCB awareness is very limited among managers of ECs, although it increases in the last years thanks to GEF initiatives. The awareness on POP-PBDEs, HBB and PFOs among waste recycler is substantially absent.	broadcasted via television and the web.	participation in raising awareness events, interviews and questionnaire surveys.	key in ensuring sustainability of project activities.
<b><u>Component 4. Project Monitoring and Evaluation</u></b>					
<b>Outcome 4.1 The project and all its stakeholders are able to monitor and evaluate the project's progress allowing for the implementation of the National action plan.</b>	Existence of project management structure. Timely availability of project reports.	The EMB team is already familiar with the management of the projects. New staff and stakeholders will need specific training on the management of this project	All the reports delivered in compliance with the agreed deadlines.	Project reports and workplans Report of workshops Meeting minutes Evaluation reports	The familiarity of EMB staff with project implementation, further strengthened by specific training on project management, will ensure a smooth implementation of the project.
<i>Output 4.1.1. The project and all its stakeholders are able to monitor and evaluate the project's progress allowing for the implementation of the National action plan.</i>	Availability of inception report, APRs, PIRs, and AWP as from M&E plan.  Availability of final MTE and TE and audit reports.  Presence of project	A number of GEF projects have been already implemented in the country; therefore, potential stakeholders and project partners who are familiar with the management, monitoring and	Inception workshop held within one month from project signature by the government.  Project management structure established and fully functional without one month from inception	Inception workshop minutes  Inception report  Project Annual Work Plans (AWPs)  Project Quarterly and Annual Progress	The selected project staff and technical consultants will have enough capacity to ensure the proper implementation and monitoring of the project throughout all its stages.

<b>Hierarchy of Objectives</b>	<b>Indicators</b>	<b>Baseline</b>	<b>Target</b>	<b>Sources of Verification</b>	<b>Assumptions</b>
	<p>structures as from project agreed institutional and management arrangement.</p> <p>Presence of M&amp;E Report that includes gender sensitive indicators identified through consultation with all stakeholders.</p>	<p>evaluation procedures for GEF projects. Although some of the experienced staff may be available for the project, new staff dedicated to the project will require specific training to achieve full capacity in project implementation and monitoring.</p> <p>Most of the key stakeholders are not updated on the UNIDO and GEF procedures for project management and monitoring.</p>	<p>workshop.</p> <p>Training on Monitoring procedures delivered during Inception Workshop.</p> <p>Mid term evaluation report delivered out within 2 years from project signature. Terminal evaluation report delivered within 3 months from project closure.</p>	<p>Reports (QPRs and APRs)</p> <p>Annual Project Implementation Reports</p>	<p>The training on project monitoring methodologies will ensure that a consistent monitoring methodology and reporting will be adopted by all the relevant project partners.</p>

**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).

**A. STAP comments at PIF on June 2015 Work Program**

The STAP thinks that overall the approach laid out in the PIF is feasible, but would make a few points for consideration in the project design:-

<i>Comments</i>	<i>Response</i>
There needs to be sound elaboration of a strategy for the alternative livelihoods creation need that will certainly arise if much of the environmentally hazardous, informal sector activity is to be eliminated. There is a large social component to this project that should be appreciated and the knowledge and lessons learned from the process would add significant value to the project. Indeed even the risk table acknowledges a moderate risk of resistance from the informal sector, but the PIF does not seem to put forward any preliminary ideas towards tackling this issue.	There are obviously complexities in the relationship with the informal sector, due to the fact that it mainly operates in breach of the existing and planned regulation on waste management. Therefore, NGOs which are already operational in the specific informal E-waste recycling sector will be involved to promote awareness raising and facilitation in the registration and licensing process specifically designed to promote the shifting from informal to formal recycling of E-waste will be piloted. To this end, NGOs will act as mediator and DENR/EMB, with the support of UNIDO, will establish regulations and incentive mechanisms. The project will also endeavor to establish a connection of the informal recyclers to the pilot formal recyclers targeted by the project.
There needs to be assessment of the current environmental and human settlement threats posed by the locations of the current registered TSDs and recycling/recovery set ups overall. This includes threats to the water table, flooding (from typhoons), and overall threat of broader contamination to the environs around the facilities. Rigorous environmental impact assessments should also be utilised should the need for additional facilities be identified.	The project does not envisage the development of new facilities for the treatment of E-waste. Technologies for the segregation and storage of PBDE containing E-waste will be established at existing facilities. Likewise, the project partnered with two facilities, IRI and CCTFI, that has conformed with the environmental assessment and permitting requirements of DENR-EMB.
Though there is no elaboration of detail in the early part of the PIF, it is hoped that improvement of the monitoring of recycling/recovery processes will include moving beyond self-reporting alone, since there is currently no way to verify performance and practice of facilities to ensure safe operation for environmental and human health.	Recycling and recovery processes are already officially tracked in the two TSD (IRI and CCTFI).  The project envisage a specific activity for the quantification of PBDE-containing waste segregated. That will be carried out through the demonstration of XRF (X ray fluorescence detectors) at the TSD. In addition to that, the collection of waste under the project will be subjected to the reporting through the establishment of a waste manifest system.
With this said, the risk table of the PIF will need to be revisited in the course of project development. As aforementioned, risks from resistance from the informal sector, and the risk from typhoons etc does not seem to be fully considered (the latter only focuses on risk to collection and operations, but thinks nothing of wider contamination to areas around the facilities).	A new and more detailed risk table has been elaborated, which addresses the concerns raised by the STAP on these issues.

## **B. Council Members' Comments**

<i>Comments from Germany</i>	<i>Response</i>
It is not clear if “a rationalized National Policy on WEEE Management formulated” includes a general National Waste Management Strategy and Plan for WEEE. If not, it is recommended to develop such general strategy and plan within this project. Also the creation/update of a waste inventory database should be included in the project.	The national policy on WEEE which will be developed under the project is part of the wider DAO 2013-22 “Revised Procedures And Standards For The Management Of Hazardous Wastes”. As specified under the description of Outcome 1.1., the project will revise, harmonize and implement the draft “Guidelines on Environmentally Sound Management (ESM) of Waste Electrical and Electronic Equipment (WEEE)”, by better specifying standards, role of the different players, and including provisions related to import and recycling. Under Outcome 1.2, a wide survey will be conducted including at least 10,000 analyses with portable xrf detector and GC/MS. This will constitute the basis for the establishment of a countrywide inventory of POP contaminated E-waste.-
Incremental/additional cost reasoning for GEF intervention is not clear. It would be important to make clear what will be the use of GEF money complementary to the co-financing (if you read sections A.1.4 and A.1.5. there are inconsistencies on GEF funds use).	A table clearly identifying the incremental allocation of GEF money complementary to co-financing is provided on page 30 of the Request for Project Endorsement.
Component 2 pct. 17 mentions that a former World Bank integrated project already provided technical assistance to PCB owners to implement an environmentally sound management and disposal of PCBs, as well as capacity building and awareness raising. This may lead to some questions in relation to the activities of institutional capacity and awareness raising on PCBs issues included in current Component 3. Germany suggests to clarify the necessity for further capacity building and awareness raising in the proposal.	<p>Component 3 will focus on capacity building and awareness raising on both Components 1 and 2, WEEE management and PCB management, respectively. Alternative scenario under this component is presented on pp. 28-30.</p> <p>An intensified awareness raising campaign is required for Component 1 as it would involve the participation of 'informal sectors' while institutional capacity building is necessary on the various facets of managing POPs (PBDE) e-waste streams.</p> <p>The World Bank project focused mainly on assisting industrial owners of PCB wastes and stockpiles, including electric cooperatives (ECs), prepare their PCB management plans. There are around 119 ECs in the Philippines and only about 50 benefitted from the WB project. This project aims to expand the coverage of the capacity building and awareness raising activities to include a majority of the ECs, especially on the target regions. Likewise, this project intends to concretely implement the PCB management plans and implement actual decontamination or disposal of equipment contaminated by PCBs. Therefore, the project will strengthen the capacity of EC operators on the practical issue of identification, maintenance, decontamination and disposal of equipment contaminated by or</p>

	<p>containing PCBs (as described under project output 3.1.1.</p> <p>Also, continuing participation of the communities around the facility is required to make them fully-informed of the activities being undertaken in the treatment plant.</p>
<b><i>Comments from Canada</i></b>	<b><i>Response</i></b>
<p>Canada supports this project and noted the section on stakeholder engagement could be improved. Specifically, while the document notes civil societies and indigenous people will be involved, limited specificity is provided with respect to organizational name and engagement approaches. Given the importance of stakeholder engagement, this section should be expanded in the subsequent document to ensure full and meaningful inclusion of relevant stakeholders, including CSOs and indigenous people.</p>	<p>This has been taken into account in several parts of the project document, and indeed oriented the strategy of the project component on E-waste. The project will specifically involve Medecins du Monde which is already very active with informal recyclers dealing with E-waste, and already established cooperation with informal E-waste recycler. The project document analyses in detail the role of the different formal and informal E-waste processors (page 12). Through the cooperation with NGOs, the project will support communities of E-waste recyclers in Manila and Cebu to establish associations and eventually register as formal collectors. It has to be considered however that the project deals only with E-waste contaminated by POPs (CRT monitors) being other E-waste not contaminated by POPs not eligible under the Chemical and Waste GEF6 focal area. Therefore, also informal communities have to be selected among those which are already collecting this type of waste stream. At the same time, the project will establish a better market for these collectors, by enlarging the capacity of formal waste processors (IRI and CCTF) in dealing with this specific waste stream.</p>

## ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS<sup>11</sup>

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: <b>USD 150,000</b>			
<i><b>Project Preparation Activities Implemented</b></i>	<i><b>GEF/LDCF/SCCF Amount (\$)</b></i>		
	<i><b>Budgeted Amount</b></i>	<i><b>Amount Spent To date*</b></i>	<i><b>Amount Committed</b></i>
Meetings and workshops (inception meeting, focus group discussions, coordination meeting, consultative workshops, validation workshops)	30,000	19,500	10,500
Baseline data collection and analysis (visit to facilities and experts' mission)	50,000	29,583	20,417
Preparation of environmental and social management framework and gender study	10,000	7,500	2,500
Assessment of the noncombustion facility	30,000	14,700	15,300
Development of the logical framework and project document	40,000	32,400	7,600
<b>Total</b>	<b>160,000</b>	<b>103,683</b>	<b>56,317</b>

\*As of August 30, 2016

The PPG activities undertaken have resulted to the achievement of the objectives set in the project preparation phase. Concrete results were achieved through various meetings and workshops held with the relevant stakeholders and the studies undertaken by national experts on various baseline information required, including environmental and social plans and gender analysis, to complete the project document. An expert mission was also undertaken to analyze the gaps and barriers that need to be highlighted and the project activities that would define the incremental funding. An assessment of the noncombustion facility was also undertaken in order to ascertain the technological improvements required.

Detailed PPG activities are as follows:

- Inception meeting with the project partners was held in June 2015 where the approved PIF, project framework and PPG plans were presented. The coordination mechanism for PPG management and organization was established.
- Baseline studies were conducted by national experts and work on environmental and social plans (**Annex I**) and gender analysis (**Annex J**) were initiated.
- To confirm the sources of PCBs and determine further specific activities of partners, as well as secure co-financing commitments, meetings/workshops with the following were held:
  - Meeting with Electric Cooperatives in selected Regions priority regions include Region 1, 2, 3, CAR, 5 and 8. The said regions were proposed to be prioritized as this are the identified sources of PCBs
  - Meetings with ERC to clarify policy on CAPEX approval
  - Meetings with EMB to confirm the operation of the Non Com POPs Facility in Bataan
  - Meetings with DBP to identify the eligibility requirements for the ECS
- Identification of prospective project partners for the WEEE component of the project and other related activities began during the last quarter of 2015 with meetings and discussion with DENR-EMB. DENR-EMB recommended

<sup>11</sup> If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to 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. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

TSD facilities that could play a major role in achieving the proposed outcomes and outputs enumerated in the PIF. Pertinent regulations on WEEE were reviewed which include DAO 2013-22 (Revised Procedures and Standards for the Management of Hazardous Wastes) and the proposed Guidelines on the Environmentally Sound Management (ESM) of Waste Electrical and Electronic Equipment (WEEE).

- Various consultation meetings were held to discuss project updates and engage co-financing partners.
- A coordination meeting was held in January 2016 to discuss the project document structure and the leveraged co-financing to date.
- A mission was conducted in Cebu City to explore the possible partnership with the Cebu City LGU and CCTFI. Cebu City was considered to be the project demonstration site with the ordinance on WEEE management in place. This gave Cebu City a leverage over Quezon City which was initially considered as demonstration site in the project identification form (PIF).
- An expert mission was fielded on 15-19 February 2016 to gather data, information, relevant details, and discuss with the prospective project partners.
- On 12 April 2016, the stakeholders' validation workshop was conducted with the following objectives: These objectives are to identify the roles and responsibilities of the project partners, to specify the co-financing items, and to clarify the issues that the partners may have with their participation to the project. The agreements and outcomes of the meeting formed the main parts of the project document.

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

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

Not applicable.

## ANNEX E: TIMELINE OF ACTIVITIES

TIMELINE FOR COMPONENT 1		Year 1				Year 2				Year 3				Year 4				Year 5			
		1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q
<b>Component 1.:</b>	<b>Management of POPs in Waste Electrical and Electronics Equipment (WEEE)</b>																				
<b>Outcome 1.1.:</b>	<b>Strengthened legislation and institutional capacity in implementing PBDE action plan</b>																				
<b>Output 1.1.1:</b>	<b>A rationalized National Policy on WEEE Management formulated including incentive packages and Extended Producers' Responsibility (EPR) initiatives</b>																				
Activity 1.1.1.1:	Gap analysis of the existing legislation related to hazardous waste and E-waste to verify its compliance with SC and BC conventions																				
Activity 1.1.1.2:	Development of an incentive mechanism to promote the collection of household E-waste																				
Activity 1.1.1.3:	Development / amendment of existing regulation to chemical and waste regulation, including incentive mechanism and provisions for the registration of waste management operators to promote registration of E-waste collectors and discourage informal waste collection, and assess impact of such amendments																				
Activity 1.1.1.4:	Perform a risk assessment and a socio/economic impact assessment of proposed quality standards for PBDE in plastic articles other than e-waste taking into account international experience																				
Activity 1.1.1.5:	Hold a stakeholder workshop on the proposed amendments to the regulation, impact assessment outcomes, incentive scheme for collection and quality standards for PBDE																				
Activity 1.1.1.6:	Proposed amendments are integrated in the relevant regulations and endorsed by the government																				
Activity 1.1.1.7:	Training and technical assistance to custom officers to ensure that the rules of the Basel Convention on the import of used electronic equipment are fully complied with (4 training sessions)																				
<b>Outcome 1.2.:</b>	<b>Reduction and eventual elimination of POPS-PBDEs releases from WEEE to mitigate their health impact.</b>																				
<b>Output 1.2.1:</b>	<b>Systematized and standardized system for inventory of POP-PBDEs and HBB in WEEE in the country,</b>																				
Activity 1.2.1.1:	Procurement of equipment for the rapid testing of brominated compounds in plastic																				
Activity 1.2.1.2:	Perform wide survey of PBDE in E-waste (at least 10,000 analysis with portable XRF devices done)																				
Activity 1.2.1.3:	Strengthening the capacity of the concerned regulatory agency on PBDE analysis.																				
Activity 1.2.1.4:	Perform GC/MS confirmation of 5% of the samples.																				



TIMELINE FOR COMPONENT 2		Year 1				Year 2				Year 3				Year 4				Year 5			
		1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q
<b>Component 2.:</b>	<b>Sound Management of PCB-contaminated equipment, PCB wastes and stockpiles from electric cooperatives</b>																				
<b>Outcome 2.1.:</b>	<b>PCB management plans of selected rural cooperatives effectively implemented.</b>																				
<b>Output 2.1.1:</b>	<b>Screening criteria and financial mechanism formulated for subsidized funding for qualified electric cooperatives</b>																				
Activity 2.1.1.1:	Validation and updating of Management Plans of the Electric Cooperatives (EC)																				
Activity 2.1.1.2:	Review or formulation of relevant policies of EMB, NEA and ERC on PCBs and electric equipment																				
Activity 2.1.1.3:	Development of subsidize funding for the treatment of PCBs owned by the EC																				
<b>Output 2.1.2:</b>	<b>Preparation of the production plan for the facility based on the availability of different kinds of PCB waste</b>																				
Activity 2.1.2.1:	Assessment, verification and necessary upgrading of the PCB treatment plant.																				
Activity 2.1.2.2:	Upgrading of the waste acceptance system of the Bataan disposal facility																				
Activity 2.1.2.3:	Training on the updated Standard Operating Procedures for the staff of the facility including new systems installed																				
<b>Output 2.1.3:</b>	<b>PCB wastes screened, transported, treated and disposed at the existing Non-Combustion Facility at Limay, Bataan</b>																				
Activity 2.1.3.1:	Verification by means of sampling and quantitative analysis of the PCB concentration of equipment to be treated																				
Activity 2.1.3.2:	Prepare a transport management plan for PCB equipment and oil from the ECs to the facility in Bataan																				
Activity 2.1.3.3:	Preparation of the production plan for the facility based on the availability of different kinds of PCB waste																				
Activity 2.1.3.4:	Updating and implementation of the environmental and occupational safety protocol at Bataan																				
Activity 2.1.3.5:	Treatment of 600 tons of PCB oil and PCB containing equipment																				

TIMELINE FOR COMPONENT 3		Year 1				Year 2				Year 3				Year 4				Year 5			
		1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q
<b>Component 3.:</b>	<b>Institutional strengthening, capacity building and awareness raising</b>																				
<b>Outcome 3.1.:</b>	<b>Increased capacity for and awareness on sustainable and effective WEEE and PCB wastes management by relevant stakeholders</b>																				
<b>Output 3.1.1:</b>	<b>Training programs on PCB and WEEE management for relevant stakeholders designed and implemented</b>																				
Activity 3.1.1.1:	Training for the PCOs and the managers of ECs on the Code of Practice and other PCB related policies of DENR/EMB																				
Activity 3.1.1.2:	Technical training for regulators, E-waste collectors and E-waste recyclers on E-waste collection and recycling technologies, POPs and hazardous chemical related issues, E-waste national and international regulation																				
<b>Output 3.1.2:</b>	<b>Awareness programs on WEEE and PCB waste management conducted and knowledge management system established</b>																				
Activity 3.1.2.1:	Communication strategy on E-waste including survey on awareness raising needs developed																				
Activity 3.1.2.2:	Development of awareness raising materials on E-waste for general public and communities including broadcasting, brochures, websites.																				
Activity 3.1.2.3:	Publication / broadcasting of awareness raising material on E-waste																				
Activity 3.1.2.4:	Perform collection events specifically addressed to the collection of CRT monitors and CRT TV set. (6 events)																				
Activity 3.1.2.5:	Meetings with E-waste collection associations (8 meetings)																				
Activity 3.1.2.6:	Conduct information awareness activities to ensure local government and local community support for the commercial operation of the non-combustion PCBs destruction facility and provide support to the PNOC Multi partite Monitoring team																				
Activity 3.1.2.7:	Publicize relevant media stories related to PCBs and their safe management (video production and knowledge management included)																				
Activity 3.1.2.8:	Organize high profile events for the project (2 events)																				

TIMELINE FOR COMPONENT 4		Year 1				Year 2				Year 3				Year 4				Year 5			
		1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q	1q	2q	3q	4q
Component 4.:	Project Monitoring and Evaluation and Implementation																				
Outcome 4.1.:	The project and all its stakeholders are able to monitor and evaluate the project's progress allowing for the implementation of the National action plan.																				
Output 4.1.1:	The project and all its stakeholders are able to monitor and evaluate the project's progress allowing for the implementation of the National action plan.																				
Activity 4.1.1.1:	Establish the project management team																				
Activity 4.1.1.2:	Establish the Project Steering Committee and hold inception meeting																				
Activity 4.1.1.3:	Measure impact indicators on an annual basis																				
Activity 4.1.1.4:	Prepare Annual Project Implementation Reports and Work plans.																				
Activity 4.1.1.5:	Hold annual Project Steering Committee meetings																				
Activity 4.1.1.6:	Carry out mid-term external evaluation																				
Activity 4.1.1.7:	Carry out final external evaluation																				
Activity 4.1.1.8:	Complete the Terminal Report																				

**ANNEX F: BUDGET TABLE FOR GEF GRANT**

GEF Outcome / Outputs		Year 1	Year 2	Year 3	Year 4	Year 5	Total
		US\$	US\$	US\$	US\$	US\$	US\$
<b>Outcome 1.1 Strengthened legislation and institutional capacity in implementing PBDE action plans</b>							
<i>Output 1.1.1 A rationalized National Policy on WEEE Management formulated including incentive packages and Extended Producers' Responsibility (EPR) initiatives</i>	International consultants	2000	3500				5500
	Nat. Experts	10000	18000	7000	3000		38000
	Sundries						0
	Project staff travel	6000	8000	4000	4000		22000
	Equipment						0
	Workshops / training	5000	10000	5000	5000		25000
	Subcontracts	1500	5000	1500	1500		9500
	<b>Sub-total for this output</b>	24500	44500	17500	13500	0	100000
<b>Outcome 1.2 Reduction and eventual elimination of POPs-PBDEs releases from WEEE to mitigate their health impact.</b>							
<i>Output 1.2.1 Systematized and standardized system for inventory of POP-PBDEs and HBB in WEEE in the country,</i>	International consultants		4000		4000		8000
	Nat. Experts		4000	4000	4000	4000	16000
	Sundries						0
	Project staff travel	1000	6000	4000	3000	2000	16000
	Equipment	60000					60000
	Workshops						0
	Subcontracts		110000	110000	110000	110000	440000
	<b>Sub-total for this output</b>	61000	124000	118000	121000	116000	540000
<i>Output 1.2.2 BAT/BEP demonstrated for the sustainable sound management of WEEE at selected waste recycling facilities</i>	International consultants	15000		10000			25000
	Nat. Experts	5000	5000	5000	5000	5000	25000
	Sundries	1000	1000	1000	1000	1000	5000
	Project staff travel	7000	4000	4000	4000	4000	23000
	Equipment		400000				400000
	Workshops						0
	Subcontracts		200000	200000	200000	200000	800000
	<b>Sub-total for this output</b>	28000	610000	220000	210000	210000	1278000

GEF Outcome / Outputs		Year 1	Year 2	Year 3	Year 4	Year 5	Total
		US\$	US\$	US\$	US\$	US\$	US\$
<i>Output 1.2.3 Safe disposal of PBDE-containing plastics.</i>	Consultants	5000	5000				10000
	Nat. Experts	8000	9000				17000
	Sundries	5000	5000	5000	5000	5000	25000
	Project staff travel	5000	5000				10000
	Equipment						0
	Workshops						0
	Subcontracts		200000	200000	200000	200000	800000
	<b>Sub-total for this output</b>	23000	224000	205000	205000	205000	862000
<b>Subtotal for Component 1</b>		136500	1002500	560500	549500	531000	2780000
<b>Outcome 2.1 PCB management plans of selected rural cooperatives effectively implemented.</b>							
<i>Output 2.1.1 Screening criteria and financial mechanism formulated for subsidized funding for qualified electric cooperatives to implement PCB management plans</i>	International Consultants	6000					6000
	Nat. Experts	28000					28000
	Sundries	2000					2000
	Project staff travel	3000					3000
	Equipment						0
	Workshops	1000					1000
	Subcontracts						0
	<b>Sub-total for this output</b>	40000	0	0	0	0	40000
<i>Output 2.1.2 The PCB disposal facility at Limay, Bataan upgraded for undertaking further disposal of 600 t of PCB equipment coming from the Electric Cooperatives</i>	International Consultants	20000					20000
	Nat. Experts	15000	15000				30000
	Sundries						0
	Project staff travel	6000	4000				10000
	Equipment		900000				900000
	Workshops						0
	Subcontracts		40000				40000
	<b>Sub-total for this output</b>	41000	959000	0	0	0	1000000
<i>Output 2.1.3 PCB wastes screened, transported, treated and disposed at the existing Non-Combustion Facility at Limay, Bataan</i>	Consultants	4000	6000	4000	6000		20000
	Nat. Experts	32000	35000	35000	35000	32000	169000
	Sundries	2000	2000	2000	2000	2000	10000

GEF Outcome / Outputs		Year 1	Year 2	Year 3	Year 4	Year 5	Total
		US\$	US\$	US\$	US\$	US\$	US\$
	Project staff travel		12000	12000	12000	12000	48000
	Equipment		25000				25000
	Workshops		2000	2000	2000	2000	8000
	Subcontracts		300000	300000	300000	300000	1200000
	<b>Sub-total for this output</b>	38000	382000	355000	357000	348000	1480000
<b>Subtotal for Component 2</b>		119000	1341000	355000	357000	348000	2520000
<b>Outcome 3.1 Increased capacity for and awareness on sustainable and effective WEEE and PCB wastes management by relevant stakeholders</b>							
<i>Output 3.1.1 Training programs on PCB and WEEE management for relevant stakeholders designed and implemented</i>	International consultants						0
	Nat. Experts	5000	5000				10000
	Sundries	2000	2000				4000
	Project staff travel	1000	1000				2000
	Equipment						0
	Workshops	8000	8000				16000
	Subcontracts						0
	<b>Sub-total for this output</b>	16000	16000	0	0	0	32000
<i>Output 3.1.2 Awareness programs on WEEE and PCB waste management formulated and conducted</i>	International consultants						0
	Nat. Experts	8000	10000	10000	10000	10000	48000
	Sundries	1000	1000	1000	1000	1000	5000
	Project staff travel	2000	2000	2000	2000	2000	10000
	Equipment						0
	Workshops		5000	5000	5000	5000	20000
	Subcontracts		95000	95000	95000		285000
	<b>Sub-total for this output</b>	11000	113000	113000	113000	18000	368000
<b>Subtotal for Component 3</b>		27000	129000	113000	113000	18000	400000
<b>Outcome 4.1 The project and all its stakeholders are able to monitor and evaluate the project's progress allowing for the implementation of the National action plan.</b>							
<i>4.2.1 The project and all its stakeholders are able to monitor and evaluate the project's progress allowing for the</i>	Consultants			25000		25000	50000
	Nat. Experts	10000	16000	20000	16000	20000	82000
	Sundries	1000	1000	1000	1000	1000	5000

GEF Outcome / Outputs		Year 1	Year 2	Year 3	Year 4	Year 5	Total
		US\$	US\$	US\$	US\$	US\$	US\$
<i>implementation of the National action plan.</i>	Project staff travel			3000		3000	6000
	Equipment						0
	Workshops	8000	4000	8000	4000	8000	32000
	Subcontracts	5000	5000	5000	5000	5000	25000
	<b>Sub-total for this output</b>	24000	26000	62000	26000	62000	200000
<b>Subtotal for Component 4</b>		24000	26000	62000	26000	62000	200000
<b>Project total</b>		306500	2498500	1090500	1045500	959000	5900000
<i>Project Management</i>	Consultants						0
	Nat. Experts	40000	40000	40000	40000	35000	195000
	Sundries	1000	1000	1000	1000	1000	5000
	Project staff travel	5000	5000	5000	5000	5000	25000
	Equipment	5000	5000	5000	5000	5000	25000
	Workshops	5000	5000	5000	5000	5000	25000
	Subcontracts	5000	5000	5000	5000	5000	25000
	<b>Sub-total for this output</b>	61000	61000	61000	61000	56000	300000
<b>Project total including PM</b>		367500	2559500	1151500	1106500	1015000	6200000

# ANNEX G: DETAILED COFINANCING FROM ELECTRIC COOPERATIVES

## **ELECTRIC COOPERATIVES CO-FINANCING BREAKDOWN**

### **REGION 1**

PCB Owner	Committed to Project		In-Kind (Php)	In-Cash (Php)	Co-Financing Amount (Php)	Co-Financing Amount (\$)	No. of Years
	Oil (in Tons)	Equipment (in Tons)					
LUELCO		37.8	2,100,000	7,184,800	<b>9,284,800</b>	206,328.89	3
PANELCO I		19	4,496,960	9,174,359	<b>13,671,319</b>	303,807.09	3
PANELCO III		1.644	3,814,250	9,172,352	<b>12,986,602</b>	288,591.16	3
CENPELCO		10.2	1,450,000	2,636,400	<b>4,086,400</b>	90,808.89	3
ISECO		148.935	120,000	14,737,890	<b>14,857,890</b>	330,175.33	5
<b>TOTAL</b>	<b>0</b>	<b>217.579</b>	<b>11,981,210</b>	<b>42,905,801</b>	<b>54,887,011</b>	<b>1,219,711.36</b>	

### **REGION 3**

PCB Owner	Committed to Project		In-Kind (Php)	In-Cash (Php)	Co-Financing Amount (Php)	Co-Financing Amount (\$)	No. of Years
	Oil (in Tons)	Equipment (in Tons)					
TARELCO I	13.2	17.7	11,652,042	17,943,300	<b>29,595,342</b>	657,674.27	3
PENELCO		78.5	1,630,000	7,456,000	<b>9,086,000</b>	201,911.11	2.5
NEECO II AREA I		20.72	6,000,546	13,478,605	<b>19,479,151</b>	432,870.02	3
NEECO II AREA II		56.883	1,336,168	29,414,753	<b>30,750,921</b>	683,353.80	3
PELCO II		30.90466	15,718,256	11,871,398	<b>27,589,654</b>	613,103.42	3
<b>TOTAL</b>	<b>13.2</b>	<b>204.7077</b>	<b>36,337,012</b>	<b>80,164,056</b>	<b>116,501,068</b>	<b>2,588,912.62</b>	

### REGION 5

PCB Owner	Committed to Project		In-Kind (Php)	In-Cash (Php)	Co-Financing Amount (Php)	Co-Financing Amount (\$)	No. of Years
	Oil (in Tons)	Equipment (in Tons)					
CANORECO	6.1	40.74	12,480,000	6,789,280	<b>19,269,280</b>	428,206.22	4
CASURECO 1		5	766,000	2,294,650	<b>3,060,650</b>	68,014.44	3
CASURECO 2		10	600,000	2,367,000	<b>2,967,000</b>	65,933.33	3
CASURECO 3		20	420,000	2,484,500	<b>2,904,500</b>	64,544.44	1
CASURECO 4		55.13	749,000	6,291,314	<b>7,040,314</b>	156,451.41	1
FICELCO		20.09	912,000	12,300,000	<b>13,212,000</b>	293,600.00	5
MASELCO		35		2,335,000	<b>2,335,000</b>	51,888.89	1
SORECO 1	1	14	968,400	2,628,720	<b>3,597,120</b>	79,936.00	3
SORECO 2	2	15	1,160,000	2,343,000	<b>3,503,000</b>	77,844.44	1
TISELCO		4.52	104,000	306,000	<b>410,000</b>	9,111.11	2
<b>TOTAL</b>	<b>9.1</b>	<b>219.48</b>	<b>18,159,400</b>	<b>40,139,464</b>	<b>58,298,864</b>	<b>1,295,530.30</b>	

### REGION 8

PCB Owner	Committed to Project		In-Kind (Php)	In-Cash (Php)	Co-Financing Amount (Php)	Co-Financing Amount (\$)	No. of Years
	Oil (in Tons)	Equipment (in Tons)					
LEYECO V	46.522	133.6906	4,801,263	12,772,600	<b>17,573,863</b>	390,530.28	1
NORSAMELCO			1,737,940	11,900,000	<b>13,637,940</b>	303,065.33	5
SAMELCO II			2,511,000	11,865,000	<b>14,376,000</b>	319,466.67	5
SOLECO			4,731,990	3,210,000	<b>7,941,990</b>	176,488.67	5
DORELCO			1,516,160	6,386,024	<b>7,902,184</b>	175,604.09	1
<b>TOTAL</b>	<b>46.522</b>	<b>133.6906</b>	<b>15,298,353</b>	<b>46,133,624</b>	<b>61,431,977</b>	<b>1,365,155.04</b>	

**CARAGA**

PCB Owner	Committed to Project		In-Kind (Php)	In-Cash (Php)	Co-Financing Amount (Php)	Co-Financing Amount (\$)	No. of Years
	Oil (in Tons)	Equipment (in Tons)					
SIARELCO		8	1,084,800	1,214,080	2,298,880	51,086.22	5
<b>TOTAL</b>					<b>2,298,880</b>	<b>51,086.22</b>	

<b>GRAND TOTAL CO-FINANCING FOR ECs</b>					<b>293,417,799</b>	<b>\$6,520,395.54</b>	
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## **LIST OF ADDITIONAL ANNEXES**

**ANNEX H: DESCRIPTION OF THE PHILIPPINE NONCOMBUSTION FACILITY FOR PCB TREATMENT**

**ANNEX I: ENVIRONMENTAL AND SOCIAL MONITORING FRAMEWORK**

**ANNEX J: GENDER ANALYSIS**