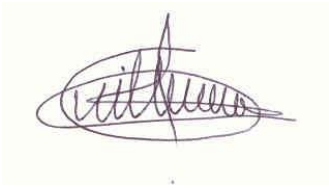
"Project 00087582 Integrated and Environmentally Sound Management of Polychlorinated Biphenyls (PCBs) in Ecuador"

Terminal Evaluation

Project	Integrated and Environmentally Sound Management of PCBs in Ecuador
GEF ID	4741
UNDP PIMS	4827
Evaluation period	May 2014 – May 2018
Evaluation date	22 January to 22 April 2018
Country	Ecuador
Focal Area	Persistent Organic Pollutants (POPs)
Operational Program	OP 4
GEF Strategic Priority	POPs SP1, POPs SP-2
Implementing Agency	Ministry of the Environment of Ecuador (MAE, in its Spanish acronym)
Other partners involved	Ministry of Electricity and Renewable Energy (MEER in its Spanish acronym)
Evaluation Team	Guillermo Román Moguel Signature: 
Acknowledgments:	To the personnel of the Ministry of Environment MAE, of the Country Office of the United Nations Development Programme, and of the Coordinating Unit of the Project, for their kind information contribution and support during the development of the evaluation

Executive Summary

Summary table of the project

Project title	**Integrated and Environmentally Sound Management of Polychlorinated Biphenyls (PCBs) in Ecuador"**			
GEF Project Identification	4741	Financial Resources	*At the time of the approval (USD million)*	*At the time of completion (USD million)*
GEF Agency Project ID	87582	GEF Funding	2.000.000	2.000.000
Country:	Ecuador	IA y EA own:		
Region:	Latin America and The Caribbean	Government:	1.083.105	
Focal area:	Persistent Organic Pollutants (POPs)	Other	8,310,844	
Operational Program:	OP 4	Total Cofinancing:	9,393,949	
Implementing Agency:	Ministry if the Environment (MAE, in its Spanish acronym)	Total Project Expenditure:	11.393.949	
Other partners involved:	Ministry of Electricity and Renewable Energy (MEER, in its Spanish acronym)	PRODOC signature (Project start date):		January 2014
		Closing date (Operational):	Budget: 31/10/2017	Real: May 2018

Project description:

The objective of this project is to promote the sound management of PCB contaminated oil, equipment, sites, and wastes in Ecuador, according to the Basel and Stockholm Convention. The project aims to reduce the obstacles to achieve a good PCB management through the following components: 1) Institutional Capacity strengthening for sound and environmentally friendly management of PCBs; 2) Environmentally Sound Management (ESM) of PCBs; and 3) Environmentally sound storage and disposal of PCBs waste. The project is expected to generate significant benefits for the Global and Local Environment.

Evaluation rating table

Project performance rating		
Criteria	Rating	Comments
1.Monitoring and Evaluation: Very satisfactory (VS), Satisfactory (S), Somewhat satisfactory (SS), Somewhat unsatisfactory (SU), Unsatisfactory (U), Very Unsatisfactory (VU)		
Overall quality of M&E	S	
M&E design at the beginning of the project	SS	
Implementation of the M&E plan	S	
2. Implementation of IA y EA: Very satisfactory (VS), Satisfactory (S), Somewhat satisfactory (SS), Somewhat unsatisfactory (SU), Unsatisfactory (U), Very Unsatisfactory (VU)		

Overall quality of the application and implementation of the project	S	
Executing agency performance	VS	
Implementation agency performance	S	
3. Outcome Evaluation: Very satisfactory (VS), Satisfactory (S), Somewhat satisfactory (SS), Somewhat unsatisfactory (SU), Unsatisfactory (U), Very Unsatisfactory (VU)		
Overall quality of the outcomes of the project	S	
Relevance: relevant (R) or not relevant (NR)	R	
Effectiveness	S	
Efficiency	S	
4. Sustainability: Likely (L), Somewhat Likely (SL), Somewhat Unlikely (SU), Unlikely (U).		
Overall probability of sustainability risks	L	
Financial Resources	SU	
Socio-economic	SL	
Institutional and governance framework	L	
Environmental	L	
Impact: Significant (s), Minimum (M), Insignificant (I)		
Improvement of environmental status	S	Based on the trend noted
Environmental stress reduction	S	Based on the trend noted
Progress towards tension change of the state	S	
Overall results of the project	S	The project achieved satisfactory results

Summary of conclusions, recommendations and lessons

In conclusion, the overall result of the **Project** is satisfactory. The two main results with impact in the medium term, which are the regulations established and the trend institutionalization towards the sound management of PCBs in electricity companies, have been achieved; In addition, the global cofounding was higher by 11% from the committed percentage in the Project Document, as a result of this institutionalization.This is supported because all the outcomes were obtained in a satisfactory manner, such as the issuance of regulations for PCB management (Ministerial Agreement 146 and the National PCB Management Plan), the start of its implementation in companies in the electric sector, the training of a number of people far superior to that established in the Prodoc and the production of technical guides, with the exception of the tons of PCBs eliminated, with respect to what is established in the Project Document.

The foregoing could also represent an opportunity for the development of an extension and consolidation of the outcomes, through a search for international financial support for this, relying on what has been accomplished so far.

Regarding the monitoring and evaluation (at the design and M&E phases) of projects such as the one evaluated here, the recommendation is to establish clearer goals and carefully defined in their scope, in order to avoid expectations that are difficult to comply with (as in this case the eliminated tons or the complete inventory, or in its case, the "feasibility" of elimination)

In order to be able to reinforce, but mainly extend the benefits achieved so far, it is recommended to strengthen the monitoring of compliance with Ministerial Agreement 146 and the National Management Plan by the electricity companies; elaborate, even if it is an estimate, a real feasibility study of destruction of existing PCBs in the country, to be contextualize by 2028 the resources required for this and the most

appropriate technical channels and maintain the critical mass of personnel trained within the project, so that their knowledge and experience permeate even more within the MAE and the MEER.

Recommended future directions to achieve the medium and long-term impact objectives of this project are: implementing the National PCB Management Plan throughout the country, particularly by strengthening actions towards private owners of electrical equipment; evaluate the possible attainment of additional financial resources, since electricity companies are mostly public, for the elimination of PCB stocks and extend the knowledge and experiences acquired to other Persistent Organic Pollutants, in this way, the impact would be replicated in other toxic substances.

The relevance of the project is not under discussion. However, regarding performance and success, the learning that can be taken from this project, as in many other instances, comes from its non-positive part, in this case during the design and adaptive management phases, there was a lack of precision and/or of rigor in the definition of the scope of the established goals or in their rectification at the most propitious moment, which in this case was in the Midterm Evaluation.

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Acronyms and abbreviations

IA	Implementation Agency
APR	Annual Project Review
ARCONEL	Agency for Regulation and Electricity Control (in Spanish)
SC	Steering Committee
CEOSL	Confederation of Trade Unions of Ecuador (in Spanish)
CO	Country Office
POPs	Persistent Organic Pollutants
CONELEC	National Council of Electricity (in Spanish)
EMS	Environmental Management Systems
ESM	Environmentally Sound Management
GEF	Global Environment Facility
MAE	Ministry of Environment (in Spanish)
MEER	Ministry of Energy and Renewable Energies (in Spanish)
MTE	Mid Term Evaluation
UN	United Nations
PCB	Polychlorinated biphenyls
PIR	Project Implementation Review
PNI	National Plan for the Implementation of the Stockholm Convention
PNUD	United Nations Development Program
ppm	parts per million
PPR	Project Progress Reports
PCU	Project Coordinating Unit
SAICHM	Strategic Approach to International Chemicals Management
SENPLADES	Secretaría Nacional de Planificación y Desarrollo
Mt	Metric tons

1 Introduction

1.1 Purpose of the evaluation

This Terminal Evaluation (TE) is intended to determine the main achievements of the project 00087582 **Integrated and Environmentally Sound System of PCB Management in Ecuador,** funded by the Global Environment Facility (GEF), with a financial support of US$ 2.000.000.

This Terminal Evaluation intends to analyze, as objectively as possible, the project, from its design phase until its closure including its achievements, outcomes, and impacts. The Evaluation aims to determine the relevance, efficiency, and effectiveness of the outcomes, as well as the outcomes and the sustainability and the impact of the project. It also includes lessons learned and best practices obtained during the implementation phase, which could be useful for similar projects.

The evaluation may also be useful to improve, when applicable, the sustainability of the project and support the improvement of UNDP programming.

The evaluation was conducted under the Terms of Reference Terms of Reference published by UNDP-Ecuador, presented in Annex A, which are based on the "Guidance for Conducting Terminal Evaluations of Projects Supported by UNDP and Funded by the GEF", (GEFTE), (UNDP, 2012).

1.2 Scope and Methodology

The scope of the evaluation covers the period from May 2014 to May 2018. The evaluation was conducted according to the established methodology in the GEFTE and follows the structure established there. The evaluation includes a participatory consultation approach, in addition to the review of documentary evidence, guaranteeing a rapprochement with the government counterpart, the offices of UNDP Ecuador and Regional for LAC, the project team and other relevant stakeholders. The criteria of relevance, effectiveness, efficiency, sustainability, and impact are those denoted in the GEFTE and they are underpinned in the Results section. The results matrix is also the one established by the Guidance.

Relevant documentation for this evaluation was obtained with the support of the Project Coordinating Unit, the government counterpart, Ministry of Environment (ME) and other institutions, the UNDP country office, and the UNDP regional office for Latin America and the Caribbean. This documentation was reviewed by the evaluator. The list is presented in Annex B.

Additionally, information was obtained from the face-to-face interviews in the cities of Quito, Guayaquil, and Ibarra during the Field Mission that took place from 5 to 9 February 2018, with key actors for the project, whose detailed list of people, places, and scope is presented in Annex C. All the foregoing with a questionnaire previously prepared, presented in Annex D, during the Mission. For reasons beyond the reach of the evaluator, no visits were made in the province of Galapagos. At the closure of the mission, preliminary results were presented to the Project Coordinating Unit, the government counterpart and the UNDP country office. The list of assistants is presented in Annex H.

The Evaluation team was formed only by an international evaluator, whose signed Agreement Form is presented in Annex E.

1.3 Terminal Evaluation Structure

This document consist of 5 chapters, plus two unnumbered initial sections. The first is the cover page, which presents the general information of the project. The second consists of the executive summary, which contains a synthesis of the project, the main findings, recommendations and conclusions, as well as the general qualification of the project. In Chapter 1, Introduction, the purpose, scope and objectives of this evaluation work is presented, as well as the methodology used and the structure of the report.

Chapter 2, Project description and development context, focuses on the analysis of the development context of the country concerning the problem that this project addressed and how to deal with it. The expected deadlines for the implementation of the project, the immediate objectives, the expected results, and key indicators are detailed, as well as the coordination arrangements that include the key actors involved. Chapter 3 presents the findings of the evaluation, which include design, implementation, results obtained and sustainability. In Chapter 4, Conclusions, Recommendations and Lessons, the rating of the project is found, while Chapter 5 corresponds to the Annexes, with information that supports the contents of this report.

2 Project description and development context

2.1 Project start and duration

The project was originally approved for a period of 46 months, (Prodoc signed in English) from January 2014 to October 2017. For the purposes of this evaluation, the original implementation dates are considered, to complete 4 years. Subsequently, the Steering Committee at its meeting in December 2016 requested an extension, until March 2018, with the main objective to conclude a series of activities and obtain the respective results in that period. The request of the extension for 5 more months is documented in the PIR annual reports of the project, the project end date was October 30, 2017. The extension was granted by the GEF for 7 more months, until May 31 of 2018

In the period of this evaluation, there are still a limited number of activities in progress that should be completed, including the project closure workshop and the transfer of the project to the government counterpart.

2.2 Problems the project intended to solve (based on the PRODOC)

Firstly, the main problems that the project faced were considered, based on what was established in the Project Document, in general it was the existence of a quantity of PCBs and the lack of institutional capacity to implement a national system of Environmentally Sound Management (ESM) of PCB through the development of feasible alternatives for the storage and environmentally sound disposal of PCB stocks in Ecuador. In particular, this was disaggregated into the following problems.

- The lack of an updated and accurate PCB inventory; (1,400 estimated Tons of oil);
- The lack of monitoring, control and law enforcement;
- The absence of a long-term plan for capacity building and institutional strengthening;
- The lack of physical infrastructure and environmentally sound management of PCB practices; and
- The lack of a national plan and alternatives for disposal of equipment and PCB-contaminated oils.

2.3 Immediate and Project development objectives

The overall environmental objective of the project was to promote the rational management of oils, equipment, sites and waste contaminated with PCBs in Ecuador, reinforcing the ESM mainly through training of authorities for surveillance and companies in the electrical sector for handling materials with PCB, and the elimination of 750 tons of equipment, oils and waste contaminated with PCB.

With respect to its development objectives, the project had first to strengthen the institutional capacity for healthy and environmentally friendly management of PCBs, through the development of management standards (including a national management plan), the development of more reliable inventory and training of authorities. The above in order to meet the second development objective of achieving environmentally sound management of PCBs, supported by guidelines, regulations and feasibility studies. A third objective was focused on the temporary storage and disposal of PCB

waste, through the achievement of its application also supported by technical guidelines and with the established commitment of all companies in the electricity sector and with pilot examples of elimination of PCB materials. Ultimately, establish monitoring, adaptive feedback and evaluation.

2.4 Reference indicators established

The global indicators of the Project, according to how they were specified in the Project Document, were presented in 3 groups:

- Tons of PCBs (liquids and solids) eliminated (750 Ton) and Tons properly stored, (of which a numerical target was not established);
- Number of personnel of the authorities (30 officials) trained, including the establishment of a Standard and 4 Guides or manuals;
- (Quantity of) Sound management of PCB materials, including one (1) treatment / disposal alternative in operation; 75% of existing electric sector companies trained and using the new policy guidelines; 40 members of the maintenance staff, and other personnel of the PCB owners, trained in safe PCB management; and 10 inspectors / law enforcement officers trained to enforce compliance with national laws / regulations on the management of PCBs.

Although some indicators are SMART (specific, measurable, achievable, relevant and with a time frame), neither the second part of the first indicator (tons stored) nor the last one, called by this Evaluator as "Quantity of Sound Management" , which results redundant in the number of inspectors (authorities) trained. In particular, the time frame of the project was not established in the Prodoc, which is discussed later in point 3.1 regarding Design and Formulation of the project).

Particular products do have indicators and numeric targets for the most part, although there are some disparities between them and the general indicators, for example the National Management Plan does not appear in the latter (with its corresponding importance) while it is in the indicators of the outputs.

2.5 Main stakeholders

In the project document, the main stakeholders listed are:

- Ministry of the Environment (MAE, in its Spanish acronym)
- Ministry of Electricity and Renewable Energy (MEER, in its Spanish acronym)
- National Electricity Council (CONELEC[1]), in its Spanish acronym)
- Electricity Regulation and Control Agency (ARCONEL, in its Spanish acronym)
- Electric Distribution Companies (public and private)
- Organizations of the industrial sector
- Non-governmental organizations (NGOs)
- Workers' Associations
- Professional associations
- Research Centers

It should be noted that NGOs did not have a relevant involvement in this project, probably because there are no organizations involved in this issue in Ecuador, except for the training, while there was a strong involvement of the electric sector organizations, which are those that are more important for the purpose of the project. The latter, being part of the public sector, require less participation of NGOs. Regarding the Institutions of Higher Education and research, various activities were carried out first through the

[1] Through the New Electricity Regime Law (2015), CONELEC became the ARCONEL

SENESCYT and later directly with the institutions, making it possible to present proposals for research and thesis projects, as well as the accreditation of two laboratories

2.6 Expected outcomes

The expected outcomes, transcribed from the original signed Project Document are presented below:
Component 1

A. Improved legislations about hazardous chemicals, including PCBs-COPs
B. Improved institutional capacity to adequately manage PCBs, including the skills to present proper reports to the Convention of Stockholm Secretariat
C. Awareness raised amongst the general and the private sector about the importance of sound management of PCBs

Component 2

D. Management practices related to PCBs are improved

Component 3

E. Proper storage of PCB-contaminated oil, equipment and other wastes
F. Proper disposal of 50% of currently identified stocks ((750 MT)
G.

The following outputs were established to develop, to achieve the outcomes previously exposed, also from the original Prodoc:

A.1 PCB legislation reviewed and updated
A.2 Norms and standards for environmentally sound management of PCBs are developed and adopted
B.1 National PCB Inventory updated and improved. Labeling of stocks
B.2 PCB stocks -tracking information system.
B.3 National PCB management Plan up to 2020 drawn up
C.1 Sound Management of PCBs training manual elaborated and published
C.2 Training of firms in the implementation of PCB management plans
C.3 Communications campaign, knowledge dissemination
D.1 Technical guidelines for PCB sound management are established
D.2 Security regulations are revised, improved and implemented
D.3 Feasibility studies of different in-country and out-of-country sound management and disposal options for oil, equipment and wastes contaminated with PCBs
D.4 Prioritization of the different options available for disposal and/or management of oil, equipment and wastes contaminated with PCBs.
D.5 Pilot and replicable projects for the proper disposal of PCB-stocks executed and evaluated
E.1 Contaminated equipment, oil and wastes are classified and properly stored
E.2 Environmental management plans for temporary storage facilities
F.1 Coordination mechanisms between the government and private holders of PCBs developed
F.2 Disposal plan developed and disseminated
F.3 Removal of PCB stocks from Galapagos
F.4 Verification of the capacity, safety and environmental performance of in-country disposal options
F.5 Disposal (in-country or abroad) of 750 MT of PCB contaminated oils, equipment and waste.

3 Findings

In order to evaluate the effective fulfillment of the foreseen in the project, the results of the documentary review were contrasted, including the report of the Mid Term Evaluation, considering the different sources with the interviews in the mission. The existing sources of information, regarding PIR (2015, 2016, and 2017) and the minutes of the Steering Committee meeting (two each year, from 2014 to 2017), which were

well documented allowing to establish progress, difficulties, the adaptations (and their reasons) during the development of the Project.

3.1 Project design and formulation

This section analyzes the planning phase during the elaboration of the Project Document, hence the comments are referred to that stage, even though during the implementation there is always an opening towards modifications or redesign (as part of adaptive management) and considering the mid-term evaluation.

The project was designed following the National Implementation Plan of the Stockholm Convention (NIP) for the most part, which confirms POPs as a priority issue for the country and the same from the point of view of the UNDP country office with regarding the subject of Chemicals and Residues. The Project formulation from the PIF was conceived by the Ministry of Environment in conjunction with the UNDP country office and the UNDP regional office. The Project was determined as a priority and as an investment project, by the National Secretariat of Planning and Development

3.2 Analysis of the logical framework (ALF) and the results framework (logic and project strategy, indicators)

In the elaboration of the narrative of the components, outcomes and outputs of the Project, the logical sequence was well devised, however the description of each output was scant. This resulted, throughout the development of the project, in an unclear definition of the scope of each output.

To mention only two cases, in product B.1 was defined: "B1. National PCB inventory updated and improved. Labeling of stocks ". And for this output only the following is described: "The fulfillment of this outcome requires the realization of a complete inventory of PCBs between electric generation and distribution companies, as well as private entities that use electrical equipment for their own generation of energy ". This do not specify how the Inventory would be performed, which was executed throughout the project as a record of the entire universe.
(It should be noted here that, in this case as in other countries, "inventory" is interpreted as the analytical determination of the composition of the entire universe of existing equipment, since there is no precise definition of the scope of the "Prodoc" text,“inventory” is ambiguous and therefore too broad in its compliance for countries of the region, it is possible to carry out the chemical characterization of the entire universe but in countries with other resources)

Similarly, in Result D, 5 Products are established:
"D1. Technical guidelines for PCB sound management are established.
D2. Security regulations are revised, improved and implemented
D3. Feasibility studies of different in-country and out-of-country sound management and disposal options for oil, equipment and wastes contaminated with PCBs,
D4. Prioritization of the different options available for the disposal and/or management of oils, equipment and waste contaminated with PCBs.
D5 Pilot and replicable projects for the proper disposal of PCB stocks executed and evaluated ".

And for them only the following is described:

"The CONELEC has a sub-committee of the electricity sector that has representatives of all the electricity companies, together with the Ministry of the Environment, which will actively participate in the review and approval of the technical guidelines of the PCB ESM that will be established.

The different technical alternatives and economically viable options for the elimination of oil, equipment and waste contaminated with PCBs will be evaluated to define the action plan on compliance with the PCB elimination plan to be developed. "

Where once again it is difficult to establish the scope from this design phase, but later the PCU will adaptively define them and the SC will support them.

In contrast, with regard to the Results Framework, this is more precise and numerical, especially in the indicators of the Project Objective, which are all relevant to the process of eliminating PCBs from the country, only having as absence the National Management Plan which does appear, but as an indicator of one of the Output, when due to its importance it should have been a relevant global indicator). 9 global indicators are established that include 3 indicators of Management (elimination, storage and treatment/elimination), one of normativity (norm) and the remaining 5 are referred to training.

The baseline (of 1,400 tons of PCB fluids from which it was split, as expressed in the Prodoc) was taken from a previous study funded by GEF and executed by UNEP for the MAE.

3.2.1 Assumptions and risks

The main risks were identified in the design of the project, in particular, the absence of specific regulation, but that was not relevant as will be detailed in the implementation section 3.2 below. The one that remains is the risk regarding the economic restrictions of the companies to carry out the inventory and the elimination. On the other hand, the risk (effect) of the change of the electric companies from private to public was not considered in the design, since this was very difficult to foresee at the time of elaboration of the Prodoc, since the new Law of the Electric Sector was issued in 2015.

3.2.2 Lessons from other relevant projects incorporated into the project design.

This project in its design makes no reference to other similar projects in the region, even though there were already some in the process of implementation.

3.2.3 Planned stakeholder participation

The MAE as a counterpart was established as the main stakeholder in the project through the National Directorate of Environmental Control, dependent on the Undersecretary of Environmental Quality of the Ministry of the Environment of Ecuador and acting as director of all project activities. The ARCONEL (initially CONELEC) as part of the Ministry of Electricity and Renewable Energy of Ecuador (MEER) was incorporated in order to help enforce the environmental regulation to companies in the sector. Third, the participation of Electricity Distribution Companies (public and private) was also considered as an essential part of the project, since they are the direct users of the results and activities of the project because environmentally sound management PCBs depends on them. These 3 previous organizations fulfilled the participation considered in the design. However, the other stakeholders: industrial organizations, non-governmental organizations, workers' associations, professional associations, and research centers did not have a clearly defined role in the design of the Project Document and their participation was obtained throughout the development of the project based on the visibility of the project as well as the subject of PCBs in the country; This participation was mainly focused on the reception of the trainings and awareness-raising events.

3.2.4 Repetition approach

The repetition (replication) approach is found in the Prodoc only implicitly in the training activities and technical guides; it is mentioned in a general way as in Output D.5 (where it can be inferred that this pilot will be that of Galapagos, but it does not correlate with the corresponding Output F.3) and it is not specified how it will be carried out; This could also be verified by examining the important results obtained

in the management and management of the PCBs of the Galapagos Island, which although it is an environmental icon, it is very difficult to replicate in other parts of the country precisely because of this: the peculiarity of existing conditions in it.

This, during the development of the project could have been incorporated as a result of an adaptive management process, to leave some bases of replication for other provinces.

3.2.5 Comparative advantage of UNDP

UNDP encourages and supports that governments or counterparts in the countries not only directly execute the projects, but also that they take ownership of the issue and its continuation, beyond the conclusion of specific projects with international support. UNDP contributed to this project with its experience in pollution control and its ability to coordinate the participation of the productive sector (the electricity sector in this case is a combination of government and private companies) and the government for projects of this type. Other similar projects, implemented by UNDP in the region, began in Brazil, Mexico, Argentina, and Honduras, where it is established that there were advantages for which the experiences were being developed in them.

3.2.6 Links between the project and other interventions within the sector.

In addition to the direct relationship with the Ministry of the Environment (MAE), the link of this project can only be recorded as the work that ARCONEL had been carrying out (such as CONELEC) with the companies in the electricity sector before starting the project (in the beginning of this as private and during its course as public companies). Links were also established in particular with private cement companies, for the possible elimination of oils with PCB, as was confirmed during the interview held during the field work of this evaluation. It is also known that there was contact with similar projects in Latin American throughout the development of the Project, reported in general as useful, through interactions during annual UNDP workshops in the region.

3.2.7 Management provisions

The implementation modality of this project was the national implementation (NIM) with UNDP support. In this, the participation of the UNDP Ecuador Office and the Regional Technical Advisor (RTA), are mainly focused on monitoring the progress of the project, guaranteeing the quality of the results obtained, as well as the proper use of resources, as approved by the donor. This should favor the appropriation of the project by the government of the country, having direct interference in all decisions and should also support the sustainability of the matter in the long term.

Regarding the duration of the project, on the cover of the signed project document (in English) the start date is set as January 2014 and ending in October 2017. In the Mid-Term Evaluation it was recommended to request the extension by two months. As mentioned, there was an agreement (documented) of the request for an extension for another 4 months based on the fact that the project actually started in May 2014. So in the broadest case according to these dates, the Project duration would be 50 months. Within the signed versions of the Prodoc in English and in Spanish, there is no annex to the annual activity plans.

The national implementation agency of the project is the Ministry of the Environment, through the National Directorate of Environmental Control, dependent on the Undersecretary of Environmental Quality. The arrangements are presented in Figure 1 below.

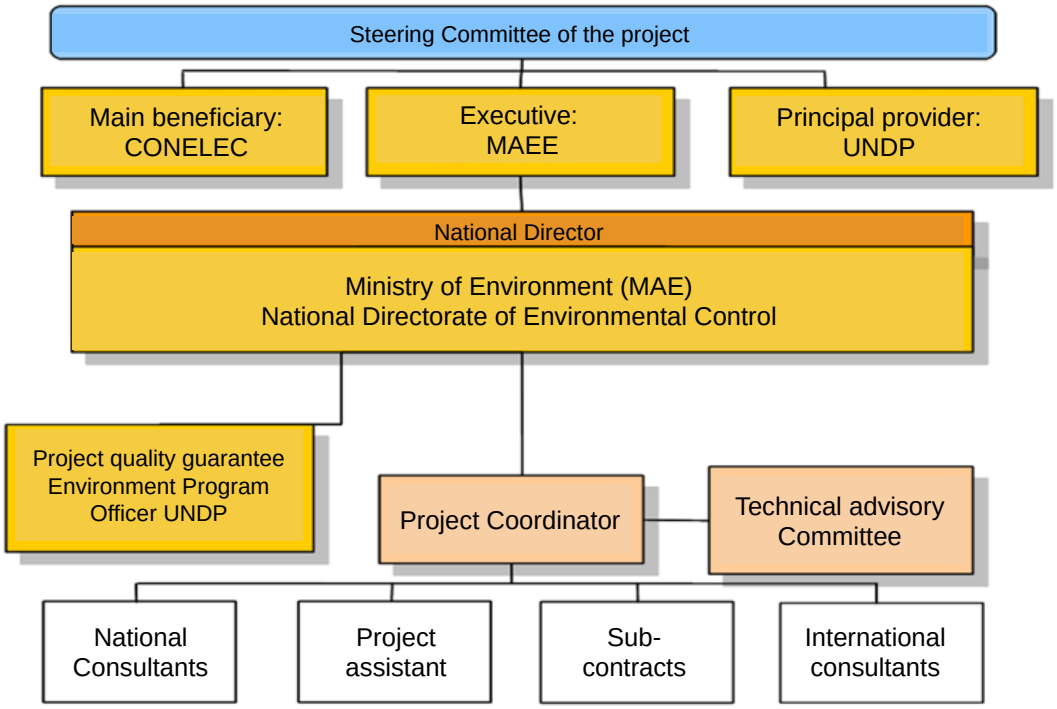
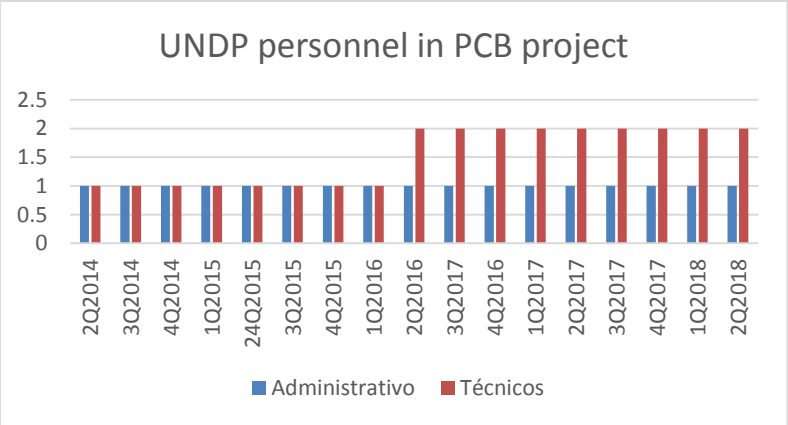


Figure 1. Project structure from the PRODOC

The PRODOC establishes that the Project Steering Committee, made up of the MAE, CONELEC (later ARCONEL) and UNDP, will be responsible for approving the annual budget and work plan. It is inferred that they should meet at least once a year; This was more than fulfilled since there was more than one meeting each year during the development of the project. A "Coordinating Committee" was also established, which met quarterly to monitor project progress and quarterly reports. The Technical Advisory Committee, formed by members of the PCB subcommittee of the electric sector, representative of academic and ministerial laboratories, but the periodicity of the meetings is not established. Through the documentary review it can be established that the Steering Committee met 13 times in the 4 years of the project: twice in 2014, five times in 2015, three times in 2016, and three times in 2017.

The Project Document does not establish in the text the personnel of the Project Coordinating Unit, only in the previous Figure where the coordinator and a project assistant are specified. This was maintained until the first quarter of 2016, when an additional technician was incorporated. Figure 2 below shows the staff of what was considered the Coordinating Unit, which maintained between 5 and 6 people throughout the entire project. It is necessary to emphasize that the MAE contributed with the differential salaries of people (an administrative and 4 technicians on average), something that does not happen so frequently



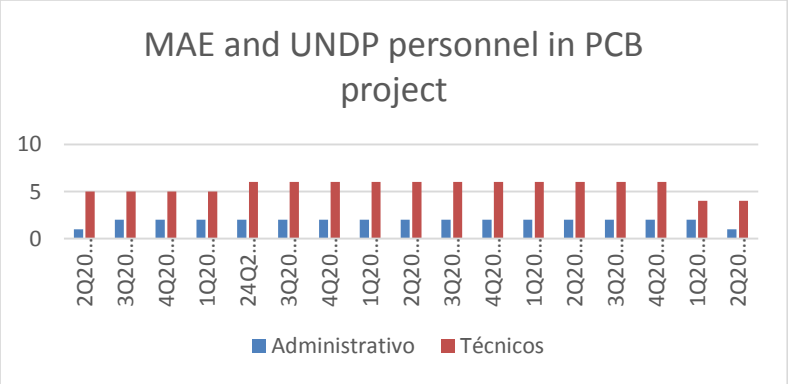


Figure 2. Contracted personnel during the project

3.3 Project Implementation

The project implementation is reviewed in this section, with respect to the outcomes and activities as well as the administrative provisions for its implementation

3.3.1 Adaptive management (changes in Project design and results during the execution)

As a sample of adaptive management, Table 1 below shows the follow-up of the recommendations made during the Mid-Term Evaluation and most of them were covered, although some of them were neither strictly the responsibility of the Project, nor were clearly specified the required activity. For example, when requesting the extension of the project, it says "... Consider an extension of two months ...". From those, the results framework was not explicitly redefined, except for the request in January 2017 to modify the destruction goal, as well as the extension of the Project, based on the SC Minutes of December 2016.

Table 1. MTE Recommendations for the Project Integrated and Environmentally Sound of PCB management in Ecuador

Rec	Recommendation	Responsible Entity/Status
1	Component1. Institutional Capacity Strengthening for sound and environmentally friendly management of PCBs	
1.1	It is recommended that technical assistance is deepened at decentralized level and in a set of programs and projects for hazardous waste, prioritizing the support in areas of extreme poverty and high climatic vulnerability in the country	PCU , EE, UNDP and Government
1.2	Strengthen the communication strategy of the Project in the country, for greater	Government and UNDP

	support to projects that have criteria for sustainable development	
2	Component 2. Environmentally Sound Management of PCBs	
2.1	Share the results of studies with public and private decision-makers agreeing the most viable alternative	PCU, EE, UNDP and Government
2.2	Ensure that the institutions involved allocate sufficient resources for ESM of PCBs	PCU, EE, and government
2.3	Asses the feasibility (logistic, operational, and financial) to replicate this pilot experience (export and disposal of PCBs to a country with the proper technology	PCU, EE, UNDP and government
3	Component 3. Environmentally sound storage and disposal of PCBs waste	
3.1	Environmental Management Recommendations in Galapagos in Protected Areas	Galápagos, PCU, EE, and government
3.2	Increase technical assistance to environmental areas of Electric Companies to improve storage	PCU
4	Project Implementation and Adaptive Magement	
4.1	Modify (from 2016) spending categories and percentage of disbursements to each budget line of the Project	PCU
4.2	Work with reduced staffing and maintaining the existing technical team to complete the implementation	PCU
4.3	Allocate the remaining resources in the priority outcomes	PCU, EE, UNDP
4.4	Consider a two-month extension for the full implementation of the allocated funds	Government, UNDP GEF
5	Sustainability	
5.1	For the sustainability of national public policy, it is important to measure results and document good practices: Systematize the information	PCU
5.2	Critical analysis should be performed on the cost of efforts provided and results achieve in order to have a realistic projection of available resources for the coming years	PCU , EE, UNDP and government
5.3	Support the efforts of the government to know the portfolio of programs and projects of all international agencies to establish funding opportunities and plan coordinated strategy exploiting knowledge already generated from the project	PCU , EE, UNDP and government

In the Table , the fields marked with green were evaluated as completely fulfilled, whereas those marked with yellow were partially fulfilled. In the EMT it was considered as a risk "... the rotation of national authorities" as well as the "... proximity of national elections" for the continuity of the project, which can be witnessed for example by the change of 3 Ministers with their corresponding Undersecretaries of the MAE in 3 years, to which the CD and the PCU could only attend through a constant insistence on the presentation of the Project to the new authorities in each case.

Regarding the project team, the activities were well distributed and fulfilled throughout its development, with a consistent technical and administrative staff, without being excessive; so it is verified that the execution team has achieved a good adaptive management, following the directives of the Steering Committee and orienting the activities towards obtaining results .

3.3.2 Partnership agreements (with relevant stakeholders involved in the country or region)

The project has managed to successfully involve the MAE areas - in particular the National Direction of Environment Control and the Undersecretary of Environment Quality; likewise, the important involvement of ARCONEL through its representative in the Steering Committee, whose opinions in the evaluation of the PIRs, is worth noting.

In the mission and through the documents it was observed that the execution capacity existed in terms of human resources, offices, and related infrastructure, administrative system and management, and that it was fully operational and highly functional. In general, the evaluator considers that the capacity of the project management unit was strong and focused, as well as being well coordinated with the other departments within MAE, ARCONEL and MEER as well as with most of the interested parties.

Regarding the UNDP country office, it was noted that it was closely involved in the project, giving it support and participating in the meetings convened and gave its support for the proposed extension of the project.

The approach of the project to the provincial companies (which could have information, either from interviews in Guayaquil and Ibarra and in documentary) is considered successful, since the interest to implement the Management System was verified, although in general the main focus they demonstrated was towards the need to finish the inventory on time, since there is a mandatory requirement to do so, through ministerial agreement 146. Regarding the potential owners of equipment contaminated with PCBs from the private sector, it is still a pending task after the end of the Project.

3.3.3 Feedback of M&E activities used for adaptive management

With regard to reports and minutes of the Steering Committee, PIRs and POAs, as well as all the reports recorded advances, programs, and recommendations their execution was impeccable. The only point that was not adequately covered by adaptive management was the lack of an annual program of activities, since it does not exist in the Prodoc, it should have been drawn up throughout the project; this was later corrected throughout the project, in the electronic submission of the multiannual POA.

Therefore, it is considered that the feedback was effective from the above, as well as the goals obtained, and the activities carried out. The meetings of the Steering Committee to issue guidelines were sufficient. The feedback from the Mid-Term Evaluation was attended to, although not totally, as established in section 3.2.1 above.

3.3.4 Project funding

The project received a cash funding from the GEF, amounting to US $ 2 million. The Government of Ecuador committed to a co-financing of US $ 1,083,105 (of which, remarkably, approximately 50% was in cash) while the companies related to the electricity sector would make contributions of US $ 8,310,844 (in kind) for the treatment of equipment with PCB.

It is considered that the project budget has been sufficient to achieve the expected outcomes in each component of the project's results framework.
The evaluation team has not received evidence documenting problems or deficiencies in the disbursement of funds in an appropriate framework and/or in a timely manner. In addition, there are financial controls and periodic audits.

Table 2 below shows the expenses exercised from 2014 to 2018, which represent practically all of the resources, it includes the estimated expenses of 2018.

While in Table 3 it is broken down into cofinancing provided by the different actors.

Table 2. Annual Budgets executed, in American dollars by Project component from annual Project reports.

			2014	2015	2016	2017	2018		
Component	**Prodoc**	**%r**	**Exec.**	**Exec.**	**Exec.**	**Exec.**	**Budgeted**	**Cumulative***	**% Exec.**
1: Institutional Capacity Straightening	230,000	11.5	123,122.99	57,080.74	7,042.10	40,821.26	$ 1,932.91	**228,067.09**	99%
2: Environmentally Sound Management of PCBs	450,000	22.5	0.00	325,630.75	83,183.87	38,314.24	2,871.14	**447,128.86**	99%
3: Environmentally sound storage and disposal of PCBs waste	1,070,000	53.5	-500.00	18,734.73	537,558.97	390,496.62	123,709.68	**946,290.32**	88%
4: Monitoring, learning, feedback	70,000	3.5	0.00	0.64	52,328.70	7,649.23	10,021.43	**59,978.57**	86%
5: Project Management Unit (PMU)	180,000	9.0	60,055.76	93,511.05	10,929.92	8,756.41	6,746.86	**173,253.14**	96%
Total	**2,000.000**	**100%**	**182,678.75**	**494,957.91**	**691,043.56**	**486,037.76**	**145,282.02**	**1,854,717.98**	**93%**

* Total from 2014 to 2017 what is really executed, the year 2018 is not added because it has not yet been executed

Table 3. Cofinancing of Business Units and Electric Companies of Ecuador

Business Unit / Electric Company	**Real Expenditure**							
	2013	**2014**	**2015**	**2016**	**2017**	**Total**	**Cof. previous to PCB project**	**Cof. According to PRODOC**
Emp. Electrica Azogues	$4,621.98	$500.00	$ 9,410.02	$25,344.00	$21,962.02	61,838.02	0.00	**90,024.80**
Corp. Nacional De Electricidad	$411,240.42	$487,586.46	$ 825,010.41	$949,984.65	$3,535,494.51	6,209,316.45	0.00	**1,946,751.18**
Emp. Elec. Regional Del Sur S.A.	$2,564.88	$25,450.84	$ 10,655.72	$50,000.00		88,671.44	0.00	**486,640.00**
Emp. Elec. Guayaquil /Cnel Ep Guayaquil	$45,335.51	$181,346.05	$ 122,999.97	$55,191.77	$957,138.20	1,362,011.50	361,970.20	**1,977,327.78**
Emp. Electrica Riobamba	$180,138.74	$43,850.00	$ 41,065.58	$32,905.60	$31,852.24	329,812.16	141,479.24	**767,789.24**
Emelnorte	$7,500.00	$120,960.00	$100,800.00	$170,000.00		399,260.00	-	**-**
Emp. Elec. Centro Sur S.A.	$34,958.20	$34,735.71	$35,535.71	$165,834.65		271,064.27	86,793.55	**1,504,494.38**
Emp. Elec. Cotopaxi S.A.	$10,733.01	$42,932.04	$54,256.36	$18,161.76		126,083.17	0.00	**155,000.00**
Emp. Elec. Galapagos S.A.	$38,504.65	$105,341.26	$37,760.95	$33,965.89		215,572.75	0.00	**385,136.00**
Emp. Elec. Quito S.A.	$30,708.16	$142,057.12	$112,373.72	$114,260.40	$162,474.00	561,873.40	0.00	**997,680.16**
MEER	$107,566.40	$53,500.00	$ 54,500.00	$ 30,300.00		245,866.40	0.00	**350,000.00**
ARCONEL	$7,100.00	$31,600.00	$26,600.00	$11,800.00		77,100.00	25,000.00	**89,200.00**
MAE	$ -	$199,295.92	$163,708.70	$102,012.12	$69,922.77	534,939.51	242,000.00	**643,905.00**
TOTAL	$880,971.95	$1,469,155.41	$1,594,677.14	$1,759,760.84	$4,778,843.74	**10,483,409.08**	**857,242.99**	**9,393,948.54**

-Cofinancing -

Table 4 below shows the information regarding the commitment of the co-financiers at the time of the elaboration of the Prodoc and the executed, according to the information that the project team consolidated and informed. The co-financing made by the government, considering MAE, ARCONEL and MEER a part is in kind and the other in cash, while what is done by the electricity companies, is not broken down, including: chromatographies, purchase of equipment, decontamination, and aid in kind . Some examples of evidence from some of the data reported below are presented in Annex C in more detail.

Table 4. Co-financing disaggregated by source

Confinancing Organization	**Committed Amount US$**	**Executed Amount US$ to 31/12/2017**	**% executed**
Electric companies	8,310,844	9,625,503	
Subtotal companies	**8,310,844**	**9,625,503**	**116%**
MAE (Government of Ecuador)	643,905	534,940	
MEER (Government of Ecuador)	350,000	245,866	
ARCONEL (Government of Ecuador)	89,200	77,100	
Subtotal Government	**1,083,105**	**857,906**	**79%**
Total	**9,393,949**	**10.483.409**	**111,6%**

In Table 5, the budget performance and the global cofinancing, under the consideration mentioned above for cofinancing

Table 5. Budget performance and global cofinancing

Cofinancing (type/source)	UNDP funding (USD million)		Government (USD million)		Partner (USD million)		Total (USD million)	
	Planned	Real	Planned	Real	Planned	Real	Planned	Real
Grants			0.644	0.535			0.644	0. 535
Loans/ concessions								
In kind aid			0.439	0.323			0.439	0.323
Other					8,311	9,626	8.311	9,626
Total			1.083	0.858	8.311	9,626	9.394	10.484

3.3.5 Monitoring and Evaluation: initial and implementation design (*)

Start-up, intermediate workshops and a final seminar were held where the results of the Project were presented to government authorities and interested parties. In addition, an independent project expert undertook a mid-term review of the project in mid-2016 to determine the progress made in achieving the results at that time, as part of the Mid-Term Evaluation.

From the project design, the monitoring and evaluation activities were carried out by the administration of the project based on updating the results and project activities table. The M&E was carried out on the activities planned for each component, even though the they were lacking in the initial schedule, but from the POAs, which were approved by the SC annually, based on the global data of the ProDoc. There are no numerical indicators that allow to visualize the consolidated progress of each component/activity based on the expected outcomes, but the activities planned for the period are evaluated individually. It is important to

mention that there was not a person specifically responsible for M&E, the same people who developed the project activities are those who carried out the M&E activities.

Annual reports were made to UNDP and the Steering Committee in periods from January to December of each year. They were also reported to the UNDP-GEF in the Annual Reports, PIR, which cover July from one year to June of the following year. Likewise, as part of the M6E of the Country Office, monthly and quarterly reports were delivered by the PCU; A compendium of these reports prepared by the consultant team, with respect to the results obtained, is presented in Table 6 below.

Table 6. Outcomes in SC and PIR reports

Report		Period	Date of the document	Outcomes, (Achievement in PIR and annual reports)			
				PCBs Elimination	**Training / Inspection**	**Management System**	**Approved Regulations**
1	SC 2014 / Annual Report	May – Dec 2014	05/01/2015	234,90 Ton <50ppm	118 people / inspections to all electricity companies	100% of obsolete equipment inventoried. Inventory of online equipment has not been started	No (elaborated, in distribution)
2	SC 2015 / Annual Report	2015	04/01/2016	51,12 Ton con < 50ppm	1036 people	100% inventory in Galapagos. 5% national inventory. National inventory system developed. Increase of 400 in analytical capacity. 16 sites characterized by PCB. 7 sites where contaminated soil was removed. 2 guides and 2 videos of PCB management prepared and disseminate	No, (Elaborated, distributed and approved)
3	SC 2016 / Annual Report	2016	30/12/2016	246 ton (137 > 50ppm y 109,78 < 50ppm)	422 people	National inventory progress of 40%. Galapagos free of PCB	Yes, published in Official Registration 456 from 05/01/16.
4	SC 2017 / Annual Report	2017	15/12/2017	229,98 Ton <50ppm	577 people / inspections to all electricity companies	National inventory progress of 51.5% .2 Guides: Safety and Health, and good environmental practices. 1 National Plan for PCB Management 2018-2025	Completed
	Total IAP			**762 ton**	***2153*** people		
7	PIR 2015	Start 06/15		O ton >50 ppm	402 people	Not reported ((reported based on the preliminary inventory)	Elaborated, sent to be published
8	PIR 2016	07/15 a 06/16		Nothing with more than 50 ppm of PCB has been eliminated	758 people	National Inventory progress of 9,8%. Increase of 400% in analytical capacity. 100% inventory in Galapagos. 16 sites characterized by PCB	Yes, published in Official Registration 456 from 05/01/16
9	PIR 2017	07/16 a 06/17		137 tons with > 50ppm eliminated	434 people	Inventory progress percentage of 45 %	Completed
	PIR Total			**137 with more than 50 ppm de PCB***	***1594*** people		

*In the PIRs the elimination of oil <50 ppm of PCB was not accounted since until the last report, the modification of the elimination objective was not approved to account for the co-processed oil

The evaluator was able to verify that the project has full recognition of the UNDP, of the interested parties and of the governmental and educational institutions; this evaluator did not have evidence of the understanding of civil society or of local communities.

3.3.6 Coordination of the implementation (*) of UNDP and from the partner of implementation and operational issues

The Implementation Agency of the project was the United Nations Development Program (UNDP) and the project was executed within the framework of the national implementation modality with the support of UNDP, following the norms and standard procedures of the organization in the framework of the GEF for the implementation of projects.

The project was implemented at national level through the Ministry of the Environment, with the National Environmental Control Directorate, under the Office of the Undersecretary of Environmental Quality, as the executing unit.

The Steering Committee met on 13 occasions, 4 of them at a distance: 06/11/14, 09/30/14, 01/15/15, 05/25/15, 07/23/15, 15/10/14 15, 11/20/15, 01/19/16, 08/01/16, 12/15/16, 8/2/17, 12/14/17 and 5/29/17. The first meetings are more informative. There was also a technical committee of the project (subcommittee of PCBs), which met once or twice a year and where technical aspects related to the project were sometimes discussed.

During the project (4 years) there was only one coordinator, who maintained continuity considering the governmental changes, and thus minimize the changes that could interfere in the direction and continuity of the methods, processes and activities.

3.4 Project outcomes

This section presents the analysis of the results of the project, based on the aforementioned aspects of planning and execution of the project.

3.4.1 General Outcomes

The overall result of the project was to promote the sound management of oils, equipment, sites, and waste contaminated with PCBs in Ecuador, reinforcing the ESM mainly through training of authorities for surveillance and companies in the electrical sector for handling materials with PCB and the elimination of 750 tons of equipment, oils, and waste contaminated with PCB.

The project obtains a **satisfactory** overall result, mainly by creating the conditions for the elimination of PCBs in the country, through the systematization and documentation of the sound management of PCBs (particularly when advancing in the development of the national inventory), exceeding the amount of co-financing and obtain almost all the results in a satisfactory manner, such as the issuance of a regulation for the management of PCBs, the start of its implementation in companies in the electricity sector, the training of a number of people far superior to that established in the Prodoc and the production of technical guides, with the exception of the tons of PCBs eliminated, with respect to the provisions of the Project Document.

Regarding the establishment of the management system, the origin arises from the planning stage, in which the system does not appear in the general outcomes of the project (its scope is also not clearly defined), so when several results of the activities of the project in the National Management Plan are bring together, there is a base of the system, even though it is not specified in its operative issues to implement it. But even without the full implementation of the Management System, it is considered that the institutional capacities were strengthened.

Two factors are considered that make the difference towards obtaining this positive overall result: the first is the consistency of the coordination of the project and the UNDP Country Office, this made the project to be aligned despite the changes of the environment, the people, and authorities; the second was the decisive participation of the MEER through the ARCONEL (CONELEC originally) to encourage compliance with the regulations.

In a comprehensive manner, the following is considered:

- The National PCB Management Plan is in place;
- There is an advanced inventory of PCBs in the country;
- The concept of the importance of handling PCBs permeated national authorities and electricity companies
- Cofinancing was covered, beyond the goal;
- A critical mass of civil servants and personnel from the electricity companies was trained;
- An existing quantity of PCBs was eliminated during the term of the project;

3.4.2 Relevance

The project was evaluated as Relevant, for the following reasons. As presented in the general results section, the project met the overall objective and provided a first response to an existing, urgent and defined problem in compliance with the Stockholm Convention. This also results from the National Implementation Plan of this convention, which establishes the sound management of PCBs as the first priority and includes the review of the regulations, defining the inventory and its monitoring. This relevance was also confirmed in the opinions of the stakeholders that were interviewed. Finally, it is also relevant from the economic point of view, since as it was expressed by several stakeholders, the project covered an important role when contributing in the development (through the payment) of the inventory.

3.4.3 Effectiveness and efficiency

The effectiveness and efficiency are evaluated with regard to the expected outcomes from the Project Document. And it is determined that the Effectiveness was Very Satisfactory based on the products that are detailed below, while the Efficiency was Satisfactory, mainly due to the following: the project was extended for 7 more months. Regarding the objective of the quantity of PCBs destroyed, efficiency could be considered Satisfactory, when comparing the tons destroyed against the resources of the whole project, however with regard to the objective of promoting the sound management of PCB at national level, the results are efficient, since the strategy was advanced in its establishment at the country level.

- Component 1) Institutional Capacity Strengthening for sound and environmentally friendly management of PCBs

Outcome A. Improved legislation about hazardous chemicals, including PCBs-COPs

The expected products were achieved in a **very satisfactory** manner, since the Ministerial agreement 146 was issued in 2016 and started its application; in the same way the National Plan of Management of PCB until 2025 was elaborated and its application started in 2017

Outcome B. Improved institutional capacity to adequately manage PCBs, including the skills to present proper reports to the Secretariat of the Stockholm Convention
The expected outputs were achieved in a **satisfactory** manner, because while a higher number of inspectors than the target group was trained in PCB management and its application, and that the training in ESM of the PCBs was given to companies of the electric sector, the training manual was not prepared, even though its elements are contained in the National Management Plan Document, the inspections carried out by the Project were carried out in 2014 and in 2017, while in the goals of the Prodoc products were established on a six month basis and they were made by ARCONEL until 2015 and by the MAE the following years; and the inventory was reached up to 50% approximately and incorporated into the monitoring information system.

It is necessary to comment on the way in which the inventory was developed. Through the interviews and evidences, what is found (through chromatographic analysis) presents smaller quantities (approximately 2% with> 50 ppm PCB) to those reported in countries of the region, which varies between 5 and 8%. One of the reasons that could be estimated through the interviews was that electricity companies in recent years do NOT maintain small transformers, but only discard them, thus inadvertently minimizing cross contamination.

Outcome C. Awareness raised amongst the general public and private sector bout the importance of sound management of PCBs
.The expected products were achieved in a **very satisfactory** manner, since the awareness raising activities between the public and private sectors involved in the management of the ESM chemicals of PCB reached a number of more than 2,000 professionals.

- Component 2) ESM of PCBs

Outcome D. Management practices related to PCBs are improved
The expected outputs were achieved **satisfactorily**, based on the fact that although the technical guidelines for PCB management were approved, the National PCB Management Plan (in the process of being implemented) was published as in the National Management Plan for PCBs. PCB establishes Safety and Health at Work measures for personnel exposed to equipment, oil and waste contaminated with PCBs prepared and also in the process of implementation; there were other points not concluded in a similar way. These are feasibility (technical and economic) of alternatives, for the elimination of materials with PCB and the corresponding identification of the processes to be implemented for the elimination of materials and waste with PCB, which were not established so explicitly in it, even when you have a specific section for it. For example, the cost at the country level of the elimination of all existing PCBs is not determined. This is also a consequence of the fact that in the planning process, during the design of the project, these products were not accurately described their scope.

- Component 3) Environmentally sound storage and disposal of PCBs waste

Outcome E. Proper storage of PCB-contaminated oil, equipment and other wastes
The expected outputs were achieved **satisfactorily**, since the Technical Guidelines for PCB temporary storage facilities were designed and included in the National PCB Management Plan; and its application in the electricity sector is in process .

Outcome F. Proper disposal of the currently identified stocks (50%)
The expected products were achieved **satisfactorily**. The products of this outcome have contrasting characteristics. On the one hand, the National PCB Management Plan (a fundamental piece of progress in any country for the consistent elimination of PCBs) was developed and initiated and the elimination of the Galapagos PCBs, a global ecological icon, was successfully carried out. On the other hand, the elimination of 137 tons of PCB (> 50 ppm) does not reach the goal originally set out in the 750 ton Project Document nor does it clearly identify the viable PCB elimination option (it is inferred that on a national scale) for its implementation. In conclusion, it can be said that the positive aspects of compliance far outweigh the unreached.
Additionally, it is necessary to mention that PIR reports establish an elimination of oils with PCB <50 ppm by co-processing in cement kilns, as part of the elimination goal. These projects are focused on the destruction of oils with concentrations> 50 ppm PCB (according to the provisions of the Stockholm Convention Document, Annex A, Part II, subsection "e"). In this regard, it is elaborated in more detail in section 4.1 below.

- Component 4) Monitoring, Learning, Adaptive Feedback and Evaluation

The expected products were achieved in a very satisfactory way. As mentioned before, the PCU in coordination with the UNDP OP and the Steering Committee maintained a permanent and careful follow-up and monitoring, with the corresponding feedback.

3.4.4 National Involvement
The project had a strong national involvement, because the Ministry of the Environment got involved in the subject and in its possible solution; and specially, that companies in the electricity sector, through the interference of ARCONEL, internalized the issue, even though economic resources may not be sufficient. The project certainly contributes to the fulfillment of the commitments with the Stockholm Convention regarding PCBs.

3.4.5 Integration
A general tendency was observed in the country towards compliance with good management and the elimination of PCBs, which will undoubtedly contribute not only the ministerial agreement and the National Management Plan for PCBs, but also the numerous public presentations and interactions with companies that made the project.

3.4.6 Sustainability (*)
Three elements contribute to the potential sustainability of the Project. The first refers to the incorporation of the rational management of PCBs to the regulations through ministerial agreement 146; this by itself should give a boost to the introduction into the mainstream of environmental compliance of the issue. Secondly, to the creation of capacities through training of authorities, inspectors and technical personnel; and the third is through the institutionalization in the electricity companies of the National Management Plan and the signed documents of compliance with it. However, with respect to financial sustainability and socioeconomic aspects, this is not the case, since on the one hand it is known that the Ministries of Environment and Sustainability of many of the countries do not have enough resources to raise awareness and above all to control issues such as these. Therefore, for the consolidation of the efforts made in the long term and that acquires greater sustainability, it is considered that additional international support is still required, given the particular financial conditions of the country, in the sense of creating business models that are applicable and appropriate to the situation.

3.4.7 Impact

At this stage it is not possible to determine the impact of the project results. Only the potential reduction of stress in environmental systems across the country can be estimated, taking as an example the elimination pilot in Galapagos. What is clear is that the country, as a result of this project, is moving towards achieving the objective of the project that is to reduce the exposure of the population and the environment to PCBs, even though during the project a significant quantity has not been eliminated, that according to estimates of the amount existing in the country, the 137 tons eliminated represent approximately 10% of what was established as a baseline in the Project Document. The project did not include any impact indicator in its original document, so that a specific number could not be assigned quantitatively to the evaluation.

4 Conclusions, recommendations and lessons

In conclusion it can be established that the result of the evaluated Project is satisfactory in general, achieving two main results with impact in the medium term, which are the established regulations (Ministerial Agreement 146 and PNG of PCB) and the trend institutionalization towards sound management of PCBs in electricity companies; In addition, the global cofounding contributed was 11% higher than the committed percentage in the Project Document, as a tangible demonstration of institutionalization.

The foregoing could also be seen as an opportunity for the development of an extension and consolidation of results, through a search for international financial support for this, relying on what has been achieved so far.

4.1 Corrective measures for the design, implementation, monitoring and evaluation of the project

The targets planned during the design of this type of projects tend to be oversized, which is a consequence of seeking to attract financial support through greater potential achievements. For example, in this case, total inventory as a goal is difficult to achieve, not only because of the economic resources required, but also because of the time required to do so.

A corrective measure ex post to the project is concerning the size of the national inventory and its percentage correspondence with the actually eliminated quantity, in this case generated during the design phase of the project. In this case, the elimination outcome established was too high, hence the following can be elaborated, based on the experience of this evaluator.

If the total amount of liters of oil in the original inventory document (2003) is considered, which seems to be well-founded, of 20,447,921 liters and a similar percentage is applied to that found in other countries of the region (Mexico, Argentina, Honduras) of 6% contaminated with PCBs> 50 ppm, the total amount of contaminated liquids would be: 1,227 Ton (similar to the one that was somehow established in paragraph 6 of the Prodoc of 1,400 ton), which when projected to equipment (35 % of oils in them) would be 3,680 tons. Of which, if we consider elimination goals similar to those established in other Projects of countries of the region, for example of 8% eliminated (Mexico and Argentina) the goal to be eliminated by Ecuador should have been 294 tons; or if the case of Colombia is considered (with 5%) it should have been 184 Ton. So the amount destroyed by Ecuador of 137 Ton would be closer. Similarly, if the amount found by chromatographic analysis were taken as real, of approximately 2% with> 50 ppm PCB, the amounts when referring to Mexico and Argentina should be 98 Ton or when reference is made to Colombia of 61 Ton. Therefore, the destroyed amount of 137 Ton is considered more reasonable than that established in the 750 Ton Project Document (equivalent to 20% of the total), which was considered to be oversized when designing the project document.

Another ex post corrective measure is the definition of the scope of several of the goals that have been mentioned before, in particular, the scope (dimension) of the inventory and the methodology to be used.

Finally, in the mid-term evaluation, the two previously mentioned measures could have been pointed out by the evaluator or, from there, from the PCU.

4.2 Actions to follow or reinforce the initial benefits of the project.

In order to be able to reinforce, but mainly extend the benefits achieved so far, the following actions are recommended:

- Strengthen the monitoring of compliance with the AM 146 and the National Management Plan by the electricity companies;
- To elaborate, even if it is an estimation, a real feasibility study of the destruction of existing PCBs in the country, in order to be able to contextualize by 2028 the resources required for this and the most appropriate technical path;
- Maintain the critical mass of personnel trained in the project, so that their knowledge and experience permeate even more within the MAE and MEER;

For this, it would be very useful to obtain additional financing to continue with these activities.

4.3 Proposals for future directions that emphasize the main objectives

In specific terms, future directions to achieve the medium and long-term impact objectives of this project are:

- Implement the National PCB Management Plan throughout the country, combining the experience of the places where it has already been carried out, and particularly reinforcing actions towards private owners of electrical equipment;
- Evaluate the possible attainment of additional financial resources, since electricity companies are already public, for the elimination of PCB stocks that will be determined at the end of the inventory;
- Extend the knowledge and experiences acquired towards others of the Persistent Organic Pollutants, so that the impact is replicated in other toxic substances;

4.4 The best and worst practices to address issues related to relevance, performance and success.

The project relevance is not discussed. However, regarding performance and success, the learning from this project, as in many other instances, comes from its non-positive part, in this case during the design and adaptive management stages, regarding lack of precision and/or of rigor in the definition of the scope of the established goals or its rectification at its most appropriate moment.

One of the best practices to highlight is the consistency of the work of the Coordinator (and by inference from the PCU) as well as the area in charge of the UNDP CO, which ensured the achievements obtained.
Another opinion of this evaluator refers in general to the importance of mid-term evaluations of this type of project. The need to do it in time and in the most rigorous way possible will allow projects in general to be redirected on time.

5 Annexures

A) Consulting Terms of Reference Includes Signed Letter of Ethics Code)
B) Itinerary
C) List of interviewed people and Agenda
D) Summary of Field Work
E) List of reviewed documents
F) Matrix of evaluation questions
G) Summary of Preliminary results
H) Recommendations and Management Plan

A) Términos de Referencia de Consultoría (incluye carta Firmada de Código de Ética)

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TERMINAL EVALUATION TERMS OF REFERENCE

Project No.:	00087582
Project Title:	Integrated and Environmentally Sound Management of Polychlorinated Biphenyl (PCB) in Ecuador.
Functional Title:	Consultant for Independent Terminal Evaluation
Contract Type:	Individual Contract
Location:	Quito - Ecuador
Duration:	60 days (over a period of 12 weeks)

INTRODUCTION

In accordance with UNDP and GEF policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference (TOR) set out the expectations for a Terminal Evaluation (TE) of the Project "Integrated and Environmentally Sound PCB Management in Ecuador" (PIMS # 4827).

The essentials of the project to be evaluated are as follows:

PROJECT SUMMARY TABLE

Project Title:	**Integrated and Environmentally Sound Management of PCB in Ecuador**			
GEF Project ID:	87582		**At endorsement (Millon US$)**	**At December 2016 (Millon US s$)**
UNDP Project PIMS ID:	4827	**GEF Financing:**	2,000,000.00	1,375,680.22
Country	Ecuador	**IA / AE own:**	-	-
Region:	Latin America	**Government:**	1,083,105.00	465,016.74
Focal Area:	Climate control, Environment	**Other:**	8,310,844.00	
Operational Program:	United Nations Development Programme	**Total co-financing:**	9,393,949.00	465,016.74

Executing Agency:	Ministry of Environment	**Total Project Cost:**	11,393,949.00	1,840,696.96
Other partners involved:	Ministry of Electricity and Renewable Energy	**Prodoc Signature (date project began):**		Real: May 2014
FA Objectives (OS / SP):	i) Institutional capacity strengthening for sound and environmentally friendly management of PCB. ii) Environmentally sound management of PCB, and iii) Environmentally sound storage and disposal of PCB waste.	**Closing date (operational):**	Proposed: Oct 2017	Real: May 2018

OBJECTIVE AND SCOPE

The long-term goal of the project is to promote the sound management of PCB contaminated oil, equipment, sites and wastes in Ecuador; not only to meet the country's commitment to the Stockholm Convention, but also to minimize the risk of exposure of the population to PCB oil and wastes and possible damages to the environment as a result of PCB presence.

Hence, the Project will contribute to enhancing the integrated and environmentally sound management of PCB in Ecuador by addressing five barriers:

i) Lack of an updated and accurate PCB inventory;

ii) Lack of monitoring, control and enforcement of the legislation;

iii) Lack of a structured long-term plan for capacity building and institutional strengthening;

iv) Lack of physical infrastructure and the environmentally sound management of PCB practices;

v) Lack of a national elimination plan and technical alternatives for the disposal of PCB contaminated equipment and oil.

The project´s policy development and institutional strengthening actions at the systemic level will be complemented with the creation of national regulation for PCBs management, the continuous training of all involved parties, the gathering of information to update the PCB national inventory, elaboration of PCBs Plans such as, National Management Plan and Elimination Plan, the collaboration with the laboratories from National Universities or Institutions to strengthen their capacity to perform gas chromatography for PCB in oil, etc.

The **terminal evaluation** shall be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.

The objectives of the evaluation are to assess the achievement of the project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming. The terminal evaluation will assess the implementation and performance of the project by looking at the potential impact and sustainability of results. This includes contribution to capacity development to achieve effective integrated and environmentally sound management of PCB and the attainment of global and country specific environmental goals.

The evaluation is expected to review the project´s progress with the main stakeholders: Ministry of Environment of Ecuador (MAE), National Agency of Regulation and Control of Electricity (ARCONEL), Electric Distribution Companies (public and private), Industrial Sector, Research Centers and Laboratories.

Additionally, it is considered as a significant opportunity to provide donors, government and project partners with an independent assessment of relevance and achievement of objectives and impact indicators, to determine progress being made towards the achievement of outcomes.

The evaluator will review all relevant sources of information, such as project document, project reports, project budget revisions, midterm review, Progress reports, GEF area of interest tracking tools, project files, national strategic and legal documents, sustainability strategy and any other material that the evaluator considers useful for this analysis, conclusions and recommendations for preparing the project evaluation´s final report.

EVALUATION APPROACH AND METHOD

An overall approach and method[1] for conducting project final evaluations of UNDP supported GEF financed projects has been developed over time. The evaluator is expected to frame the evaluation effort using the criteria of relevance, effectiveness, efficiency, sustainability, and impact, as defined and explained in the **UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported,**

[1] For additional information on methods, see the Handbook on Planning, Monitoring and Evaluation for Development Results, Chapter 7, pg. 163, http://web.undp.org/evaluation/handbook/

GEF-financed Projects. A set of questions covering each of these criteria have been drafted and are included in this TOR (see Annex C). The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the GEF operational focal point, UNDP Country office, project Steering Committee members, project team, UNDP GEF technical Adviser based in the region and key stakeholders. The evaluator is expected to conduct a field mission in Ecuador to chosen sites where the Project has developed activities in coordination with stakeholders. The field visits **may include** the following sites:

City	Site / distance from the project office / means of mobilization	Interviews will be held with the following stakeholders at a minimum
Quito	Warehouse belonging to the Electric Company Quito (EEQ) in Cumbayá / 12 Km / travel by car to the site.	EEQ´s Environmental and Social Director
Guayaquil	Warehouse belonging to the Electric Company Guayaquil (CNEL-Guayaquil) / 405 Km / travel by plane to Guayaquil and by car to the warehouse.	CNEL-Guayaquil Environmental Director
Cuenca	Warehouse in belonging to the Electrical Company of Cuenca and warehouse belonging to company CELEC Hidropaute / 440 Km / travel by plane to Cuenca and by car to the sites	Electrical Company of Cuenca, Environmental Director. And CELEC HIDROPAUTE Environmental Director
Santa Cruz (Galápagos)	Power Plant and warehouse belonging to ELECGALAPAGOS S.A. / > 1000 Km / travel by plane to the islands and by car once in the site	Environmental Responsible from ELECGALAPAGOS.

The evaluator will review all relevant sources of information, such as the project document, project reports - including annual APR/PIR, project budget revisions, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, sustainability strategy and any other materials that the evaluator considers useful for his evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in Annex B of this term of reference.

EVALUATION CRITERIA & RATINGS

An assessment of the project performance will be carried out, based against expectations set out in the Project Logical Framework / Results Framework (Annex A), which provides performance and impact indicator for project implementation along with their corresponding means of verification.

The evaluation will at a minimum cover the criteria of: relevance, effectiveness, efficiency, sustainability and impact. Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in Annex D. And a total/averaged rating obtained from the ratings of the following table must be presented for the project.

Rating Project Performance		
Criteria		Comments
Monitoring and Evaluations: Highly Satisfactory (HS), Satisfactory (S), Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU)		
Overall quality of M&E	(rate 6 pt. scale)	
M&E design at project start up	(rate 6 pt. scale)	
M&E plan implementation	(rate 6 pt. scale)	
IA & EA Execution: Highly Satisfactory (HS), Satisfactory (S), Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU)		
Overall Quality of Project Implementation / Execution	(rate 6 pt. scale)	
Implementing Agency Execution	(rate 6 pt. scale)	
Executing Agency Execution	(rate 6 pt. scale)	
Outcomes: Highly Satisfactory (HS), Satisfactory (S), Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU)		
Overall Quality of Project Outcomes	(rate 6 pt. scale)	
Relevance: relevant (R) or not relevant (NR)	(rate 6 pt. scale)	
Effectiveness	(rate 6 pt. scale)	
Efficiency	(rate 6 pt. scale)	
Sustainability: Likely (L), Moderately Likely (ML), Moderately Unlikely (MU), Unlikely (U)		
Overall likelihood of risks to Sustainability	(rate 6 pt. scale)	
Financial resources	(rate 6 pt. scale)	
Socio-economic	(rate 6 pt. scale)	
Institutional framework and governance	(rate 6 pt. scale)	
Environmental	(rate 6 pt. scale)	
Impact: Significant (S), Minimal (MS), Negligible (N)		
Environmental Status Improvement	(rate 6 pt. scale)	

Environmental Stress Reduction	(rate 6 pt. scale)	
Progress towards stress/status change	(rate 6 pt. scale)	
Overall Project Results	(rate 6 pt. scale)	

PROJECT FINANCE / COFINANCE

The Evaluation will assess the key financial aspects of the project, including the extend of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

Co-financing (type/source)	**UNDP own financing (mill. US$)**		**Government (mill. US$)**		**Partner Agency**		**Total (mill. US $)**	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants								
Loans/Concessions								
- In-kind support								
- Other								
Totals								

MAINSTREAMING

UNDP supported GEF financed projects are key components in UNDP country programming, as well as regional and global programs. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender[2].

IMPACT

The evaluator will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project has demonstrated: a) verifiable improvements in the national capacity to

[2] For this the CO will share the UNDAF, CCA, CPD, Strategic Plan and CPAP.

adequately manage PCBs, b) improvements in the environmentally sound management of PCBs, c) improvements in the environmentally sound storage and disposal of PCB waste.

The Project expects the evaluation to answer some of the following questions:

- Has the project achieved the expected results and products for the final evaluation?
- How is the progress towards each result, product and impact indicator?
- Which factors have contributed or hinder the achievement of the expected results?
- What level of appropriation, support and technical support has provided the executing agency (MAE) for the project´s achievement of results?
- How do the main stakeholders plan to provide sustainability to the project´s results in the future?
- How has the UNDP contribution helped the project´s result achievement?

CONCLUSIONS, RECOMMENDATIONS & LESSONS

The evaluation report must include a chapter providing a set of conclusions, recommendations and lessons.

IMPLEMENTATION ARRANGEMENTS

The main responsibility for managing this evaluation resides with the UNDP CO in Ecuador and the PCB Project Unit. The UNDP CO will contract the evaluator, as per requirement of the Project and the Ministry of Environment. The Project Team will be responsible for liaising with the Evaluator to set up stakeholder interviews, arrange field visits, coordinate with the Government, etc.

The Evaluator will be responsible for all logistics arrangements that his/her field visit could imply. In addition, he/she will present all documents including main report and annexes in Spanish first, once they are approved, the Evaluator will translate them and present them in English.

EVALUATION TIMEFRAME

The total duration of the evaluation will be 60 days according to the following plan, the time that the reference group, composed by the project´s Steering Committee members, takes to review the reports/findings and other documentation is not taken into account in the following table:

Activity	Timing
Preparation	12 days
Evaluation Mission	8 days
Draft Evaluation Report	20 days

Final Report - Spanish version	10 days
Final Report – English version	10 days

EVALUATION DELIVERABLES

The evaluator is expected to deliver the following:

Deliverable	Content	Timing	Responsibilities
Inception Report	Evaluator provides clarifications on timeframe and methodologies	No later than 12 days before the evaluation mission.	Evaluator submits to reference group, composed by the Project´s Steering Committee members.
Presentation	Initial Findings	End of evaluation mission	Evaluator submits to reference group.
Draft Evaluation Report	Full report, (per annexed template) with annexes	Within 20 days of the evaluation mission	Evaluator submits to reference group. Also, to be reviewed by RTA, PCU, GEF OFPs, others
Final Evaluation Report**	Revised report in Spanish	Within 10 days of receiving comments on draft	Evaluator submits to reference group for revision and approval.
Final Evaluation Report*	Revised report in English	Within 10 days of approval of report in Spanish version.	Evaluator submits to reference group for final approval and prior to for uploading to UNDP ERC.

** When submitting the final evaluation report, the evaluator is required also to provide an ´audit trail´, detailing how all received comments have (and have not) been addressed in the final evaluation report.

EVALUATOR EXPERIENCE

The evaluator shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. The evaluator selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

The evaluator must present the following qualifications:

- University degree in environmental sciences, economics, administration or other related fields.
- Minimum 6 years of relevant professional experience evaluating development projects.
- Technical knowledge related to the environmental field.

- Knowledge of UNDP and GEF Principles and Projects, project evaluation experiences within United Nations system and GEF projects will be considered an asset.
- Fluency in reading, speaking and writing in Spanish and English will be necessary.

EVALUATOR ETHICS

Evaluation consultant will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluations'.

PAYMENT MODALITIES AND SPECIFICATIONS

%	Milestone
60%	Payable upon satisfactory completion and approval by reference group, composed by the project's steering committee members, of the Draft Evaluation Report. The costs of in-country mission of the consultant are to be included in this invoice.
40%	Payable upon completion and approval by the reference group, of the Final Evaluation Report, both in Spanish and English version.

EVALUATION CRITERIA

Technical proposals (P11 and technical offer) will weight a maximum of 70% and only the consultants that meet the technical phase with a minimum score of 49/70 or more, will continue to the review of economic proposal, which will weight a maximum of 30%.

The evaluation criteria are the following:

Criteria	Points	Percentage
CVs: • General experience • Specific experience	100	35%
Technical proposal	100	35%
Economic proposal	100	30%
		100%

Rating parameter		Score
Experience.	***General experience:***	
	• University degree in environmental sciences, economics, administration or other related fields.	***20***
	• Minimum 6 years of relevant professional experience evaluating development projects.	***30***
	Specific experience:	
	• Technical knowledge related to the environmental field.	***20***
	• Knowledge of UNDP and GEF Principles and Projects, project evaluation experiences within United Nations system and GEF projects will be considered an asset.	***20***
	• Fluency in reading, speaking and writing Spanish and English will be necessary.	***10***
General criteria (Technical Proposal)	***Methodology, agenda and implementation schedule:***	
	• Understanding the nature of work and understanding the ToRs.	***30***
	• Developed the relevant aspects of the work with a sufficient level of detail.	***20***
	• Development of appropriate conceptual and methodological framework for the work to be performed.	***30***

Rating parameter		Score
	• Appropriate sequence of activities and planning.	20

ANNEX A: PROJECT LOGICAL FRAMEWORK

GOAL	Implement a national environmentally sound PCB management system and the development of environmentally sound storage and viable disposal alternatives for Ecuador´s PCB inventory.			
OBJECTIVE	Promote the sound management of PCB contaminated oil, equipment, sites and waste in Ecuador, according with the Basel and Stockholm Convention.			
RESULTS	1. Institutional capacity strengthening for sound and environmentally friendly management of PCB.	2. Environmentally sound management of PCB.	3. Environmentally sound storage and disposal of PCB waste.	4. Monitoring, learning, adaptive feedback and evaluation.
INDICATORS	1. Number of PCB management regulations developed and validated by regulation institutions. 2. Number of electrical sector companies implementing PCB management and elimination plans to meet national goals by 2020. 3. Number of inspectors trained to conduct site visits for the verification of compliance to the PCB management regulations. 4. Number of inspections completed during project implementation (2013-2017). 5. Number of reports to the Stockholm Convention presented on time and in an effective manner. Number of inventories updated on line with information from the electrical sector companies with PCBs identified and eliminated. 6. Number of publications and activities developed under the awareness raising campaign.	1. Number of electrical sector companies with PCB management plans, developed and presented to the CONELEC/MAE for approval. 2. Number of occupational health and safety trainers to implement guidelines. Number of occupational health and safety guidelines issued and implemented by the electrical companies. 3. Number of alternative PCB disposal options evaluated with a feasibility study. 4. Number of alternative PCB disposal options evaluated with a feasibility study.	1. Number of electrical sector companies with a management plan for the temporary storage of PCB contaminated equipment, oil and waste presented to regulating authorities (CONELEC/MAE) for approval and being implemented. 2. One or a combination of PCB disposal options identified and in tender process for selection of servicers. Number of tons of PCB contaminated equipment; oil and waste are eliminated during the project (2013-2017). 3. Number of tons of PCB contaminated equipment, oil and waste identified in the Galapagos. 4. Number of tons of identified inventory is removed from the Galapagos Island. 5. Number of tons of PCB contaminated equipment, oil and waste eliminated.	1. Number of high quality monitoring and evaluation documents prepared during project implementation.

PRODUCTS (Targets at the end of the Project)				
	1. PCB management regulations and environmentally sound management norms developed and validated. 2. National PCB management and elimination plan up to 2020 approved and in implementation process 3. At least 10 inspectors trained in PCB management evaluation and enforcement in the environmental, electric and health regulating institutions. 4. Inspections made by regulating institutions to each electrical sector company per semester. 5. PCB inventory updated with equipment, oil and waste identified and the amounts of tons that have been eliminated incorporated into monitoring information system. 6. Environmentally sound management of PCB training manual elaborated and implemented with training plan for electrical sector companies. Awareness raising campaign among public and private sectors involved in chemicals management on proper PCB management.	1. Technical guidelines for PCB management approved and in implementation process. 2. Occupational health and safety regulations for personnel exposed to PCB contaminated equipment, oil and waste prepared and in process of implementation. 3. Feasibility studies completed to determine technically and economically viable in-country and out-of-country alternatives for the elimination of PCB contaminated equipment, oil and wastes. 4. Identification of process to be implemented for elimination of PCB contaminated equipment, oils and waste.	1. Technical guidelines for temporary storage facilities for PCB inventories approved and implemented. Environmentally sound temporary storage of PCB contaminated equipment; oil and waste are implemented in the electrical sector companies. 2. Technically and economically viable PCB elimination option identified and in implementation process. National disposal plan developed, approved and electrical sector companies committed to its implementation 3. Pilot project for identification and removal of PCB contaminated equipment, oil and waste from Galapagos developed and implemented. 4. Disposal plan for Galapagos PCB inventory developed approved and budgeted. 5. Disposal of 750 metric tons of the existing PCB inventory of contaminated equipment, oil and waste.	1. Products are: - Monthly Operational Reports submitted to UNDP each year. - Annual APR/PIR submitted to UNDP each year. - Mid-term evaluation. - Final evaluation. MTE and FE must include lessons learned section and a strategy for dissemination of project results.

ANNEX B: LIST OF DOCUMENTS TO BE REVIEWED BY THE EVALUATORS

- Project document (PRODOC) and annexes.
- Project Annual Reports APR/PIR.
- Monthly project´s reports
- National Plan for PCB Management 2018-2025, including the sustainability strategy
- Project budget revisions.
- GEF focal area tracking tools.
- UNDP Focal area tracking tool: UNDP Financial Scorecard
- Mid-Term Evaluation Report.

ANNEX C: SET OF QUESTIONS

Evaluative Criteria	Questions	Indicators	Sources
Relevance: how does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?			
•	•	•	•
•	•	•	•
•	•	•	•
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?			
•	•	•	•
•	•	•	•
Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?			
•	•	•	•
•	•	•	•
•	•	•	•
Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?			
•	•	•	•
•	•	•	•
•	•	•	•
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?			
•	•	•	•
•	•	•	•
•	•	•	•

ANNEX D: RATING SCALES

Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution.	Sustainability ratings:	Relevance ratings
6: High Satisfactory (HS): no shortcomings 5: Satisfactory (S):minor shortcomings 4: Moderately Satisfactory (MS) 3: Moderately Unsatisfactory (MU):significant shortcomings 2: Unsatisfactory (U):major problems 1: Highly Unsatisfactory (HU):severe problems	4: Likely (L): negligible risks to sustainability 3. Moderately Likely (ML): moderate risks 2: Moderately Unlikely (MU): significant risks 1: Unlikely (U):severe risks	2: Relevant (R) 1: Nor relevant (NR) Impact Ratings: 3: Significant (S) 2: Minimal (M) 1: Negligible (N)
Additional ratings where relevant: Not Applicable (N/A) Unable to Assess (U/A)		

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ANNEX E: EVALUATION CONSULTANT CODE OF CONDUCT AND AGREEMENT FORM

Evaluators:

1. Must present information that is complete and fair in its assessment of strengths and weakness so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interest of some stakeholders, evaluators should conduct the evaluation and communicate is purpose and results in a way that clearly respects the stakeholders dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

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Evaluation Consultant Agreement Form[3]

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of consultant: Guillermo Julio Román Hegedi

Name of Consultancy Organization (where relevant): _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at place on date

Signature: _____

ANNEX F: EVALUATION REPORT OUTLINE[4]

I. Opening page:
- Title of UNDP supported GEF financed project
- UNDP and GEF project ID#s.
- Evaluation time frame and date of evaluation report
- Region and countries included in the project
- GEF Operational Program/Strategic Program
- Implementing partner and other project partners
- Evaluation member
- Acknowledgements

II. Executive Summary
- Project Summary Table
- Total/Averaged project rating
- Project Description (brief)
- Evaluation rating table
- Summary of conclusions, recommendations and lessons

III. Acronyms and Abbreviations
(See: UNDP Editorial Manual[5])

1. Introduction
- Purpose of the evaluation
- Scope & Methodology
- Structure of the evaluation report

2. Project description and development context
- Project start and duration
- Problems that the project sought to address
- Immediate and development objectives of the project
- Baseline indicator established
- Main stakeholders
- Expected results

3. Findings
(In addition to a descriptive assessment, all criteria marked with (*) must be rated[6])

3.1. Project Design / Formulation
- Analysis of LFA/Results Framework (Project logic / strategy; Indicators)
- Assumptions and Risks

[4] The Report Length should not exceed 40 pages in total (not including annexes).

[5] UNDP Style Manual, Office of Communications, Partnerships Bureau, updated November 2008

[6] Using a six-point rating scale: 6: Highly Satisfactory, 5: Satisfactory, 4: Marginally Satisfactory, 3: Marginally Unsatisfactory, 2: Unsatisfactory and 1: Highly Unsatisfactory, see section 3.5, page 37 for ratings explanations.

- Lessons from other relevant projects (e.g., same focal area) incorporated into project design
- Planned stakeholders participation
- Replication approach
- UNDP comparative advantage
- Linkages between project and other interventions within the sector
- Management arrangements

3.2. Project Implementation

- Adaptive management (changes to the project design and project outputs during Implementation)
- Partenership arrangements (with relevant stakeholders involved in the country/region)
- Feedback from M&E activities used for adaptive management
- Project Finance
- Monitoring and evaluation: design at entry and Implementation (*)
- UNDP and Implementing Partner implementation / execution (*) coordination, and operational issues

3.3. Project Results

- Overall results (attainment of objectives) (*)
- Relevance (*)
- Effectiveness & Efficiency (*)
- Country ownership
- Mainstreaming
- Sustainability (*)
- Impact

4. Conclusions, Recommendations & Lessons

- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives
- Best and worst practices in addressing issues relating to relevance, performance and success

5. Annexes

- ToR
- Itinerary
- List of persons interviewed
- Summary of field visits
- List of documents reviewed
- Evaluation Question Matrix

- Questionnaire used and summary of results
- Evaluation Consultant Agreement Form

B) Itinerario

Comentarios comité directivo PNUD	Respuesta del consultor
	[1] Había una corrección gramatical del MAE en este párrafo, pero este solamente se transcribe tal cual está en el documento de proyecto
	[2] En comentario de MAE sobre qué significa la "R": significa Relevante
[AJIMR3]: La eliminación no es un tema fácil, si bien la meta es ambiciosa, depende del avance de las empresas eléctricas. [MR4]: No sé si esto es así, en realidad, con la modificación hecha y aprobada, si se está logrando el objetivo y aquí esto no se refleja. Creo que se debería reflejar este hecho y modificar el párrafo siguiente para indicar que, con una segunda fase se podría llegar a eliminar la mayoría de los PCB que están en equipos en operación.	[5] Ver sección 4.1
[AN6]: Al decirse esto, no se está considerando entonces las recomendaciones realizadas por la MTR.	Corregido *Eliminación "con excepción de las toneladas de PCBs eliminadas, con respecto a lo establecido en el Documento de Proyecto".*
[AN7]: Considerando que el COA está en proceso de construcción sugeriría que la recomendación apunte hacia la inclusión de estos instrumentos en la política pública principal que es el COA – Código Orgánico Ambiental.	Integrado *"se recomienda en particular integrar el Acuerdo Ministerial 146 al Código Orgánico Ambiental (COA) y reforzar la vigilancia de su cumplimiento, así como del Plan Nacional de Gestión por las empresas eléctricas…"*
[MR13] No estoy seguro que esto sea lo más adecuado, en realidad la única oportunidad que se presenta para rectificar los objetivos del proyecto, durante la fase de implementación, es en la evaluación de medio término, que es cuando se lo hizo. [AJIMR10] Concuerdo, el manejo de los PCB, es un tema que depende de varios aspectos externos al proyecto, por ello las modificaciones son necesarias. [AN12]: A mí no me parece que queda cubierto, porque a pesar de que se pone que en la MTR se hizo recomendaciones, la valoración sigue siendo negativa, por lo tanto no se está considerando un input sustancial a las recomendaciones del MTR. Sugiero revisar el wording.	Modificado *"…esta carencia fue compensada en su mayor parte por medio del manejo adaptativo a lo largo del proyecto y en particular a partir de la Evaluación de Medio Término".*
[MR14] Revisar la concordancia del índice, en algunos casos no coincide.	[15] Se ajustó al final de todas las correcciones.
[AN18]: ¿De qué fecha?	Corregido *"…el Comité Directivo en su reunión de diciembre de 2016…"*
[AN20]: Ojo que esto no es coincidente con lo aprobado.	Corregido *"La solicitud de la extensión por 5 meses más*

	…"
[AN24]: Ver la redacción, yo solo pondría: el segundo objetivo estaba enfocado en…	[25] Lo traté de enlazar precisamente por eso: el segundo objetivo es una secuencia directa del primero
[AN29]: Sugiero poner un footnote en el que se indique q por la nueva ley CONELEC pasa a ser ARCONEL, pues al final son el mismo actor.	Insertada al pie de página *"[1] Por la Nueva Ley del Régimen del sector eléctrico (2015), el CONELEC se convirtió en la ARCONEL"*
[MR32]: Creo que se debería tomar en cuenta que no existen en el Ecuador, ONGs involucradas en el tema de PCB, esto se debería aclarar. Además, se realizó un arduo trabajo durante 2014-2015 para involucrar a varios centros de investigación (Universidades), se realizó varias reuniones con el SENESCYT (Secretaría Nacional de Educación Superior, Ciencia y Tecnología) con la cual se sacó un llamamiento a las Universidades y Centros de Investigación a presentar propuestas de proyectos en temas de COPs que serían financiadas por SENESCYT, lastimosamente, esta institución se retiró del acuerdo y no revisó ni financió a las tres propuestas de proyectos presentadas por las Universidades (Central (2) y Politécnica del Litoral (1)), también el proyecto, en el marco de esta actividad, visitó y dio charlas a más de 290 estudiantes de Universidades en todo el país, en temas de PCB y COPs, a raíz de esto hemos recibido varias propuestas de realización de tesis de grado, algunas de las cuales hemos apoyado con información y revisiones técnicas. Adicionalmente, tanto el laboratorio del MEER, como el laboratorio del ESPOCH (Universidad Politécnica del Chimborazo), mismos que fueron apoyados ampliamente por el proyecto con insumos, equipos y capacitación y que lograron su "Designación" y "Acreditación", respectivamente, son considerados, los dos, Centros de Investigación. Cuando se hizo el trabajo con los laboratorios se capacitó a 5 labs de diferentes universidades pero solo los dos mencionados anteriormente se interesaron en validar sus métodos. [AN33]: Sugiero que a esto se debería complementar el hecho del modelo de gestión del sector eléctrico, principalmente centralizado en el sector público, que el argumento fundamental para no tener ONGs asociadas en el proceso de manera activa.	Modificado *"Es de notarse que no hubo un involucramiento tan relevante de las ONGs, debido probablemente a que no existen Organizaciones involucradas en este tema en Ecuador, excepto para las capacitaciones, mientras que si existió un fuerte involucramiento de las organizaciones del sector eléctrico, las cuales son las que mayor importancia revisten para el objetivo del proyecto. Estas asimismo, al ser parte del sector público, requieren menos de la participación de ONGs. Respecto a las Instituciones de Educación Superior y de investigación, se realizaron diversas actividades primero a través del SENESCYT y posteriormente en forma directa con las instituciones, logrando que se presentaran propuesta de proyectos de investigación y de tesis de grado, así como la acreditación de dos laboratorios".*
[AN36]: No se menciona las recomendaciones de la MTR como parte del proceso de revisión documental.	Insertado *"…incluyendo en particular el reporte de la Evaluación de Medio Término…"*
[AN40]: Se debería indicar que es en la MTR	Insertado *"y a partir de la evaluación de medio término".*
[AN42]: Poner las siglas en la sección correspondiente.	Se cambió de *NIP* a *Plan Nacional de Implementación de la Convención de*

	Estocolmo (PNI)
[AN45]: Bueno, realmente la conceptualización del PIF y todas las etapas se realiza en coordinación conjunta MAE – PNUD, siempre bajo el liderazgo y directrices del MAE, con el fin último de cubrir las necesidades del país. [AN46]: Se debería especificar que esta priorización es a través de SENPLADES, para que el proyecto tenga una inyección de recursos fiscales, más allá de la donación del GEF.	[44] (Se modificó este párrafo en respuesta al comentario apjm2 del MAE). Hay a este respecto otro comentario de pmja3 del MAE, pero dirigido a la coordinación del proyecto Comentado *"La formulación del Proyecto desde el PIF fue concebida por el Ministerio del Ambiente en conjunto con la oficina de país de PNUD y la oficina regional del PNUD. El Proyecto se determinó como prioritario, como un proyecto de inversión, por la Secretaría Nacional de Planificación y Desarrollo"*
[AN48]: Pero a pesar de esto, sería interesante resaltar la capacidad adaptativa de la unidad de proyecto de definir un alcance y pasos/acciones que respondan a las necesidades del país y q han permitido la institucionalización de la mayoría de acciones iniciadas por el proyecto.	Insertado *"…a partir de esta etapa de diseño, pero que posteriormente la UCP adaptativamente las definiera y el CD las apoyara".*
[AN50]: Sugiero revisar este wording, pues puede ser sujeto de otras interpretaciones. Sugiero poner que no se especificó la temporalidad en la cual se definió las 1400 toneladas, ni la línea de base de la que se partía. COMENTARIO APLICA AL RESUMEN EJECUTIVO AL INICIO. [MR51] No entiendo de donde sale este valor, si es el que está en el inventario preliminar del 2003, el valor correcto es de 1400 ton de aceite contaminado.	Corregido *"La línea base (de 1,400 Ton de líquidos PCB de la cual se partió, como se expresó en el Prodoc) fue tomada de un estudio previo financiado por GEF y ejecutado por PNUMA para el MAE".*
[AN55]: Se debería mencionar acá q esto se debió a la nueva ley del Régimen del Sector Eléctrico que se dio en 2015.	Agregado *"…ya que la nueva Ley del Régimen del Sector Eléctrico se emitió hasta 2015".*
[AN60]: El proyecto tuvo varios acercamientos con sus pares para tomar en cuenta buenas prácticas y lecciones aprendidas, el coordinador podría dar fe a través de comunicaciones de esta afirmación.	Modificado *"Otros proyectos similares, implementados por PNUD en la región, se iniciaron en Brasil, México, Argentina y Honduras, de donde se establece que hubo ventajas por lo que las experiencias se estaban desarrollando en ellos".*
[AN63]: ¿Es la escala de 0.5 aplicable a personas? Favor revisar y ajustar a enteros	[64] Puede haber personas que trabajen medio tiempo
[MR68]: El proceso de solicitud de modificación de la meta de destrucción si fue solicitada a partir de las recomendaciones de la EMT. Tomando en cuenta que el reporte de la EMT es de octubre del 2016, la primera comunicación a la regional del PNUD es del 23 de enero del 2017, siendo que el 15 de diciembre del 2016 se tuvo la reunión del CD y se decidió pedir la modificación en lugar de la reducción de la meta.	Modificado *"…aunque algunas de ellas estrictamente hablando no eran competencia del Proyecto, ni se especificaba con claridad la actividad requerida. Por ejemplo en lo de solicitar la extensión del proyecto se dice "…Considerar una prórroga de dos meses…". A partir de aquellas, el marco de resultados no fue redefinido tan explícitamente, excepto por la solicitud en enero de 2017 de modificar la meta de destrucción, así como la extensión del*

	Proyecto, basada en Acta de CD de diciembre de 2016".
[AN71]: Ser más claro	Aclarado *"Respecto a los potenciales poseedores de equipos contaminados con PCB…"*
[AN73]: Se realizó aunque no al inicio.	Modificado *"…esto fue subsanado posteriormente a lo largo del proyecto, en el envío electrónico del POA multianual".*
[MR77]: Si se tomó en cuenta todas las recomendaciones de la EMT y se realizó un plan gerencial que se envió a Kasper para recibir comentarios, te lo adjunto. Lo que pasa es que muchas de las recomendaciones no tenían una actividad clara a llevar a cabo, sino solamente eran para ser tomadas en cuenta. [AN75]: Se debería argumentar este punto, para que no quede suelto.	Agregado *"La retroalimentación de la Evaluación de Medio Término, fue atendida aun cuando de manera no total, como establecido en la sección 3.2.1 arriba".*
[AN79]: ¿En especie? Especificar	Agregado *"…(en especie) para tratamiento de equipos con PCB".*
[MR84]: Esta columna solamente suma los años del 2014 al 2017, que es lo realmente Ejecutado. Pero, talvez sería bueno ponerle un * y explicarlo al final de la tabla, porque si no parece que al final del proyecto no se logrará ejecutar todo el presupuesto y se alcanzará, solamente un 93% de ejecución total.	Inserción al pie de la tabla *"* Suma desde el año 2014 al 2017 que es lo realmente ejecutado, el año 2018 no se suma porque aún no se ha ejecutado".* Queda además explicado en el párrafo que antecede.
[AN86]: Sería bueno mencionar los reportes mensuales y trimestrales que se entregaban a la CO como parte del M&E de esta última.	Modificado *"...que comprenden de julio de un año hasta junio del año siguiente. Asímismo, como parte del M&E de la Oficina de País, se entregaban reportes mensuales y trimestrales por la UCP…"*
[AN90]: Revisar en función de los comentarios antes realizados en relación a las acciones llevadas a cabo con SENESCYT.	Insertado "*…y educativas; este evaluador no contó con evidencia de la compenetración de la sociedad civil ni de las comunidades locales. "*
[MR100]: Considero que en esto hemos de ponernos de acuerdo porque, es verdad que si consideramos el objetivo inicial, no se ha cumplido; pero si consideramos el objetivo modificado, si lo hemos cumplido y lo hemos sobrepasado.	Modificado *"…y la eliminación de una cantidad razonablemente sustentada de PCBs."*
[AN99]: Nuevamente se está haciendo caso omiso de las recomendaciones de la MTR	[98] Se explica y complementa más adelante, en el 4.1 bajo consideraciones hechas por este Evaluador.
[AN101]: Esto va en contraposición de lo indicado que no cumplió el proyecto, de acuerdo al objetivo inicial, que fue corregido durante la MTR. Pues como se afirma, se eliminó la cantidad existente de PCBs durante la vigencia del proyecto.	Modificado *"Se eliminó una cantidad razonablemente sustentada de PCBs durante la vigencia del proyecto".*

[MR102]: Nuevamente aquí aparece el tema de ponernos de acuerdo en si se cumplió o no con el objetivo de eliminación/destrucción. Yo digo que si se cumplió porque el objetivo fue modificado.	[103] Se explica y complementa más adelante, bajo consideraciones hechas por este Evaluador.
[MR104]: En realidad este Plan es hasta el 2025, que es cuando nuestra normativa dice que debe estar eliminada toda existencia de PCB en aceites dieléctricos.	Corregido *"…hasta 2025…"*
[MR106]: El manual de capacitación está dentro del Plan Nacional de Gestión.	[107] Un manual de capacitación, estrictamente hablando, no consiste solo en el contenido, sino también en la Forma de impartirse. Modificado *"aun cuando sus elementos estén contenidos ampliamente en el Documento del Plan Nacional de Gestión".*
[MR108]: Las inspecciones hechas en el 2014 y 2017 fueron inspecciones hechas directamente por, y con personal del proyecto PCB. Las inspecciones a las que se refieren en el Marco Lógico, que debían ser realizadas por las instituciones de control y que deben ser semestrales, si han sido realizadas, por el ARCONEL (hasta el 2015, mientras tenía la competencia ambiental en el sector eléctrico) y posterior a ello, por el MAE (quien es el que ahora tiene la competencia), esto lo reportamos nosotros en todos los PIRs. Estas dos instituciones de manera semestral y como se marca en la normativa ambiental nacional, revisan/inspeccionan el cumplimiento de los Planes de Manejo Ambiental (incluyendo la gestión de PCB) que está en el Plan de cada empresa. Esta actividad la llevan a cabo las direcciones provinciales del MAE	Modificado *"…las inspecciones realizadas por el Proyecto fueron realizadas en 2014 y en 2017, mientras que en las metas de los productos del Prodoc se establecían por semestre fueron realizadas por ARCONEL hasta 2015 y por el MAE los años siguientes…"*
[MR114]: De acuerdo, pero el cambio fue aprobado y en relación a la meta como quedó luego de su modificación, si se ha cumplido con el objetivo. Tal vez, sea mejor detallarlo así, que se cumplió con el objetivo pero luego de haberlo modificado para que se contabilicen las toneladas de aceite con menos de 50 ppm coprocesadas y que esto no ha sucedido en otros proyectos del mismo tipo.	[113] Ver comentario en sección 4.1
[MR116]: No me suena correcto, es más bien el 10% del total de existencias que se han calculado mediante la últimas proyecciones (1346 toneladas aproximadamente).	Corregido *"…aproximadamente un 10% de lo que se estableció como línea base…"*
[AN118]: Sugiero poner explícitamente vía GEF q es la única fuente disponible para atender estos temas.	Insertado *"…en particular del GEF como uno de los únicos organismos enfocados a financiar…"*
[AN119]: Y en concordancia con la MTR	Modificado "…*y lo cual se alinea con lo mencionado en cierta manera en la Evaluación de Medio Término".*

[MR120]: Me parece muy buena la comparación hecha con otros países, tal vez se podría explicar más la última parte, indicando que es el 2% la tendencia en porcentaje de equipos contaminados que se ha establecido a nivel nacional, basado en un número adecuado de análisis cuantitativos. Como te menciono en el comentario anterior, terminamos ya la proyección que estábamos haciendo en base a los proyectos de muestreo y análisis que hizo el proyecto y los datos del SNIS y tenemos como resultado una posible cantidad total de desechos con PCB de 1346 toneladas. Con este nuevo dato de inventario total, cuando se pone en referencia a México y Argentina sería de 108 Ton y cuando se referencia a Colombia de 68 Ton	[121] Precisé un poco más con respecto a la versión anterior, para mayor claridad; también se respondió así al comentario de MAE.
[MR122]: La primera medida si se revisó, la evaluadora del EMT lo recomendó y la UCP lo discutió con el CD, y se decidió no hacer una reducción sino una modificación del objetivo de destrucción. En lo referente a la segunda medida ex post, tienes razón, eso no se consideró	[123] Por eso son ex post: la evaluadora lo recomendó (reducir la meta pero no precisar el inventario, a partir de lo cual se podría haber hecho) pero no lo sustentó, por lo que la UCP debería haberlo hecho. Por eso la mayoría de las correcciones serían hacia la etapa de diseño.
[AN124]: Sugiero recomendar su apropiada inclusión en el nuevo COA.	Incluido "*Incorporar el AM 146 en el Código Orgánico Ambiental, actualmente en desarrollo, de tal manera de asegurar la consolidación de las acciones hacia la eliminación de PCBs".*
[AN125]: Sería bueno indicar el alcance que se espera tener de este estudio en términos generales, para que pueda ser de fácil aplicación futura	Agregado *"En este estudio se deberán determinar los costos totales de eliminación de los PCBs estimados con el avance del inventario y a partir de este determinar también la mejor opción técnico-económica de eliminación".*

C) Lista de personas entrevistadas y Agenda

Participante	Fecha	Organización/Lugar
Comité Directivo	5 de febrero de 2018	PNUD, Quito
Ing. Ana María Núñez (miembro de comité directivo)	5 de febrero de 2018	PNUD, Quito
Ing. Angela Quishpe (miembro de comité directivo)	5 de febrero de 2018	MAE, Quito
Ing. Alonso Moreno (miembro de comité directivo)	5 de febrero de 2018	MEER, Quito
Dr. César Castro	5 de febrero de 2018	MEER, Quito
Iván Cabezas (ENERGYLINE)	5 de febrero de 2018	Energyline, Quito
Carlos Galván (RS&SISO de CNEL-Corporación)	7 de febrero de 2018	Matriz CNEL, Guayaquil
Mariana Malta	7 de febrero de 2018	HOLCIM, Guayaquil
Carmen Zambrano (CNEL-Guayaquil)	7 de febrero de 2018	Matriz CNEL, Guayaquil
Gustavo Yaselga (Empresa Eléctrica del Norte)	8 de febrero de 2018	N/A

Esta fue la Agenda programada (con personas y sus adscripciones)

Participantes:	
Nuno Queiros	Representante Residente Adjunto del PNUD Ecuador
Mónica Andrade	Especialista de Programa Área de Ambiente y Energía, PNUD Ecuador
Ing. Ana María Núñez (miembro del comité directivo)	Oficial de Programa Oficial de Programa Área de Ambiente y Energía, PNUD Ecuador
Ing. Angela Quishpe (miembro del comité directivo)	Directora Nacional de Control Ambiental (MAE)
Ing. Alonso Moreno (miembro del comité directivo)	Coordinador de Gestión de PCB en el MEER y Presidente del Subcomité Técnico de PCBs
Dr. César Castro	Director del laboratorio de control y aplicaciones nucleares del MEER
Iván Cabezas	Gerente de la empresa de mantenimiento ENERYLINE
Enrique Veloz	Director de Responsabilidad Social, Seguridad Industrial y Salud Ocupacional (RS&SISO) de CNEL-Corporación
Carmen Zambrano	Gerente ambiental de CNEL-Guayaquil
Mayra Villao	Gerente ambiental de CNEL-Santa Elena
Gabriel Topapanta	Gerente ambiental de CNEL-Milagro
Mariana Malta	Coordinadora Ambiental de Geocycle (HOLCIM)
Gustavo Yaselga	Encargado ambiental de la Empresa Eléctrica del Norte
Jorge Jurado	Subsecretario de Calidad Ambiental del MAE
Esteban Falconi / Alfredo López	Asesores del despacho ministerial del MAE
Guillermo Román	Experto para evaluación final del Proyecto PCB Ecuador

Día	Hora	Actividad	Lugar

Lunes 5	08:30 - 09:30	Reunión de arranque con Coordinador del Proyecto PCB	Hotel del experto
	10:00 – 10:30	Presentación del experto al Representante Residente Adjunto del PNUD	PNUD, Quito
	10:45: – 11:30	Reunión de arranque de misión con el comité Directivo del Proyecto PCB, explicación de la agenda y metodología para el desarrollo de la evaluación	PNUD, Quito
	11:45 – 12:30	Entrevista con Especialista de Programa Área de Ambiente y Energía, PNUD Ecuador	PNUD, Quito
	12:45 – 13:45	Entrevista con Oficial de Programa - PNUD Ecuador	PNUD, Quito
	15:00 – 16:00	Entrevista con Directora Nacional de Control Ambiental y equipos técnico de la Dirección, MAE	MAE, Quito
Martes 6	09:00 – 10:00	Entrevista con Coordinador de Gestión de PCB en el MEER	MEER, Quito
	10:30 – 11:30	Entrevista con director del laboratorio de control y aplicaciones nucleares del MEER	MEER, Quito
	12:00 – 13:00	Entrevista con Gerente de la empresa de mantenimiento ENERYLINE	Energyline, Quito
	15:00 – 17:30	Visita a bodega de desechos peligrosos de la Empresa Eléctrica Quito (EEQ) y recorrido para verificar la gestión de desechos con PCB	Cumbaya, Quito
	18:00 – 20:20	Traslado al aeropuerto de Quito y viaje a Guayaquil	N/A
Miércoles 7	09:00 – 10:00	Entrevistas con Coordinadora Ambiental de Geocycle (HOLCIM)	Matriz CNEL, Guayaquil
	10:15 – 11:15	Entrevistas con Director RS&SISO de CNEL Corporación	Matriz CNEL, Guayaquil
	11:30 – 15:00	Entrevistas con Gerentes Ambientales de las diferentes unidades de CNEL	Matriz CNEL, Guayaquil
	15:30 – 20:20	Traslado al aeropuerto de Guayaquil y viaje a Quito	N/A
Jueves 8	09:00 – 11:30	Viaje por tierra a Ibarra para visita a EMELNORTE	N/A
	11:30-13:30	Visita a la bodega de desechos peligrosos de la empresa y recorrido para verificar la gestión de desechos con PCB	EMELNORTE, Ibarra

	14:30 – 15:30	Entrevista con Gustavo Yaselga, encargado ambiental de EMELNORTE	EMELNORTE, Ibarra
	16:00 – 18:00	Retorno a Quito	N/A
Viernes 9	09:30 – 11:30	Reunión en despacho ministerial con Esteban Falconí - Asesor Jurídico de Despacho, Alfredo López - Asesor en Biodiversidad y con equipo consultor que se encuentra elaborando la normativa secundaria del nuevo Código Orgánico Ambiental. Tema proyecto de plásticos.	MAE, Quito
	15:00 – 16:00	Reunión de cierre de misión con el comité Directivo del Proyecto PCB, presentación de los principales hallazgos	MAE, Quito

Siglas / Actor	Descripción	Dirección
Proyecto PCB Ecuador	N/A	Edificio Torre Alba, Piso 4, Oficina 407. Av. Amazonas N26-179 y la Niña, Quito - Ecuador
PNUD	Programa de Naciones Unidas para el Desarrollo	Centro Corporativo EkoPark, Torre 4, piso 3. Vía Nayón s/n y Av. Simón Bolívar Quito - Ecuador
MAE	Ministerio del Ambiente	Av. Madrid 1159 y Andalucía. Quito - Ecuador
SCA	Subsecretaría de Calidad Ambiental	Av. Madrid 1159 y Andalucía. Quito - Ecuador
DNCA	Dirección Nacional de Control Ambiental	Av. Madrid 1159 y Andalucía. Quito - Ecuador
MEER	Ministerio de Electricidad y Energía Renovable	José Tamayo E-1025 y Lizardo García (Esquina). Quito – Ecuador
CNEL-Matriz	Corporación Nacional Eléctrica	Av. Del Bombero km 6 1/2 Vía a la Costa Edif. Grace. Guayaquil – Ecuador
EMELNORTE	Empresa Eléctrica del Norte	Juan Manuel Grijalva 654 entre Simón Bolívar y José Joaquín de Olmedo. Ibarra - Ecuador
EEQ	Empresa Eléctrica de Quito	Cumbayá. Quito - Ecuador

D) Resumen de visitas de campo

Se llevaron a cabo diversas reuniones del 5 al 7 de febrero del 2018 en Quito, Guayaquil e Ibarra, con el Comité Directivo del PNUD Ecuador, directivos del Ministerio de Electricidad y Energía Renovable (MEER), representantes de empresas como ENERYLINE, HOLCIM, Empresa Eléctrica del Norte, así como de la Corporación Nacional de Electricidad (CNEL) en Guayaquil.

E) Lista de documentos revisados

Información del proyecto

2015.06.25. ACTA SUBCOMITE TECNICO PCBS EN LOJA.pdf
2016.07.27. ACTA SUBCOMITE TECNICO PCBS EN RIOBAMBA.pdf
ACTA No. 01-2017 REUNIÓN COMITÉ TECNICO PCBs GUAYAQUIL.pdf
ActasComite.zip
cofinanciamiento.zip
Copia de POA PCB Multianual.xlsx
ELECGALAPAGOS Rubros de Cofinanciamiento PCB`s-MAE.pdf
Fwd%3a_PLanes_de_acción.zip
Informe mensual Diciembre 2016.pdf
Informe Trimestral PCB Enero -Marzo2017.pdf
Informe Trimestral PCB Oct -Dic 2017.pdf
INVENTARIO PCBs Ecuador-2003.pdf
MTE Plan Gerencial-PCB_FINAL 2.12.2016 KK comments.xlsx
PNA PCB-Ecuador2009 (1).pdf
POA PCB Multianual.xlsx
POA PNUD Rev. Presupuestaria C-2014.xlsx
POA PNUD Rev. Presupuestaria E-2015.xlsx
POA PNUD Rev. Presupuestaria G-2016.xlsx
POA PNUD Rev. Presupuestaria I-2017.xlsx
Primera solicitud de cambio de meta de destrucci¢n.docx
PRODOC PCBS Español.pdf
Prodoc&Informes&PIRs
Revisiones Presupuestarias A (2014) - G (2016).pdf

Prodoc, Informes y PIRs

04-13-2012 ID4741-Project Preparation Grant.pdf
12-16-2011 ID4741 Project Review by GEF.pdf
12-17-2013 ID4741 CEO Endorsement.pdf
2017-PIR-PIMS4827-GEFID4741.pdf
EMT-Proyecto PCB Ecuador-FINAL.pdf
Informe mensual Diciembre 2016.pdf
Informe Trimestral PCB Abril -Junio 2017 (2).pdf
Informe Trimestral PCB Abril -Junio 2017.pdf
Informe Trimestral PCB Enero -Marzo2017.pdf
Informe Trimestral PCB Julio -Sept 2017 (2).pdf
Informe Trimestral PCB Julio -Sept 2017.pdf
Informe Trimestral PCB Oct -Dic 2017.pdf
PIR 2016 PCB Project-GEFID-PIMS4827.pdf
PIR-2015-GEFID-PIMS4827.pdf
Plan Nacional de Gestión de PCB 2018-2025.pdf
PRODOC PCBS Español.pdf
PRODOC PCBs ingles-Firmado.pdf
Project Identification Form GEF-04-03-2012 ID4741 rev PIF.pdf
Revisiones Presupuestarias A (2014) - G (2016).pdf
Revisiones Presupuestarias H (2017).pdf

Revisiones Presupuestarias I (2017).pdf

Actas Comité
1Presentación CD 15-10-2015.pptx
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Acta CD 11-06-2014 Inicial PCB.pdf
Acta CD 15-01-2015 scan.pdf
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Copia de UGP - Cofinanciamiento U. negocio y Emp Elec CNEL EP.pdf
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Planes de acción
ARCONEL_ESCOGIDO-01.jpg
Dic 2012-presentación planes de acción PCB.pdf
Oficio del 2018 de ARCONEL solicitando presentación de planes actualizados.pdf
Oficio Min de Electricidad indicando que planes de acción 2017-2020 son obligatorios.pdf
Planes de acción 2016-2020 aprobados por ARCONEL.pdf

F) Matriz de preguntas de evaluación

Relevancia La medida en la que una actividad se adapta a las prioridades de desarrollo local y nacional y a las políticas organizativas, incluidos los cambios a lo largo del tiempo. La medida en la que el proyecto está de acuerdo con los programas operativos del FMAM o con las prioridades estratégicas sobre las que se financió el proyecto. Nota: En retrospectiva, la cuestión de la relevancia a menudo se convierte en una pregunta sobre si los objetivos de una intervención o su diseño son aún adecuados dados los cambios en las circunstancias. ¿Cómo se localiza el proyecto en las prioridades del país y de las provincias?

Está el proyecto alineado con las prioridades de PNUD Ecuador y FMAM.

¿Qué tan importante es el proyecto para el país/las provincias? PNI? Planes Nacionales de Desarrollo/Ambientales

¿Qué tan importante es el proyecto para los beneficiarios directos? ¿Empresas eléctricas, de servicios, poseedores de equipos?

¿Cómo participaron los beneficiarios directos en el diseño e implementación del proyecto?

¿Cuál sería el aporte adicional del proyecto a las actividades de eliminación de PCB en las provincias, especialmente en los proyectos piloto?

¿En qué medida se cumplieron los objetivos del proyecto, tanto nacional como provincial?

Efectividad: La medida en la que se alcanzó un objetivo o la probabilidad de que se logre.

¿Cuánto aumento de control de PCB por parte autoridades locales y nacionales se logró?

Se estableció un sistema de gestión unificado/armonizado involucrando a las autoridades y actores relevantes, tanto a nivel nacional como provincial?

¿Se logró establecer de manera efectiva el almacenamiento y tratamiento de PCB?

¿Que tanto se logró la introducción de nueva normativa para facilitar la eliminación de PCB a nivel nacional y provincial?

¿Los Planes de trabajo anuales estuvieron en línea con recursos y objetivos del proyecto? ¿Se elaboraban y aprobaban por comité directivo?

¿Cuáles fueron los ajustes realizados para enfrentar distintas situaciones?

Eficiencia: ¿El proyecto se implementó de manera eficiente en conformidad con las normas y los estándares internacionales y nacionales?

¿Se implementó un sistema de monitoreo y evaluación de actividades?

¿Se realizaron las actividades, productos y resultados de acuerdo con lo planificado?

Se logró reunir recursos de contrapartida y/o adicionales para los objetivos del proyecto?

¿Qué tan eficiente fue la aplicación de recursos? ¿Costo-beneficio?

Resultados: Los cambios positivos y negativos, previstos e imprevistos y los efectos producidos por una intervención de desarrollo. En términos del FMAM, los resultados incluyen el rendimiento directo del proyecto, de corto a mediano plazo, y el impacto a mayor plazo que incluye beneficios del medio ambiente mundial, efectos de repetición y otros efectos locales.

¿Cuánto influyó el proyecto en las actividades de eliminación de PCB en provincias y a nivel nacional?

¿Se cuenta con inventarios más fidedignos? ¿Qué cantidad? ¿Distribución? ¿Certeza?

Se estableció el sistema de gestión unificado/armonizado para eliminar los PCB? En cuantas provincias/población/equipos?

¿Existe una tendencia (mainstreaming) de actividades de eliminación de PCB a nivel provincial y nacional, gracias a las actividades del proyecto?

Sostenibilidad: La capacidad probable de que una intervención continúe brindando beneficios durante un período después de su finalización. El proyecto debe ser sostenible tanto ambientalmente, como financiera y socialmente.

¿Con la legislación y coordinación con las empresas eléctricas será suficiente para poder continuar la tendencia de destrucción después que el proyecto finalice?

¿Con las autoridades/inspectores capacitados será suficiente para poder continuar la tendencia de destrucción después que el proyecto finalice?

¿Las autoridades y actores relevantes a nivel nacional y de empresas eléctricas tendrán la suficiente formación para continuar con el sistema de gestión y eliminación de PCB?

¿Cuáles factores políticos o económico podrían impedir la formulación de planes y políticas para eliminación de PCB en el país, una vez concluido el proyecto?

¿Están las autoridades y actores nacionales comprometidos con la eliminación de BPCs a mediano y largo plazo?

G) Resumen de resultados preliminares

EVALUACIÓN FINAL

Conclusiones Preliminares

Diseño del Proyecto

- Proyecto de relevancia nacional en su diseño;
- Faltó calendarización (cronograma) de actividades
- Faltó definir alcance (precisión) de implementación/desarrollo de plan nacional de gestión, de estudio de factibilidad y de inventario.
- Meta de destrucción (750 Ton) sobreestimada desde línea base

Objetivos y Resultados

- Meta de eliminación modificada; se sustentará además de por lo ya emitido desde la Oficina Regional, en las metas de eliminación de otros países (proporcionalmente al universo)
- Cofinanciamiento establecido cubierto; falta documentar;
- Inventario adelantado, establecido ya en normatividad.
- Estrategia nacional por reforzarse.
- Aprendizaje logrado por proyecto y en autoridades; deberá hacer esfuerzo por mantenerse.
- Reforzamiento del sector eléctrico es necesario, aspecto de personal

Ejecución y Gestión

- Desempeño sobresaliente de equipo de trabajo de proyecto: comprometido y proactivo;
- Faltó precisar, en su momento resultados y objetivos;
- Proyecto extendido por oficina Regional de PNUD hasta mayo de 2018;
- Avance consistente de la ejecución a lo largo del periodo
- Apoyo muy evidente de oficina de PNUD de país

Monitoreo y Evaluación

- Aun por terminar revisar Planes operativos Anuales: y Tracking Tools;
- Se requeriría mayor comunicación/difusión de resultados;
- Excelente seguimiento por OP

Administración y Finanzas

- Ejercicio completo de recursos;
- Relación costo-eficacia de proyecto, recursos invertidos versus resultados alcanzados, adecuada al final del proyecto

H) Recomendaciones y Plan de Manejo

Recomendación	Acciones a Tomar	Resp.	Temporalidad
Una medida correctiva *ex post* al proyecto es respecto al tamaño del inventario nacional y su correspondencia porcentual con la cantidad eliminada realmente	• Calcular con mayor detalle el inventario real basado en la proyección del actual; • Determinar meta razonable de eliminación basado en comparación con otros países de la región	UCP	Antes de concluir proyecto
la definición del alcance de varias de las metas que han sido mencionadas antes, en particular, la del alcance (dimensión) del inventario y de la metodología a usarse	• Definir el alcance del inventario como un total del universo; • Definir alcance de "estudio de factibilidad" para hacer una primera estimación de costo de eliminación de todos los PCBs del ´país;	UCP MAE	Antes de concluir proyecto
Incorporar el AM 146 en el Código Orgánico Ambiental (para garantizar la institucionalización)	• Elaborar documento sustentado para incorporar AM146; • Hacer la solicitud formal de incorporación; • Incorporar AM146 en COA;	UCP OP MAE	Antes que concluya el proceso de elaboración del COA
Reforzar la vigilancia del cumplimiento del AM 146 y del Plan Nacional de Gestión por las empresas eléctricas	• Implementar sistema de seguimiento de cumplimiento del AM146; • Elaborar e Implementar sistema de monitoreo del Plan Nacional de Gestion;	MAE & ARCONEL	En una etapa subsecuente del proyecto
Elaborar, aun cuando fuera de forma estimativa, un estudio de factibilidad real de destrucción de los PCB existentes en el país, para poder contextualizar hacia 2028 los recursos requeridos para ello y las vías técnicas más adecuadas	• Elaborar estudio de factibilidad basado en costos presentes de eliminación; • Determinar vías técnicas más adecuadas de eliminación; • Estimar recursos requeridos, su gradual consecución y las fuentes potenciales de financiamiento.	UCP	Antes de concluir proyecto
Mantener la masa crítica de personal formado dentro del proyecto, para que sus conocimientos y experiencia permeen aún más hacia dentro del MAE y MEER	• Contratar al menos a dos personas clave del personal capacitado y experimentado del proyecto;	MAE/MEER	Al termino del proyecto
Implementar el Plan Nacional de Gestión de PCB en todo el país, conjuntando la experiencia de las partes donde ya se efectuó, y particularmente reforzando acciones hacia los propietarios privados de equipos eléctricos	• Determinar propietarios privados de equipos contaminados, a partir del inventario; • Vigilar el cumplimiento del Plan Nacional de Gestión por ellos; • Reforzar vigilancia de cumplimiento de PNG por las empresas eléctricas;	UCP MAE/ARCONEL MAE/ARCONEL	Antes de concluir Proyecto En una etapa subsecuente del proyecto

Evaluar la posible consecución de recursos financieros adicionales, ya que las empresas eléctricas son ya en su mayoría públicas, para la eliminación de las existencias de PCB que se determinen al finalizar el inventario	• Con base en el estudio de factibilidad y el costo estimado de eliminación total, diseñar sistema de financiamiento para empresas públicas y privadas;	UCP	En una etapa subsecuente del proyecto
Extender los conocimientos y experiencias adquiridas hacia otros de los Compuestos Orgánicos Persistentes, para que el impacto sea replicado en otras de las substancias tóxicas	• Priorizar las substancias a las que se aplicaría el esquema desarrollado para PCBs • Adecuar el sistema a una mayor amplitud de espectro	UCP	En una etapa subsecuente del proyecto