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Introduction of an environmentally sound management and disposal system for PCB wastes and PCB decontaminated equipment

Office of Evaluation and Internal Oversight

OFFICE OF EVALUATION AND INTERNAL OVERSIGHT
INDEPENDENT EVALUATION UNIT

Independent Evaluation of Introduction of an environmentally sound management and disposal system for PCB wastes and PCB-contaminated Equipment

UNIDO Project ID 130249
GEF Project ID 4446

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Abstract

The project "Introduction of an environmentally sound management and disposal system for PCB wastes and PCB-contaminated equipment" was implemented from October 2013 to September 2023 by UNIDO in collaboration with the Ministry of Environment and Forestry of Indonesia. The project was funded by the Global Environment Facility (GEF) with a budget of $6.0 million.

The main objectives of the project were to establish a PCB management system to reduce or eliminate releases from PCB waste stockpiles and PCB-containing equipment, and to dispose of at least 3,000 tons of PCB wastes and equipment in an environmentally sound manner. The project also aimed to maximize opportunities for public-private partnerships.

The evaluation concluded that the project was highly relevant as it helped Indonesia fulfill its obligations under the Stockholm Convention to identify and eliminate all PCBs in the country by 2028. The project effectively strengthened the policy and regulatory framework for PCB management, with the developed ministerial regulations on PCBs being adopted and enforced by the government. The project also enhanced the capacities of stakeholders and conducted PCB inventories.

Overall, the project made significant progress in improving PCB management in Indonesia, but certain challenges and recommendations were identified to further enhance its impact and sustainability.

Recommendations of the evaluation are referring to the replication and scaling up of the project, financial support for small PCB owners, ensuring reporting and reasonable treatment costs and finally a regular update of the project`s website.

Key lessons learned include the need for enforcement and incentive mechanisms to encourage PCB owners to dispose of their equipment properly, as well as the importance of selecting the right entity to operate treatment facilities based on specific criteria.

Contents

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Abbreviations and Acronyms

Abbreviation	Meaning
BRS	Basel Rotterdam and Stockholm Conventions
CEO	Chief Executing Officer
DG	Director General
EIDIS	Environmental and Infrastructure Damage Insurance Scheme
ESM	Environmentally Sound Management
GEF	Global Environment Facility
GoI	Government of Indonesia
IEF	Indonesia Environment Fund
ISIS	Inclusive and Sustainable Industrial Development
M&E	Monitoring and evaluation
MOEF	Ministry of Environment and Forestry
MR	Ministerial Regulation
MTE	Midterm Evaluation
NEA	National Executing Agency
NGO	Non-governmental Organization
NIP	National Implementation Plan
NPC	National Project Coordinator
NPD	National Project Director
NPM	National Project Manager
NTA	National Technical Advisor
OE	Operating Entity
PCBs	Polychlorinated Biphenyls
PIR	Project Implementation Review
PLN	Perusahaan Listrik Negara
PM	Project Manager
POPs	Persistent Organic Pollutants
PPLI	Prasadha Pamunah Limbah Industri
PMU	Project Management Unit
RBM	Results-based Management
TE	Terminal Evaluation
TOC	Theory of Change
TWG	Technical Working Group
UNIDO	United Nations Industrial Development Organization

Executive Summary

The full-size project "*Introduction of an environmentally sound management and disposal system for PCB wastes and PCB-contaminated equipment*", funded for an amount of $ 6.0 M by the Global Environment Facility, was implemented from 10 October 2013 to 30 September 2023 by the United Nations Industrial Development Organization. The main national counterpart was the Ministry of Environment and Forestry of Indonesia.

The main objectives of the project were to introduce and implement a PCB management system to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment, and to dispose of at least 3,000 tons of PCB wastes and PCB-containing equipment in an environmentally sound manner maximizing opportunities for public-private partnership.
The evaluation covered the whole duration of the project.

The in-depth evaluation included: a review of project documents; country visit; and, using a participatory approach, interviews with project personnel, intended beneficiaries, project partners, and other stakeholders involved in the project. The evaluation also remotely interviewed some key project partners using available apps.

Key Findings

Based on the information available and the findings of the discussions held, the evaluation made the following conclusions

Relevance: The project is highly relevant as it is assisting Indonesia, party to the Stockholm Convention, to fulfill its obligations to identify and eliminate all PCBs in the country by 2028. The project is aligned with GEF strategic priorities in chemical ad wastes focal area and with UNIDO`s priorities and mandates.

Effectiveness: Most of the stated project objectives have been achieved. The project has successfully strengthened the policy and regulatory framework for the environmentally sound management of PCBs. The ministerial regulations on PCBs that the project developed have been adopted by the Government of Indonesia, and are already being enforced. Capacities of the relevant stakeholders, institutions, and partners for the identification, sound management, and disposal of PCBs have been completed. Two PCB inventories were carried out in 2015 and 2021 respectively, covering the two main islands Java and Sumatra. Of the 4,524 transformers that were sampled and tested, 396 were found to contain PCB at levels higher than 50 ppm with the majority of the contamination being considered low contaminated (below 5000 ppm). This guided the project to opt for a non-combustion technology for the treatment of these low PCB-contaminated equipment. Due to challenges, the target of treating 3000 tons of PCB-contaminated equipment was not achieved. Only 200 tons were treated.

Efficiency: The project duration was originally designed for five years, but due to delays it was extended by five years. The delays were mainly due to a slow start, the merging of the Ministries of Environment and Forestry, the procurement of the non-combustion technology, and the Covid19 pandemic. Despite these delays, thanks to the dedication of the project management team, the project succeeded in the delivery of all outputs within

the planned budget. The amount of co-financing that materialized, three fold the amount pledged at design, contributed to cost-effectivess.

Sustainability: As no risks that may jeopardize the project benefits have been identified, the sustainability of project results is considered likely. Furthermore, the Phase 2 project that is being developed and the PIF already submitted to the GEF for approval, is aiming to consolidate the project results. In particular, it is designed to ensure better enforcement of the ministerial regulations on PCB management and strengthen PCB management regulation, including the possibility of introducing administrative and financial sanctions. It will also develop a set of robust financing mechanisms, encompassing both facilitating payments for PCB disposal services and mobilizing funds, which aims at supporting the environmentally sound disposal or treatment of PCB-contaminated transformers.

Coherence: After several discussions held with the technical staff and higher officials of PLN, the Ministry of Environment and Forestry (MOEF) succeeded in getting the engagement of PLN, which committed a very significant amount of co-financng, more than $ 17 million, to the project. MOEF also succeeded to generate strong support from private PCB owners which have allocated funds and resources to support the objectives of the project. Therefore the rating on Coherence is Highly Satisfactory.

Progress to impact: There are good evidence that both Long term Outcomes 1 and 2 are emerging in the country. The challenge would be for the small PCB owners as many do not have the financial resources to phase out and soundly eliminate their contaminated equipment. The Phase 2 PCB project is timely as it is planning to develop a set of robust financing mechanisms, which aim at supporting the sound disposal or treatment of PCB-contaminated transformers, which the small owners and others could benefit from. Althoug too early to assess, the Long term Outcome 3, which is closely linked to Long term Outcome 2, is also emerging. Based on the findings discussed above and provided the approval and implementation of the Phase 2 project, the long term impact to eliminate all PCBs by 2028 is considered Likely.

Overall assessment and project rating

	Evaluation criteria	Rating
A	**Impact (progress toward impact)**	**L**
B	**Project performance**	**HS**
1	• Relevance	HS
2	• Coherence	HS
3	• Effectiveness	S
4	• Efficiency	S
5	• Sustainability of benefits	L
C	**Cross-cutting performance criteria**	**S**
1	• Gender mainstreaming	S
2	• Results- based management	S
3	• Monitoring and reporting	S
D	**Performance of partners**	HS
1	• UNIDO	HS
2	• National counterparts	HS
3	• Private partners	HS
4	• Donor	S
F	**Overall assessment**	S

Key Recommendations

Recommendation 1: The project activities such as the inventories were carried out mainly in the two islands Java and Sumatra. Given that a Phase 2 project is being developed, it is recommended to replicate and scale up the project results to cover all the regions across the country. The capacity building for the ESM of PCBs until final disposal and awareness raising activities should be replicated in all other regions across the country to outreach the relevant stakeholders including PCB owners, provincial officers, and the civil society.

Recommendation 2: The incentive mechanisms developed by the project were not adopted by the government. The authorities rather rely on the provisions stipulated under MR P29/2020 for PCB owners to carry out the identification of PCB-contaminated equipment and pay for their final sound disposal. While the big companies have the necessary financial resources undertake these activities, the smaller ones may not have such capacities. It is recommended that the national authorities put in place a financial mechanism to support these small owners and others, which may require such assistance.

Recommendation 3: It was reported that the PCB owners were very slow to identify and send their contaminated equipment for treatment. While the reasons are not known, it is however recommended that authorities put in place a strategy to ensure that PCB owners report on their equipment and have the contaminated ones treated. Furthermore, it is recommended that the treatment cost should be reasonable, it should be lower than the rate proposed for exportation and disposal abroad.

Recommendation 4: The project created a website to promote and share the project results and lessons. However, the evaluation could not access the website. The relevant authorities should take actions to reactivate the website and ensure its management, maintenance and update on a regular basis.

Key Lessons

Lesson Learned 1 – The project successfully developed ministerial regulations for the ESM of PCBs, MR No. P29/2020, which the government adopted in December 2020. Relying on the provisions stipulated in these regulatios is not sufficient and deterring enough for owners to identify and dispose of their PCBs voluntarily. It was observed the slow pace at which the PCB owners send their contaminated equipment for treatment. The regulations should be enforced and incentive mechanisms should be proposed to encourage and ensure that PCB-contaminated are soundly disposed of.

Lesson Learned 2 – Based on the lessons learned during a previously implemented PCB project, UNIDO in consultation with the national counterparts came up with a set of criteria that contributed to select the right candidate to be the operating entity of the treatment facility.

1. Introduction

1.1 Evaluation Purpose

1. The purpose of the terminal evaluation (TE) as set out in the 2021 UNIDO Evaluation Policy are: i) to promote accountability; ii) to support results-based management (RBM); and iii) to drive learning and innovation. The TE would, inter alia, provide UNIDO management and stakeholders with valuable information, and contribute to improved policymaking based on evidence-based decision-making.

1.2 Evaluation Objectives and Scope

2. The main objective of the TE was to assess the project's performance based on the criteria of relevance, effectiveness, efficiency, sustainability, and impact. To assess the aforementioned evaluation criteria, the evaluation team particularly looked into the following:
   (i) Has the project done the right things in the context of PCB issues in the country? How well has the project fit with other policies and interventions that affect PCBs in the respective countries?
   (ii) What are the projects` key results (outputs, outcome, and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent are the achieved results to be sustained after the completion of the project?
   (iii) What are the key drivers and barriers to achieving the long-term objectives? To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers, and contribute to the long-term objectives?
   (iv) What are the key risks (e.g. in terms of financial, socio-political, institutional, and environmental risks), and how these risks may affect the continuation of results after the project ends?
   (v) What lessons can be drawn from the successful and unsuccessful practices in designing, implementing, and managing the project?
   (vi) How far have the recommendations of the midterm evaluation (MTE) been used to ensure the success of the project in the second phase of implementation?
   (vii) Were lessons learned from previous projects in the country and the POPs thematic area sufficiently taken into account while designing the project?
   (viii) Was the gender dimension given sufficient attention in both project design and implementation?

3. In addition to the above, the evaluation team has developed a more focused set of questions as well as key indicators and data sources that cover all these aforementioned criteria, which are summarized in the evaluation matrix (Annex 2). The TE covered the whole duration of the project from its starting date in October 2013 to the estimated completion date in September 2023.

1.3 Theory of Change

4. The project was formulated based on a logical framework approach that included well-described outcomes, the corresponding outputs and activities, verifiable indicators and sources of verification, as well as assumptions. The causal pathways

from the proposed outputs through outcomes to impact can be easily identified. As a GEF-5 project, providing a theory of change (TOC), which is a methodology or a management tool that depicts the process of change by highlighting the causal linkages in the initiative (the short-term and long-term outcomes), was not a requirement. Based on the project documentation, the evaluation team developed a TOC (Figure 1), which shows how the project is expected to contribute to bringing about changes in Indonesia to achieve impact. To start, the necessary precondition is that the project needs to produce the seven planned outputs that would contribute to achieving the four project outcomes. It is anticipated that once the legislation on PCBs has been strengthened, the relevant authorities will take actions for its enforcement to ensure full compliance of PCB owners, and that they are also implementing the PCB phase-out and disposal plan (Long term Outcome 1). This would trigger Long term Outcome 2, whereby the PCB owners would engage in establishing ESM systems for the identification and sound management of PCBs at their facilities. Finally, with the assistance and support of the relevant authorities, and benefiting from the incentive mechanism, it is foreseen that by 2028, the PCB owners will have soundly disposed of all their PCBs (Long Term Outcome 3), and hence would reduce risk exposure of humans and the environment to the harmful effects of PCBs (Impact statement).

5. Six key assumptions have been identified to trigger the TOC. These are: 1. The Government of Indonesia (GoI) committed to timely adopting regulatory tools that will obligate stakeholders to soundly manage PCB; 2. A sufficient number of governmental officers willing to attend the training; 3. PCB owners willing to participate in the project, and the operating entity operating in accordance with the codes of practice; 4. Identified target stakeholders willing to participate in raising awareness activities; 5. Relevant officers enforcing legislation and policies on PCBs; and 6. PCB owners have the financial resources and benefit from the incentive mechanism to soundly dispose of their PCBs contaminated equipment and wastes. Assumptions 5 and 6 are linked to the the Long Term Outcomes, the evaluation team will therefore seek evidence of whether these two assumptions are proving to hold during the information-gathering phase. As depicted in Figure 1, four important enablers have also been identified and they are related to the support that the project should provide to achieve the four project outcomes.

1.4 Methodology

6. The TE was conducted in accordance with the UNIDO Evaluation Policy,[1] the UNIDO Guidelines for the Technical Cooperation Program and Project Cycle,[2] and the UNIDO Evaluation Manual[3]. In addition, the GEF Monitoring and Evaluation Policy,[4] and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies[5] was also applied.

7. The TE used a participatory approach whereby key stakeholders were kept informed and consulted throughout the review process. Both quantitative and qualitative

[1] UNIDO (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1).

[2] UNIDO (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006).

[3] https://downloads.unido.org/ot/31/37/31371641/Evaluation%20Manual.pdf

[4] GEF (2010) The GEF Monitoring and Evaluation Policy (Evaluation Office, November 2010).

[5] GEF (2011). GEF Minimum Fiduciary Standards: Separation of Implementation and Execution Functions in GEF Partner Agencies (GEF/C.41/06/Rev.01, 3 November 2011, prepared by the Trustee).

evaluation methods were used as appropriate to determine project achievements against the expected outputs, outcomes, and impacts.

8. The TE was based on a combination of desk review of documents and interviews (face-to-face and remote) with key stakeholders, partners, and beneficiaries involved in the project including the UNIDO Project Manager (PM); the UNIDO acting Country Representative; the Ministry of Environment and Forestry (MOEF), the National Executing Agency (NEA); the National Project Director (NPD); the National Project Coordinator (NPC); the national project team; Prasadha Pamunah Limbah Industri (PPLI), the facility operating entity (OE); Perusahaan Listrik Negara (PLN), the State Electricity Company the main PCB-owner; other PCB-owners, consultants, and other relevant resource persons. Information was also gathered through a country mission that was undertaken from 30 October to 4 November 2023. During this mission, key stakeholders were interviewed and a site visit was made to PPLI, in Nambo Village, Bogor Regency, about 40 km from Jakarta. Prior to the interviews, questionnaires[6] were sent to the interviewees at least one week before.

9. As per the terms of reference for this evaluation, the evaluation team proposed a TOC (cf. Section 1.3) that was used to identify causal and transformational pathways from the project outputs to outcomes and longer-term outcomes, drivers, and assumptions to achieve them. In particular, the evaluation assessed the extent to which the project contributed to putting in place the conditions necessary to trigger the occurrence of the long-term outcomes proposed in the TOC to achieve impact.

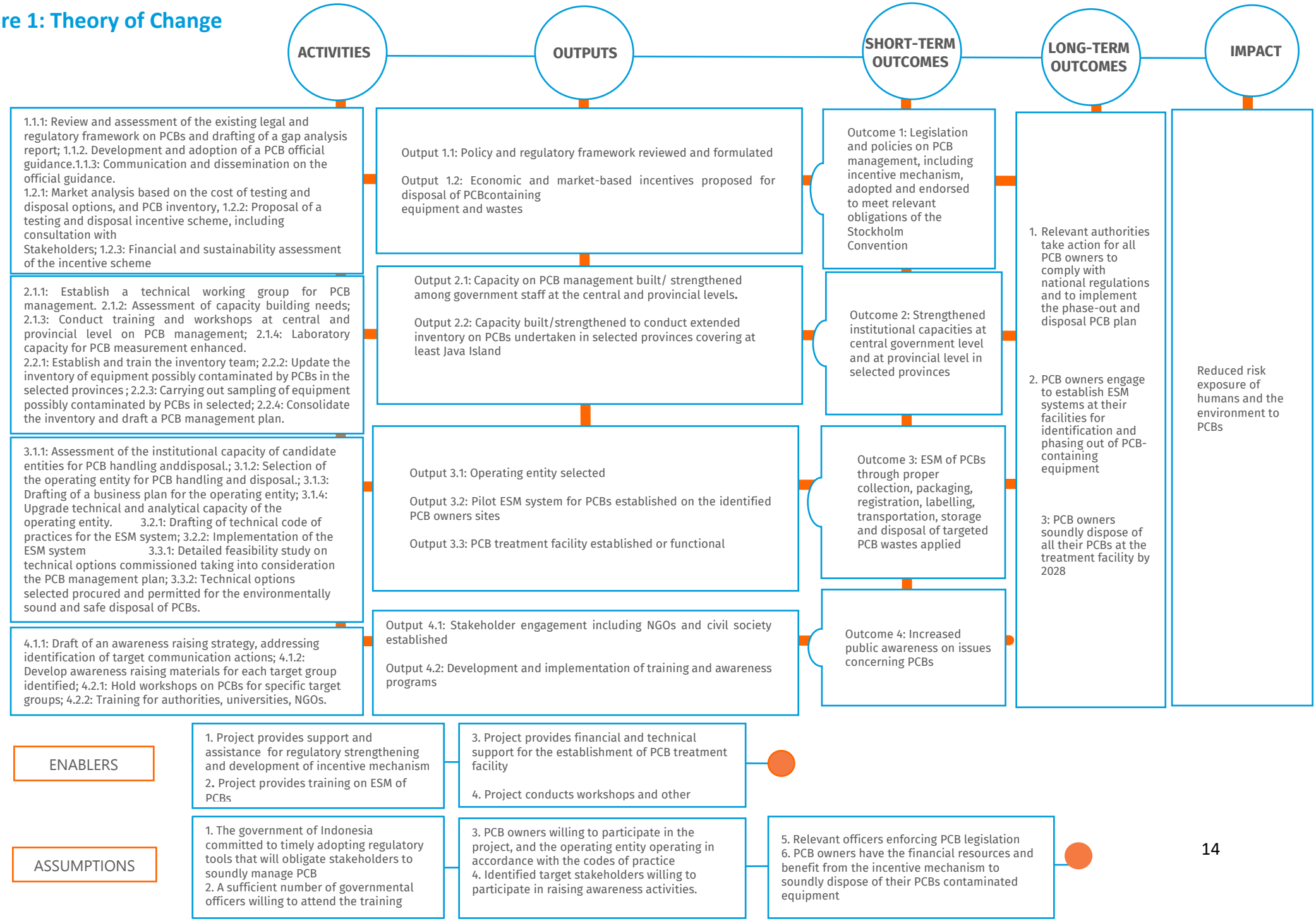
10. Data analysis, development of emerging findings, and evaluation criteria rating were undertaken collectively by the evaluation team. As far as possible, emerging findings were derived through triangulation of data from different sources that contributed to ensure the robustness and validity of the assessment. Whenever a potentially important finding was identified but it was not possible to triangulate (e.g., data/finding provided by a single source), this was explicitly highlighted in the evaluation report.

1.5 Limitations

11. The evaluation did not encounter any major limitations in terms of access to information. During the inception phase, a set of documents was shared with the evaluation team through a Google Drive[7]. Upon request further documents such missing Project Implementation Review (PIR) and financial reports were provided. The national evaluation consultant translated the few documents that were in Indonesian language. The evaluation team could interview all the selected stakeholders, partners, and beneficiaries as well as consultants either during the mission or remotely.

[6] See Annex 5
[7] https://drive.google.com/drive/folders/1Ryc0F6USR6f3SMQemh9gCY7WeRgSNdM1?usp=sharing

Figure 1: Theory of Change



2. Project Background and Context

Table 1: Project Factsheet

Project title	Introduction of an Environmentally Sound Management and Disposal System for PCB wastes and PCB-contaminated Equipment- in Indonesia
UNIDO ID	130249
GEF Project ID	4446
Country	Indonesia
Project donor	GEF
Project approval date/GEF CEO endorsement date	25/07/2013
Actual project start date (First PAD issuance date)	01/11/2013
Planned project completion date (as indicated in project document/or GEF CEO endorsement document)	31/12/2018
Actual project completion date (as indicated in UNIDO ERP system)	31/09/2023
Project duration (year): **Planned:** **Actual:**	 5 10
GEF Focal Areas and Operational Programme	POPs
Implementing agency(ies)	UNIDO
Government coordinating agency	Ministry of Environment of the Republic Of Indonesia
Donor funding	USD 6,000,000
UNIDO input (in kind, USD)	USD 250,000
Co-financing at CEO Endorsement, as applicable	USD 24,372,130
Total project cost (USD), excluding support costs	USD 30,372,130
Planned terminal evaluation date	Sept-Nov 2023

Source: Project document

12. The Republic of Indonesia signed the Stockholm Convention on Persistent Organic Pollutants (POPs) on 23 May 2001 and ratified it on 28 September 2009. The National Implementation Plan (NIP), which was submitted on April 2010, established the baseline situation in terms of POPs in the country including preliminary inventories of POPs chemicals and respective action plans and strategies for the fulfillment of the country's obligations under the Stockholm Convention. In this regard, polychlorinated biphenyls (PCBs) have been widely used in various industrial applications in Indonesia, such as in electrical equipment, hydraulic systems, and heat transfer systems. As a result, there are significant amounts of PCBs in the environment, including in soil, water, and sediments. The presence of PCBs in the environment poses a serious threat to human health and the ecosystem. PCBs are

toxic chemicals that can cause cancer, damage the immune system, and affect the reproductive and nervous systems. The existing legal and institutional framework for the management of PCBs in Indonesia is weak and fragmented. There is no comprehensive regulation that addresses the entire life cycle of PCBs, including their production, use, storage, transport, and disposal. Furthermore, there is a lack of awareness and capacity among stakeholders, including government officials, private sector actors, and local communities, on the issue of PCBs and their management. In that regard, the GEF-funded UNIDO-implemented project *Environmentally Sound Management and Disposal System for PCB wastes and PCB-contaminated Equipment* was developed to assist Indonesia in soundly managing PCBs until final disposal by 2028. The project aimed at overcoming the above-mentioned issues by strengthening the legal and institutional framework for the environmentally sound management of PCBs, developing and implementing a pilot project for the environmentally sound management of PCBs in selected sites, and promoting public awareness and knowledge sharing on the issue of PCBs.

3. Findings

3.1 Relevance

13. The project is highly relevant as it is assisting Indonesia to fulfill its obligations towards the Stockholm Convention, to which it is a Party since 23 May 2001, and which it ratified on 28 September 2009. In particular, the project, through the strengthening of the legal and policy framework and capacity building on the environmentally sound management (ESM) of PCBs until final disposal, is supporting the country for an effective and efficient phasing out and elimination of PCBs by 2028.

14. At the time of its formulation, the project was consistent with GEF-5 Chemicals FA objective CHEM-1 "Phase out POPs and reduce POPs releases"; Outcome 1.4 "POPs waste prevented, managed and disposed of and POPs contaminated sites managed in an environmentally sound manner"; Output 1.4.1 "PCB management plans under development and implementation". The project was focusing on the environmentally sound management (ESM) of PCBs and would directly and indirectly activate funds and investments for the safe control, management, and disposal of PCBs and PCB-containing equipment and waste in the country.

15. The project is in line with UNIDO priorities and mandates, and the renewed mandate on Inclusive and Sustainable Industrial Development (ISID). In particular, the project is very relevant to one of ISID's pillars: Safeguarding the Environment - environmentally sustainable growth, via cleaner industrial technologies and production methods, including in the fields of waste management and recycling; the promotion, adaptation, and transfer of environmentally sound technologies, under which UNIDO aims to assist countries in reaching compliance with the Stockholm Convention and aims at developing capacities in developing countries to protect their populations and their environmental resources from POPs-related pollution. Also, UNIDO has the comparative advantage of having implemented GEF projects in various regions in the Chemicals Focal Area including environmentally sound management of PCBs. UNIDO has extensively carried out projects in the POPs focal area of GEF and strong comparative advantage in providing technical assistance on the ESM of PCBs (about 35% of post-NIP projects).

16. Given that the project is responding to Indonesia's needs for the sound management of PCBs, and it is in line with GEF Chemicals Focal area and UNIDO mandates, the rating on **Relevance** is **Highly Satisfactory**.

3.2 Coherence

17. During the project preparatory phase, the Ministry of Environment and Forestry (MOEF), the National Executing Agency (NEA) of the project, sought the participation of PT Perusahaan Listrik Negara (PLN), a state-owned corporation, which has a monopoly on electric power distribution in Indonesia and generates the majority of the country's electrical power, and owner of more than 650,000 transformers. After several discussions held with the technical staff and higher officials of PLN, MOEF succeeded in getting the engagement of PLN, which committed a very significant amount of co-financng, more than $ 17 million, to the project. MOEF also succeeded

to generate strong support from private PCB owners which have allocated funds and resources to support the objectives of the project.

18. For PCB treatment, the project strategically partnered with PT Prasadha Pamunah Limbah Industri (PPLI), which is an Indonesian company that has been in operation since 1994 providing collection, recycling, treatment and disposal services for hazardous waste and non-hazardous waste. In particular, PPLI is an integrated toxic and hazardous wastes (B3 wastes[8]), processing company, and has experience in processing B3 wastes. PPLi is 95% owned by DOWA[9], a Japanese Company, and 5% by the Goverment of Indonesia through the Ministry of State Owned Enterprises. PPLi holding company, DOWA Eco-System Co. Ltd.[10], is a company dedicated to environmental management and recycling, and a wholly owned subsidiary company of DOWA Holdings Co. Ltd. The Group was established in 1884 as a mining and metal smelting/ refining company in Japan. DOWA Eco-System business is centered on resource recycling, waste management, soil remediation and environmental consultation.

19. Given the approach adopted by the project, rating on **Coherence** is **Highly Satisfactory**.

3.3 Effectiveness

20. Effectiveness was assessed on the extent to which outputs and outcomes have been achieved, and whether the objectives of project have been attained. To meet the objectives of the project, thirty activities were planned to deliver nine outputs that would contribute to four substantive outcomes. The assessment of the delivery of outputs as well as achievement of outcomes, and project objective, was based on whether their indicators proposed in the Project Results Framework (PRF) were available. The scale used for rating ranges from **Highly Satisfactory** (**HS**) to **Highly Unsatisfactory** (**HU**) .

3.3.1 Delivery of outputs

21. There is documented evidence that the project performed very satisfactorily despite challenges faced (discussed in the later sections), and which caused significant delays in project implementation. In particular, the Covid19 pandemic caused a delay of almost two years. As reported in Table 1 below, seven of the nine outputs have been rated **HS**, and the last two **Moderately Satisfactory** (**MS**) respectively. For the rating of components and achievement of outputs, the output ratings have been converted to scores. Then the average score for all the outputs has been calculated and converted to a rating again (see Table 2). The assessment of the outputs, summarized below, was based on whether the project achieved the target for indicators of the respective output.

22. **Component 1: Policy and Regulatory Framework**. Targets for Output 1.1 have been fully achieved. The project facilitated the strengthening of the policy and regulatory framework for the environmentally sound management (ESM) of PCBs in the country. The Ministerial Regulation (MR) No. P29/2020, specifically formulated for the life

[8] B3 waste is the residue of a business and/or activity that contains hazardous and/or toxic materials, which, due to their nature and/or concentration and/or amount, may directly or indirectly pollute and/or damage the environment and/or endanger the environment and human health

[9] https://www.dowa.co.jp/index_e.html

[10] https://www.dowa-eco.co.jp/en/about/profile.html

cycle management of PCBs, was adopted by the Government of Indonesia (GoI) on 29 December 2020. For Output 1.2, a national consultant was recruited, who produced a comprehensive research document on Economic Instrument and Incentive Mechanism. After thorough in-depth discussions with key stakeholders of the sector, three economic instruments, each of which embodied incentive schemes, were proposed to phase-out PCB-contaminated transformer oil in Indonesia, namely: (i) subsidies, (ii) tax deduction, and (iii) levy for PCBs Fund. However, the proposed incentives were not adopted by GoI. Target for this output was therefore not fully achieved, and thus rated **MS**. The project had to focus on alternative incentives that facilitated compliance on the PCB regulations. Beginning of 2021, the project initiated a voluntary-based technical backstopping to industries to help them plan and implement ESM in their respective companies. Overall, Component 1 is rated **S** (Table 2).

23. **Component 2**: **Institutional capacity building and development**. Targets for the two outputs have been very successfully achieved and were thus both rated **HS**. As reported in Table 2, for Output 2.1 the project contributed to the training of 34 persons (20 females and 14 males), which enabled them to undertake a total of 22 training activities with the participation of 1022 individuals (356 females and 666 males) coming from electrical and other industries, laboratories, and provincial offices. Targets for Output 2.2 were also fully achieved. An inventory team was established, and two inventory exercises were carried out in 2026 and 2021 respectively in Java and Sumatra. A total of 4,524 transformers were sampled and tested. 396 were found to contain PCB at levels higher than 50 ppm. It was also found that the majority of the contamination was well below 5000ppm, and justified the choice of the non-combustion technology. Instead of one, three fully accredited laboratories were established/strengthened to analyze PCBs, and a PCB management plan was developed in consultation with key stakeholders and taking into consideration the inventory data.

24. **Component 3**: **ESM of PCBs**. Outputs 3.1 and 3.2 have been very satisfactorily delivered (Table 1). As earlier mentioned (Section 3.2), the project partnered with PPLI as the operating entity (OE) of the PCB treatment facility, and built its technical and analytical capacity accordingly. The selection process was fully initiated and organized by the MoEF/GoI. This election process was designed in a way that selection process and result were valid and legitimate. PPLI benefitted from full support of GoI through MoEF, which facilited the approval and delivery of permits to operate the facility. The project also developed the Code of Practices for ESM of PCBs that were included in MR P29/2020. PPLI is properly equipped and licensed for the treatment of PCB-contaminated equipment. Furthermore, the project provided several trainings to the staff of PPLI on: PCB handling including job safety analysis and emergency response to exposure and spill/leakage, and personal protective equipment (PPE) required for PCB handling; procedure and technique for transformer draining; and procedure and technique for transformer dismantling; extensive training on working, operational, and safety principles of the decontamination module; working, operational, and safety principles of the dechlorination module; and emergency procedures. The target for the first indicator for Output 3.3 was fully achieved (Table 1). However, implementation did not proceed as envisaged as GoI, through MOEF, planned to develop its own PCB disposal facility (using their national budget). Intensive communication and coordination between UNIDO and MoEF took place until agreement was reached, in December 2016, for the procurement of the dechlorination technology that was already being used in the

context of other GEF-funded and UNIDO-implemented projects[11]. Much time was lost, more than two years. The technology was finally procured, and installed at PPLI during the Covid19 pandemic period. Because of the lockdown and travel restrictions, the technology provider could enter Indonesia only in March 2022 for the commissioning of the dechlorination technology when the borders were open again. The late commissioning of the technology, the breaking down of the technology such as solvent leaks in the blower, leaks in several piping and pump connections, as well as damages in several sensors (temperature and level sensors), and the slow pace at which of PCB-owners send their equipment to be treated[12], are reasons why the target for Output 3.3 has not been achieved at closure of the project, only 200 tons PCB-contaminated equipment treated instead of 3,000 tons. It is worth noting that PPLI, outside the project context, invested in a hazardous waste incinerator costing about $1.6 M. During a trial test burn done in 2021, a destruction and removal efficiency (DRE) of 99.9999%, equivalent to BAT level, was achieved[13]. This incinerator can be used to destroy pure PCBs or highly contaminated transformer oil as well as other POPs and hazardous wastes. Given that the target for amount of PCB treated has not been achieved, Output 3.3 has been rated **MS**. Component 3 was rated **S** (Table 2).

25. **Component 4**: **Public awareness raising and advocacy campaigns**. There is documented evidence that the project performed exceptionally well for both outputs of this component (Table 1). It rightly developed a communication plan, which included stakeholder analysis. Three mandatory workshops targeting different stakeholder groups were successfully carried out: the Influencer Workshop for policymakers, the Pathway Workshop for NGOs, women groups, research centers, and universities, among others, and the Source Workshop for potential PCBs owners. The project developed videos and clips that were uploaded on the project's YouTube channel[14]. More than 2600 awareness materials including canvas bags, USB flash drives, pens, mugs, notebooks, stickers, coffee mugs, T-shirts, and key chains were distributed during the project events. Feedback gathered through questionnaires before and after the training and awareness raising workshops indicated a significant increase in knowledge and awareness of the participants about PCBs and the need for their sound management. The project also developed brochures, guidance leaflets, a documentary film, and a website[15] were the main communication materials promoting the project and advocating the ESM of PCBs. The evaluation could not access the project website however. PCB Free Indonesia Facebook page and Twitter accounts were also created during the project and served as forums for discussion and sharing of information among the project stakeholders and partners.

26. Based on the findings described in the above paragraphs and on the assessment reported in Table 2 below, **delivery of outputs** is rated **Highly Satisfactory**.

[11] (1) Global Programme to demonstrate the viability and removal of barriers that impede adoption and successful implementation of available, non-combustion technologies for destroying persistent organic pollutants (POPs) – Philippines Project – GEF ID 2329, September 2007. (2) Capacity building for environmentally sound PCBs management and disposal in Mongolia – GEF ID 3542, June 2009.
[12] Interview data
[13] Interview data
[14] @PCB Free Indonesia
[15] https://pcbsfreeindonesia.menlhk.go.id/

Table 2: Delivery of outputs

Outputs	Indicators/target at design	Target/Indicators achieved	Comments	Rating
Output 1.1: Policy and Regulatory framework reviewed, formulated, and adopted.	• Regulatory instruments, like a framework regulation on PCBs or an official guidance on PCB management is drafted, submitted to the relevant legislative bodies, and officially adopted.	Ministerial Regulation (MR) No. P29/2020 specifically regulating PCBs Management has been formulated and adopted by the Government of Indonesia (GoI) on 29 December 2020	Target fully achieved	**HS**
Output 1.2 Economic and market-based incentives proposed for the disposal of PCB-containing equipment and wastes	• An incentive mechanism for supporting the timely ESM disposal of PCBs equipment and waste agreed and implemented.	A comprehensive research document on Economic Instruments and Incentive Mechanism has been developed, transmitted, and accepted by GoI as a policy recommendation.	The incentives proposed were not accepted and thus were not implemented.	**MS**
Output 2.1: Capacity on PCB management built/strengthened among government staff in the central and provincial level.	• A PCB working group of at least 10 selected trained to conduct training to other relevant stakeholders. • Number of training carried out successfully.	• A total of 34 persons (20 females and 14 males) were successfully trained which enabled them to train others • A total of 22 training activities were carried out with the participation of 1022 individuals (356 females and 666 males) coming from electrical and other industries, laboratories, and provincial offices	Capacity successfully built for the ESM of PCBs	**HS**
Output 2.2: Capacity built/ strengthened including laboratory capacity, to conduct extended inventory on PCBs in selected provinces covering at least Java island	• PCB inventory team established • At least one laboratory accredited to analyze PCBs • A PCB inventory (including labeling and registration of identified PCB equipment in the project PCB database) carried out, covering at least all the provinces of Java Island. • A PCB management plan for the project, based on inventory outcome and priority considerations, which can be used as a model for the country PCB management plan, drafted and agreed among relevant stakeholders.	• Team comprising of project team, MOEF and PLN established • Three laboratories established/strengthened to analyze PCBs • Two inventory exercises carried out in 2016 and 2021 in Java and Sumatra. A total of 4,524 transformers were sampled and tested. 396 were found to contain PCB at levels higher than 50 ppm. • PCB management plan, a living document, developed in consultation with key stakeholders, and based on the inventory data	Output successfully delivered	**HS**
Output 3.1: Operating entity (OE) selected	• One operating entity for PCB handling and disposal selected. • Technical and analytical capacity of the operating entity upgraded as needed.	• PT. Prasadha Pamunah Limbah Industri (PPLI) selected as the Operating Entity • Project procured dechlorination technology, and PPLI staff trained on its sound operation	Output fully achieved	**HS**
Output 3.2: Pilot ESM system for PCBs established on the	• Code of practices for ESM of PCBs drafted, translated in English and	• Code of Practices for ESM of PCBs developed and included in MR P29/2020	Output fully delivered. The challenges is to disseminate of	**HS**

identified PCB owners' sites	Indonesian, and approved. • Operating entity properly equipped and licensed for carrying out packaging, transportation, labeling, tracking, temporary storage, and disposal.	• PPLI properly equipped and licensed, and staff adequately trained for the handling and treatment of PCBs	packaging, transportation, labeling, tracking, temporary storage and disposal to stakeholders.	
Output 3.3: PCB treatment facility established and functional	• One or more suitable disposal facilities, compliant with the SC BAT/BEP criteria, for a capacity suitable to fulfill or exceed project needs, established, tested and permitted. • 3000 tons of PCB equipment or waste disposed by the facility.	• Dechlorination technology consisting of three modules procured by the project and successfully installed and commissioned at PPLI • Due to delays, only about 200 tons treated	Although treatment technology procured and installed at PPLI, only about 200 tons treated so far, well below the 3000 tons target	**MS**
Output 4.1: Stakeholders engagement including NGOs and civil society established	• At least 2 universities, one NGO, 2 public institutions, 2 waste management companies identified and participating in raising awareness initiatives.	The three (3) mandatory workshops successfully organized namely: the Influencer Workshop (for policymakers), the Pathway Workshop (for NGOs, women groups, research centers, universities, etc.), and the Source Workshop (for potential PCBs owners).	Target exceeded, representatives of more than universities invited to participate in training and awareness raising events	**HS**
Output 4.2: Development and implementation of training and awareness-raising programs	• Number of awareness-raising material • Number of awareness-raising events held. • Outcome of questionnaire surveys.	• Materials (videos and clips) developed and uploaded on the project's YouTube channel (@PCB Free Indonesia). More than 2600 awareness materials distributed • Several events (more than 20) contributing to knowledge management and awareness raising undertaken. • Feedback gathered through questionnaires at training workshops	Target exceeded	**HS**

Table 3: Rating of components and overall rating for achievement of outputs

Component	Outputs	Rating	Score*	Average score	Component Rating
Component 1	Output 1.1	HS	6	5	S
	Output 1.2	MS	4		
Component 2	Output 2.1	HS	6	6	HS
	Output 2.2	HS	6		
Component 3	Output 3.1	HS	6	5.3	S
	Output 3.2	HS	6		
	Output 3.3	MS	4		
Component 4	Output 4.1	HS	6	6	HS
	Output 4.2	HS	6		
Total and average score/Overall rating**			50	5.6	**HS**

*HS: 6; S: 5; MS: 4; MU: 3; U: 2; HU: 1; **Total score and average score for outputs and overall rating for achievement of outputs

3.3.2 Achievement of outcomes and attainment of project objective

27. Similar to outputs, the assessment of project objective and outcomes was based on the availability of the indicators proposed in the PRF of the project document. The same rating scale was used. The assessment is summarized in Table 3 below . The project objective was rated **MS** as the target of treating 3000 of PCBs was not achieved. Outcome 1 was also rated **MS**. Although MR No. P29/2020 on the ESM of PCBs has adopted by GoI, the incentive mechanisms proposed by the proposed was not adopted by the government. The authorities rather rely on the provisions stipulated under MR P29/2020 that: "*Owners of transformers, capacitors and dielectric oil hold responsible to carry out PCBs identication prior to 31 December 2021*" and "*Owners of PCBs wastes hold responsibility to carry out disposal prior to 31 December 2028*". According to available information, while the big PCB owners such as PLN have the necessary financial resources to eliminate their contaminated equipment, the small ones may not have this capacity. The evaluation recommends that the authorities consider putting in place a financial mechanism to assist those small PCB owners and others who may require financial assistance. A number of options exists such the mechanism in place incineration for domestic wastes whereby the government is providing financial support to cities who own incinerators to produce energy. The Indonesia Environment Fund[16] (IEF) that was officially launched in October 2019 is another option. IEF is an environmental funding mechanism for channeling and distributing environmental and climate funds to support Indonesia's vision to preserve the functions of the environment and prevent environmental pollution and degradation.

28. Targets for Outcome 2 have been exceeded. Thirty four instead of twenty core staff from national and local governments have trained on ESM of PCBs, and the capacities of three laboratories have been strengthened and accredited to perform PCB analysis. Outcome 3 was rated **MS** as the target of treating 3000 tons of PCBs was not achieved due to delays in project execution (cf. Section 3.3.1). On the otherhand, achievements for Outcome 4 have been outstanding, twelve dissemination events were organized that were attended by a total of 1,183 participants from four hundred districts and municipalities in thirty four provinces as well as participants from universities, NGOs, and other public and private institutions.

29. Based on scores reported in Table 4, attainment of objectives and achievement of outcomes is rated **Satisfactory**. Overall, **effectiveness** is rated **Satisfactory**[17].

Table 4: Rating for attainment of objectives and achievement of outcomes

Objectives	Target/Indicators at design	Target/Indicators achieved and comments	Rating
The project aims to (a) introduce and implement a PCB management system to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment and (b) dispose of at least 3,000 tons of	• Tons of PCB disposed • Disposal of NIP PCB inventory of around 20,000 tons	• Due to delays, only 200 tons treated so far • The project has already provided reagents for the disposal of 1,000T	**MS**

[16] https://bpdlh.id/

[17] Score for delivery of outputs is 5.6 and that for achievement of oucomes is 4.8. Average value is (5.6 + 4.8) / 2 = 5.2, which corresponds to **Satisfactory**

PCB wastes and PCB-containing equipment in an environmentally sound manner maximizing opportunities for public-private partnership.		PCB-contaminated oil and 2,000T PCB-contaminated metals.	
Outcomes	**Target/Indicators at design**	**Target/Indicators achieved and comments**	Rating
Outcome 1: Legislation and policies on PCB management, including incentive mechanisms, adopted and endorsed to meet relevant obligations under the Convention	• A new set of regulatory instruments on PCBs drafted, implemented, and endorsed. • Incentive scheme for the project implemented.	• A Ministerial Regulation (MR) No. P29/2020 specifically regulating PCBs Management has been formulated and adopted by the Government of Indonesia (GoI). • Incentive schemes proposed by the project but not adopted by GoI	**MS**
Outcome 2: Strengthened institutional capacities at the central government and provincial level in selected provinces	• At least 20 core staff (focal points) covering local governments at provincial level in Java Island intensively trained to implement PCB management awareness and training to other relevant stakeholders. • At least one government laboratory accredited to perform PCB sampling and analysis	• Target exceeded. 34 core staff from national and local governments trained on ESM of PCBs • Target exceeded, 3 laboratories accredited to perform PCB analysis	**HS**
Outcome 3: ESM of PCBs through the proper collection, packaging, registration, labeling, transportation, storage, and disposal of targeted PCB wastes and PCB-contaminated equipment demonstrated	• Tons of PCBs and PCB-containing equipment identified and registered in the project database, committed for disposal • At least 3000 metric tons of PCB equipment disposed of in compliance with SC requirements and guidelines.	• In the two inventories carried out in 2016 and 2021, 396 transformers were found to be PCB-contaminated of the 4,524 that were sampled and tested. • Due to delays, only about 200 tons of PCB-contaminated equipment has been treated. However, PLN the biggest PCB-owner already developed its PCB management plan to meet the 2028 target	**MS**
Outcome 4: Increased public awareness on issues concerning PCBs	• At least 3 Awareness Workshops held on PCB issues. • At least 50 institutions, PCB owners, public institutions scientific institutions, and NGOs with increased awareness on PCB management.	• Target exceeded, 12 dissemination events organized. • A total of 1,183 participants from 400 Districts and Municipals in 34 provinces as well as universities, NGOs, and other institutions participated to these events	**HS**

Table 5: Overall rating for objective and outcomes

	Rating	**Score**
Objective	MS	4
Outcome 1	MS	4
Outcome 2	HS	6
Outcome 3	MS	4
Outcome 4	HS	6
Overall	**S**	**4.8***

* average value of the scores for objective and outcomes

3.4 Efficiency

30. The CEO endorsement date was on 1 August 2013 and project implementation started officially on 10 October 2013. The project was planned for a duration of 5 years and to end on 10 October 2018. The project was slow to start, the national counterparts signed the project agreement only on 16 June 2014. The project faced other challenges such as the merging of the Ministry of Environment and the Ministry of Forestry in November 2014, which created institutional uncertainty, slowed down the decision-making process, and delayed project implementation by more than one year. As discussed previously, the procurement of the dechlorination technology was considerably delayed (Section 3.3.1 under Component 3). The turnovers of NPD (4 turnovers) and NPC (3 turnovers) also slowed down the implementation process. The outbreak of the Covid19 pandemic in March 2020 with opening of borders only in March 2022 caused further delays. To allow for the completion of activities, the project was granted five extensions to close on 30 September 2023.

31. A full agency mode of execution was applied and UNIDO managed the all the GEF funds. The project applied the UNIDO standard procedures for the procurement of equipment and goods as well as the recruitment of consultants and for the management of funds. Prior to payments and fund disbursements, for instance, the UNIDO PM ensured that all relevant documents and approvals were obtained before processing requests[18].

32. There is documented evidence that the project used the most efficient options for the recruitment of consultants, for sub-contracting service providers, and for project execution. The recruitment of consultants and the selection of service and equipment providers was done through applications and bidding exercises. For consultants, the project relied also those who had past experience with UN agencies, which was the case for instance the international consultant who worked in previous UNIDO PCB and POPs projects. The UNIDO PM used her past experience and lessons learned from the Philippines PCB and Mongolia PCB projects[19] for the choice of the non-combustion PCB treatment technology and to develop criteria for selecting the OE. The project also benefitted from data generated during NIP development.

33. Table 5 displays the budget allocated per item and the corresponding expenditures. The reported figures indicate that the delays encountered did not affect cost-effectiveness as all the outputs have been successfully delivered within the total approved budget. As of June 2023, a total of $5,780,830 has been disbursed with an unspent balance of $139,169 corresponding to budgets for a few remaining activities including the terminal evaluation, and the final workshop that was undertaken in October 2023. It was reported a significant reallocation of funds of about $1 M that was saved from Component 3 (treatment technology) and used for the second inventory carried out in 2021 under Component 2. Specific expenditures for project management costs (PMC) were not provided despite requests made. These expenditures are likely to be included in items 1 and 4 (Table 5). As no over expenditures[20] were noted taking those two items together, it can be assumed that expenditures for PMC have been very reasonable taking into consideration the five-year extension granted, and noting that a full-time national project manager (NPM) was recruited for project management and coordination. These findings

[18] Interview data
[19] See footnote 11
[20] Funds ($) unspent for these two items = 32,962 + (–26,086) = 6.876

demonstrate a very cost-effective management of the project funds. In addition, the amount of materialized co-finaning surpassed the amount pledged initially by almost three fold. The amount considered for PPLI included the investment made outside the project context for the construction of a hazardous waste incinerator that could destroy pure and highly contaminated transformer oils (cf. Section 3.3.1 under Component 3).

34. Although implementation was very much delayed, by taking corrective actions and applying some cost-effective measures, the project successfully delivered all the outputs within the planned budget; **efficiency** is thus rated **Satisfactory**.

Table 6: Project expenditures as at June 2023 (GEF funds only in USD)

Item		Allocated budgets	Unapproved	Expenditures	Funds available
1	Staff & International Consultants	195,267.72		162,304.95	32,962.77
2	Local Travel	125,803.05		108,930.98	16,872.07
3	Staff Travel	30.00		171.22	-141.22
4	National Consultants/Staff	527,439.59		553,526.27	-26,086.68
5	Contractual Services	4,097,922.34	80,000.00	3,968,298.80	49,623.54
6	Train/Fellowship/Study	107,130.40		59,050.08	48,080.32
7	International Meetings	74,770.61		73,534.87	1,235.74
8	Premises	708.72		708.72	0.00
9	Equipment	746,532.42		723,447.42	23,085.00
10	Other Direct Costs	124,395.15		130,857.52	-6,462.37
Total		6,000,000.00	80,000.00	5,780,830.83	139,169.17

(Figures provided by UNIDO)

Table 7: Cofinancing (USD)

Source	Co-financier	Type	Amount pledged	Amount materialized
National Government	MOEF	Grant	1,000,000	
		In-kind	2,590,000	
National Government	BPPT	Grant	154,830	40,937
		In-kind	762,542	
National Government	PT PLN HQ	Grant	17,305,277	51,445,343
National Government	PT PLN R & D Unit	Grant	100,040	
Private sector	PT Krakatau Daya listik	Grant	903,123	1,288,329
		In-kind	1,063,410	
Private sector	PT Freeport Indonesia	Grant	56,500	35,587
Private sector	PT PPLI		-	16,900,000
Private sector	PT Suzuki Indonesia		-	60,866
Private sector	PT Good Year Indonesia		-	131,153
Private sector	PT South Pacific Viscose	Grant	21,408	
GEF Agency	UNIDO	Grant	165,000	165,000
		In-kind	250,000	250,000
	Total		**24,372,130**	**70,317,215**

3.5 Sustainability

35. Sustainability is the likelihood of continued benefits after the project ends. Its assessment is done in terms of the risks that the project is facing; the higher the risks, the lower the likelihood of sustainability of project benefits. The four

dimensions of risks to sustainability: sociopolitical, financial, environmental, and institutional frameworks and governance risks) are discussed below.

36. **Sociopolitical risks** – As earlier mentioned, Indonesia is a party to and ratified the Stockholm Convention. It transmitted its NIP on 15 April 2010, and the sound management of PCBs was one of the priorities mentioned in the NIP. In the opening speech of the final workshop held on 4 October 2023 in Jakarta that was attended by a large number of participants including representatives from the GEF and the Basel Rotterdam and Stockholm (BRS) Conventions Secretariat, the Director General of the Waste Management Department of MOEF reiterated the commitment of the GoI to fulfill its obligations towards the Stockholm Convention. In particular, she mentioned that the project has contributed to build an important foundation that would be part of the national effort to eradicate PCBs. She also emphasized that the Indonesian Government, especially the Ministry of Environment and Forestry, remained strongly committed to supporting the achievement of the global target of eradicating PCBs by the end of 2028. In light of this strong commitment showed by the Director General, **Socio-political Sustainability** is rated **Likely**.

37. **Financial risks** – One aspect of financial sustainability is whether, PPLI, the OE, has the financial resources to maintain and operate the dechlorination treatment facility beyond the project life. PPLI is a state of the art hazardous waste complex established since 1994 (cf. Section 3.2) treating about 300,000 tons of hazardous wastes annually[21]. It has invested about $1.7 M to construct a building to host the dechlorination technology. And as mentioned in Section 3.3.1, it also invested more than $16 M, outside the project context, to establish a hazardous waste incinerator that can operate at BAT level, and can destroy pure PCBs. Depending on the type of wastes, PPLI is charging a rate of $3 to $5 per kg, for PCBs it is $5. These findings clearly indicate that PPLI has the financial capacity to operate beyond the project life. The other aspect is whether PCB owners have the financial resources to soundly dispose of their contaminated equipment. While the big PCB owners such PLN have such capacities, this might not be the case for the small owners. As suggested earlier (cf. Section 3.3.2), the evaluation recommends that the authorities consider putting in place a financial mechanism to assist those small PCB owners. Upon the request of the GoI, a follow-up inititive (PIF stage) has been developed and already submitted to GEF[22]. One of the objectives of this Phase 2 project is to develop a set of robust financing mechanisms, encompassing both facilitating payments for PCB disposal services and mobilizing funds under a newly developed Environmental and Infrastructure Damage Insurance Scheme (EIDIS), which aims at supporting the environmentally sound disposal or treatment of transformers contaminated by PCB and their replacement, partially supported by the governmental and donor funds, but significantly contributed by transformer owners. **Financial sustainability** is rated **Likely**.

38. **Institutional framework and governance risks** – MR No. P29/2020 related to the life cycle management of PCBs was adopted by the Government of Indonesia on 29 December 2020. MOEF has included PCBs management criteria of the MR in the revised draft of MOEF Regulation 1/2021 concerning Public Disclosure Program for Environmental Compliance – PROPER, which was launched in June 1995. PROPER, a program for pollution control, evaluation, and rating, is a national-level public

[21] Interview data

[22] Polychlorinated Biphenyls-free Indonesia: Financing a shift to more efficient energy systems through the elimination of related waste and contaminated equipment – GEF ID 11425

environmental reporting initiative. The objective of this regulatory tool is to promote industrial compliance with pollution control regulations, to facilitate and enforce the adoption of practices contributing to 'clean technology,' and to ensure a better environmental management system. This program is built on the premise that the mechanisms of public disclosure and accountability, transparency in operations, and community participation would empower local communities to achieve effective and sustained pollution control practices. As confirmed by the DG during her speech at the final project workshop, the GoI is currently in the process of integrating and implementing more effective and efficient policy steps through the PROPER mechanism. She also stated that the GoI would provide assistance regarding the management of PCBs and reach out to related parties outside the PROPER mechanism with existing and the newly developed legal instruments to ensure ESM of PCBs in the country. According to feedback[23], officers of the Directorate for Enforcing Laws on hazardous substances have already started to undertake spot checks e.g. a spot check undertaken at Goodyear premises to clean up a PCB-contaminated area. Officers of the Directorate General for enforcement of laws on Forestry and Environment regulations have also started undertaking spot checks to ensure that companies were compliant to regulations. The Phase 2 PCB project, submitted to GEF for approval, proposes to ensure better enforcement of the MR on PCB management and strengthen PCB management regulation, including the possibility of introducing administrative and financial sanctions for non-compliance with the obligations envisaged by the Stockholm Convention, and strengthening the enforcement and inspection capacity monitoring capacity of the environmental authority. In light of the above findings, **Institutional framework and governance sustainability** is rated **Likely**.

39. **Environmental risks** – The project is considered ecologically sustainable as it was designed to build the capacity of Indonesia for the ESM of PCBs until their final disposal by 2028. The authorities have already started to enforce the MR on PCBs and are taking steps to include the PCB regulations in the PROPER instrument, which would facilitate PCB monitoring. As no environmental risk that can influence or affect the project's results and future flow of benefits has been identified, **Environmental Sustainability** is rated **Likely**.

40. As no risks that may affect the project results, **sustainaibility** is considered **Likely**.

3.6 Progress to Impact

41. Progress to impact was assessed on the extent to which the three Long Term Outcomes proposed in the TOC (Figure 1) were emerging in Indonesia. To support the likelihood of impact, the proposed assumptions 5 and 6 in the TOC related to the long term outcomes were also assessed to confirm whether they were valid. The assumptions 1 to 4 and the enablers relate to the delivery of outputs and the achievement of short term outcomes. The assessments are discussed below (Table 7).

42. There are good evidence that Long term Outcome 1 is emerging in the country. As discussed earlier (Section 3.5 under Instituional risk) officers of the Directorate for Enforcing Laws on hazardous substances and those of the Directorate General for enforcement of laws on Forestry and Environment regulations have already started inspections and spot checks to ensure that companies were compliant to the

[23] Interview data

national regulations on PCB. In addition, the follow-up inititiave being developed and the PIF already submitted to GEF for approval[24] would contribute to ensure better enforcement of the MR on the ESM of PCBs as well as strengthening the enforcement, and the inspection and monitoring capacities of the country to check for compliances.

43. Long term Outcome 2 is also emerging. PLN and some other major PCB owners have already developed their PCB management plans and are implementing them. For instance, PLN, owner of more than 500,000 transformers, has almost completed the identification of all its PCB-contaminated equipment and has already planned a road map for their treatment/elimination by 2028[25]. The challenge would be for the small PCB owners as many do not have the financial resources to phase out and soundly eliminate their contaminated equipment. The Phase 2 PCB project is timely as it is planning to develop a set of robust financing mechanisms, which aim at supporting the sound disposal or treatment of PCB-contaminated transformers, which the small owners and others could benefit from. Althoug too early to assess, the Long term Outcome 3, which is closely linked to Long term Outcome 2, is also emerging. Some big owners have already started to send their contaminated equipment for treatment at PPLI. The challenge would be to reach out to all PCB owners across the country. The Phase 2 project, a five-year initiative ending in 2029 if implementation starts in 2024, would greatly assist in the scaling up and replication of the project results to assist Indonesia fulfil its obligation of eliminating all PCBs by 2028.

44. As discussed earlier assumption 5 is proving to hold. On the other hand, for assumption 6, the incentive mechanisms developed by the project have not been adopted by the GoI. The evaluation recommended the setting up of financial mechanisms to assist owners in eliminating their PCBs (cf. Section 3.3.2). If approved and implemented, the Phase 2 project would assist Indonesia to set up such mechanisms.

45. Based on the findings discussed above and provided the approval and implementation of the Phase 2 project, the long term impact to eliminate all PCBs by 2028 is considered **Likely**.

Table 8: Status of long term outcomes and the related assumptions

Long term outcomse	Observation/findings	Rating
1. Relevant authorities take action for all PCB owners to comply with national regulations and to implement the phase-out and disposal PCB plan	Relevant authorities have started to enforce the MR on PCBs, and national. Phase 2 PCB project to strengethen enforcing and monitoring capacity on PCB MR	**S**
2. PCB owners engage to establish ESM systems at their facilities for identification and phasing out of PCB-containing equipment	Big PCB owners such as PLN already developed its phase-out plan, and have started its implementation. The challenge would be for small owners. Phase 2 PCB project to consolidate results	**S**
3. PCB owners soundly dispose of all their PCBs at the treatment facility by 2028	Big PCB owners have started to get their contaminated equipment treated. Challenge would be to upscale and replicate through the country. Phase 2 project to implement financial incentives/mechanisms	**S**
Assumptions	**Observations/findings**	**Rating**

[24] See footnote 22
[25] Interview data

Long term outcomse	Observation/findings	Rating
5. Relevant officers enforcing PCB legislation	Enforcing of PCB regulations have started and included in PROPER	S
6. PCB owners have the financial resources and benefit from the incentive mechanism to soundly dispose of their PCB-contaminated equipment	Big PCB owners have the capacity, maybe not the smaller ones. Incentive mechanism not adopted by the GoI	S

3.7 Gender Mainstreaming

46. The project recognized that the level of exposure to POPs chemicals and its related impacts on human health are determined by social and biological factors, women, children and men might be exposed to different kinds, levels and frequency of POPs. The project document thus mentioned that gender dimensions would be an integral part of the project. And it would be addressed with due regard to UNIDO gender policy, mainly by involving women and vulnerable groups at the sector level (ministries and indutries), at the stakeholder level (participation in PSC and technical working group – TWG) and at the information and awareness raising levels. There is no evidence whether efforts were made to specifically involve women in the PSC and technical meetings. Furthermore, the results of a study done in 2017[26] on gender integration in the POPs projects of UNIDO showed that there was not much involvement of women in the PCB projects. Starting from the inventory of transformers up to the workers in the industries using transformers with PCB oil, it was noted that most of the workers involved are males. However, the participation of women in the project was very satisfactory. The UNIDO PM, the NPDs as well as the NPC were women. Of the 983 participants who attended the 9 capacity-building workshops, 345 were women. Similarly, the participation of women in the 18 awareness-raising activities was quite satisfactory: 1649 of the 4263 participants were women. Rating on gender mainstreaming is **Satisfactory**.

3.8 Environmental Impacts

47. The overall objective of the project was to build capacity for the sound management of PCBs in the country. More specifically, it was designed to develop and implement environmentally sound transformer maintenance and service practices as part of the ESM system, which would eliminate further cross-contamination of transformers, and consequently, reduce risks to human health and the environment. Ultimately, the project would eliminate 3,000 tons of PCB-contaminated equipment. Due to delays in project implementation, the target was not achieved, only about 200 tons were soundly treated at project closure.

3.9 Performance of Partners

3.9.1 UNIDO

48. UNIDO was the implementing agency. A project manager (PM), based at UNIDO Head Quarters in Vienna was nominated to manage the project, and she was supported by a project assistant. A NPM was recruited to coordinate activities with national counterparts and partners and was part of the Project Management Unit (PMU) that was established at the start of project implementation . In general, UNIDO performed very well and showed its capacity to initiate, support, and facilitate the execution of

[26] Report on the Stockholm Convention division gender mainstreaming consultancy. UNIDO, Stockholm Covention Division. Dr Johanna Maula, Gender Expert, 24 July 2017

activities. In particular, the dedicated NPM acted very professionally with great leadership, and was very pro-active in engaging the stakeholders, In addition, UNIDO's very good understanding of the technical needs for the ESM of PCBs as well as the capacity building needs of the institutional and private sectors, and making use of lessons learnt from other previously implemented projects[27] (cf. Section 3.3.1 under Component 3), and its diplomatic approach to engage all stakeholders were key factors to achieve results. The UNIDO PM and/or the NPM participated in all the PSC meetings and provided adequate and timely guidance and support that were well appreciated by the national stakeholders, who rated their performance very satisfactorily (Table 8). The quality national and international consultants that UNIDO recruited to provide technical support or service were also well appreciated. In 2021, a National Technical Advisor (NTA) was recruited to provide technical backstopping to PCB owners and also to assist them in developping their PCB phase out plans. The acting Country Representative facilitated communication with high level national counterparts, and participated in some PSC meetings and a few other events. UNIDO performance is rated **Highly Satisfactory**.

3.9.2 National Counterparts

49. There is documented evidence that MOET, the NEA of the project, fully played its role. It hosted the PMU that was constituted by a NPD and a NPC both from MOEF, and the NPM. The NPD was also the chair of the PSC, and the NPC was responsible to oversee the project activities. In addition, MOEF constitued a TWG of about 8 persons that worked closely with the PMU and assisted in the coordination and organization of activities. The support and guidance provided by the NPD, NPC, and the PMU was highly appreciated (Table 8). Other major stakeholders such as the national GEF focal point and the Ministry of Energy were members of the PSC. As confirmed from various sources during the interviews, they were fully engaged and active during the PSC meetings. They provided adequate support and took the necessary decisions to facilitate implementation. The performance of national counterparts is rated **Highly Satisfactory**.

3.9.3 Private sector

50. PPLI has shown strong commitment throughout the entire project, from the moment it was selected as the operating entity of the treatment facility. It invested significantly to construct a building of international standards to host the dechlorination technology. It also invested in a state-of-the-art hazardous waste incinerator that can be used to destroy pure and highly contaminated transformer oils. The PCB owners were also very much engaged in the project. Many have already developed their PCB management plans and some such as PT. Suzuki Indomobil Motor, PT. Goodyear Indonesia, and PT. Freeport have already sent their contaminated equipment for treatment at PPLI. This strong involvement is confirmed by the high amount of co-financing that materialized from PPLI and the PCB owners (Table 6). Rating for private sector is **Highly Satisfactory**.

3.9.4 Donor

51. GEF was the main donor for the project. The funds were available, and fund transfers were timely and adequate. Rating is **Satisfactory**.

Table 9: Rating by respondents.

[27] See footnote 11

Entity	n*	Respondent ratings			Average score	Overall rating
		MS: 4	S: 5	HS: 6		
UNIDO	9	0	3	6	5.67	**HS**
NPM	7	0	3	4	5.57	**HS**
International Consultants	5	0	2	3	5.60	**HS**
National Consultants	5	0	3	2	5.40	**S**
NPD	4	1	2	1	5.00	**S**
NPC	3	0	1	2	5.67	**HS**
PMU	2	0	0	2	6.00	**HS**

*n: number of respondents

3.10 Results-based Management

52. The findings clearly indicate that a results-based management approach was adopted to implement the project. As per the PIR reports, the PRF, and the indicators mentioned therein were used to track progress at both output and outcome levels. There is also documented evidence that the PSC used a participatory approach to take decisions and make recommendations based on information provided by the PMU on project progress. Following these recommendations, adaptive and corrective measures were taken that allowed to achieve targets. Rating for results-based management is Satisfactory.

3.11 Monitoring & Reporting

53. The project document proposed an adequate detailed monitoring and evaluation (M&E) plan. This plan, with a total GEF budget of US$130,000, included all the monitoring and evaluation activities to be implemented within the project. The inception workshop was undertaken in November 2013. After this kick-off workshop, annual meetings were conducted either as Project Coordination Meetings or as Annual Project Meetings. During the 2016 Annual Project Meeting, it was agreed that those meetings could be considered as PSC meetings. The PSC was officially established through a Decree of the DG of MOEF. The subsequent PSC meetings were held as planned, noting that remote virtual PSC meetings were held during the Covid19 pandemic period. There is documented evidence that the PSC was providing adequate guidance and making appropriate recommendations to adapt to unforeseen situations or to respond to challenges. It is clear that the project results framework (PRF) was used as basis for implementation, and the SMART verifiable indicators therein were used to track progress at both output and outcome levels. From 2019, a dashboard – referred to as the Project Information System was developed, approved, and officially used to closely monitor the project implementation and accomplishments. This was also utilized as a reference to the annual PIR reporting. The midterm evaluation was carried out in July 2019, and all the recommendations made were adequately addressed by the project management. All reports required by UNIDO and the GoI were completed and submitted on time. All PIR reports were updated and timely submitted to the GEF. Quarterly reports were also submitted by the PMU as required by MoEF. Special reports or updates required by GoI were also complied with and submitted to the requiring office. Final or completion reports of consultants were also submitted to UNIDO HQ and GoI. Rating on monitoring and reporting is **Satisfactory**.

3.12 Overarching assessment and rating table

54. Table 10 below summarizes the assessment of the project.

	Evaluation criteria	Evaluator's summary comments	Rating
A	**Impact (progress toward impact)**	The three long term outcomes proposed in the TOC are seen to be emerging, and the two related assumptions are proving to hold	**L**
B	**Project performance**	**All stated objectives achieved**	**HS**
1	• Relevance	Project assisting Indonesia to fulfill its obligations to eliminate PCBs by 2028, and aligned with GEF Focal areas and UNIDO mandates	HS
2	• Coherence	Engaged key stakeholders since the preparatory phase and strategically partnered with PPLI, operator of a state of the art hazardous waste complex	HS
3	• Effectiveness	Most stated objectives achieved. National regulations for the ESM of PCBs developed and adopted by national authorities. National capacity built for the identification and treatment of PCB-contaminated equipment	S
4	• Efficiency	Despite delays, most activities completed and outputs delivered within budget and. Materialized co-financing largely exceed pledged amount at design	S
5	• Sustainability of benefits	No socio-political, institutional framework & governance, financial and environmental risks identified, sustainability of project benefits considered likely.	L
C	**Cross-cutting performance criteria**		**S**
1	• Gender mainstreaming	Satisfactory involvement and participation of women seen in project activities	S
2	• Results- based management	Results-based approach adopted and proper monitoring of project progress done during PSC meetings involving all key stakeholders.	S
3	• Monitoring and reporting	Adequate budgeted M&E plan available. Proper project monitoring and tracking of results done using SMART proposed in the PRF. All PSC meetings held and relevant reports (e.g. PIRs) submitted timely.	S
D	**Performance of partners**		HS
1	• UNIDO	Role of UNIDO crucial for project to achieve success. Timely and critical actions taken, and technical back-stopping provided through high quality international and national experts.	HS
2	• National counterparts	MOEF, the NEA, fully played its role. It coordinated activities and fully supported project implementation through the PMU and the technical working group.	HS
3	• Private partners	Strong commitment showed PPLI and very good engagement of PCB owners	HS
4	• Donor	GEF funds available	S
F	**Overall assessment**		S

4. Conclusions and Recommendations

4.1 Conclusions

55. The objectives of the project were to introduce and implement a PCB management system to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment and to dispose of at least 3,000 tons of PCB wastes and PCB-containing equipment in an environmentally sound manner maximizing opportunities for public-private partnership.

56. This highly relevant project was slow to start due to a number challenges faced during the initial stages such as the late signature of the project agreement by the national counterparts and the merging of the two Minitries of Environment and Forestry. However, with the strong support of the MOEF, the NEA, and adequate guidance from the UNIDO PM, the dedicated project team was able to put the project on the right track. Although implementation was delayed by five years, most of the stated objectives have been successfully achieved. The ministerial regulation for the ESM of PCBs was developed and adopted by the Government of Indonesia. Capacities of government officers at both national and provincial levels, of PCB owners and laboratories have been built for the identification and sound management until final disposal of PCBs. The project also contributed for the establishment of a non-combustion facility for the treatment of low level PCB-contaminated equipment. PPLI, which runs a state of the art hazardous waste complex, was selected as the operating entity of the PCB treatment facility. Due to late procurement and the Covid19 pandemic, the dechlorination technology could only be commissioned in March 2022. Due to a number of technical challenges, the treatment facility was operational only in March 2023, and the target of treating 3000 tons of PCB-contaminated equipment could not be achieved.

57. The likelihood of sustainability of project outcomes is considered likely as no risks that could jeopardize the future flow of benefits have been identified. The impact of the project is also considered likely as the long term outcomes proposed in the theory of change are seen to be emerging and the associated assumptions have been verified to hold.

4.2 Recommendations

58. For continued relevance, sustainability of the project results and impact, the following recommendations are addressed to various key stakeholders of the project.

#	Recommendations	Management Actions	Responsible Institution	Target Date	
1.	The project activities such as the inventories were carried out mainly in the two islands Java and Sumatra. Given that a Phase 2 project is being developed, it is recommended to replicate and scale up the project results to cover all the regions across the country.	Capacity building for the ESM of PCBs and awareness raising activities will be part of the main activities of the Phase 2 project.	UNIDO & MOEF	31/12/2028	

2.	The incentive mechanisms developed by the project were not adopted by the government. The authorities rather rely on the provisions stipulated under MR P29/2020 for PCB owners to carry out the identification of PCB-contaminated equipment and pay for their final sound disposal. While the big companies have the necessary financial resources undertake these activities, the smaller ones may not have such capacities. It is recommended that the national authorities put in place a financial mechanism to support these small owners and others, which may require such assistance	The PCB Phase 2 project is aimed at introducing fiscal and non-fiscal incentives which could be adopted by the GoI,	MOEF	31/12/2028	
3.	PPLI, the operating entity reported that the PCB owners were very slow to identify and send their contaminated equipment for treatment. While the reasons are not known, it is however recommended that the authorities put in place a strategy to ensure that PCB owners report on their equipment and have the contaminated ones treated.	The authorities should come up with a strategy such as setting deadlines for PCB owners to report on their equipment through the PROPER tool, and also to ensure compliance with the PCB regulations. Furthermore, it is recommended that the treatment cost should be reasonable, it should be lower than the rate proposed for exportation and disposal abroad.	MOEF	31/12/2025	
4.	The project created a website to promote and share the project results and lessons. However, the evaluation could not accesss the website: https://pcbsfreeindonesia.menlhk.go.id/ It is recommended that actions are taken to reactivate the website.	The website could be linked to the MoEF websited.	MOEF	31/12/2024	

5. Lessons Learned

59. The project has been successfully completed and the following two lessons stemmed out.

60. Lesson 1 – The project successfully developed ministerial regulations for the ESM of PCBs, MR No. P29/2020, which the government adopted in December 2020. Relying on the provisions stipulated in these regulatios is not sufficient and deterring enough for owners to identify and dispose of their PCBs voluntarily. It was observed the slow pace

at which the PCB owners send their contaminated equipment for treatment. The regulations should be enforced and incentive mechanisms should be proposed to encourage and ensure that PCB-contaminated are soundly disposed of.

61. Lesson 2 – Based on the lessons learned during a previously implemented PCB project, UNIDO in consultation with the national counterparts came up with a set of criteria that contributed to select the right candidate to be the operating entity of the treatment facility.

6. Annexes

a. Annex 1: Evaluation Terms of Reference

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE

Independent terminal evaluation of project

Introduction of an Environmentally Sound Management and Disposal System for PCB wastes and PCB-contaminated Equipment- in Indonesia

UNIDO ID: 130249
GEF Project ID: 4446

August 2023

Contents

PROJECT BACKGROUND AND CONTEXT

Project factsheet[28]

Project title	Introduction of an Environmentally Sound Management and Disposal System for PCB wastes and PCB-contaminated Equipment- in Indonesia
UNIDO ID	130249
GEF Project ID	4446
Country	Indonesia
Project donor	GEF
Project approval date/GEF CEO endorsement date	25/07/2013
Actual project start date (First PAD issuance date)	01/11/2013
Planned project completion date (as indicated in project document/or GEF CEO endorsement document)	31/12/2018
Actual project completion date (as indicated in UNIDO ERP system)	31/09/2023
Project duration (year): **Planned:** **Actual:**	 5 10
GEF Focal Areas and Operational Programme	POPs
Implementing agency(ies)	UNIDO
Government coordinating agency	Ministry of Environment of the Republic Of Indonesia
Donor funding	USD 6,000,000
UNIDO input (in kind, USD)	USD 250,000
Co-financing at CEO Endorsement, as applicable	USD 24,372,130
Total project cost (USD), excluding support costs	USD 30,372,130
Planned terminal evaluation date	Sept-Nov 2023

(Source: Project document, UNIDO ERP system)

1. Project context

The Republic of Indonesia signed the Stockholm Convention on POPs on 23 May 2001 and ratified it on 11 June 2009, while the National Implementation Plan (NIP) was submitted on April 2010. The NIP has established the baseline situation in terms of POPs in the country including preliminary inventories of POPs chemicals and respective action plans and strategies for the fulfillment of the country's obligations under the Stockholm Convention.

In this regard, polychlorinated biphenyls (PCBs) are widely used in various industrial applications in Indonesia, such as in electrical equipment, hydraulic systems, and heat transfer systems. As a result, there are significant amounts of PCBs in the environment, including in soil, water, and sediments.

[28] Data to be validated by the Consultant

The presence of PCBs in the environment poses a serious threat to human health and the ecosystem. PCBs are toxic chemicals that can cause cancer, damage the immune system, and affect the reproductive and nervous systems.
The existing legal and institutional framework for the management of PCBs in Indonesia is weak and fragmented. There is no comprehensive regulation that addresses the entire life cycle of PCBs, including their production, use, storage, transport, and disposal. Furthermore, there is a lack of awareness and capacity among stakeholders, including government officials, private sector actors, and local communities, on the issue of PCBs and their management.
The GEF-funded, UNIDO-implemented, project *Introduction of an Environmentally Sound Management and Disposal System for PCB wastes and PCB-contaminated Equipment- in Indonesia* aims at overcoming the above-mentioned issues by strengthening the legal and institutional framework for the environmentally sound management of PCBs, developing and implementing a pilot project for the environmentally sound management of PCBs in selected sites, and promoting public awareness and knowledge sharing on the issue of PCBs.

2. Project objective and expected outcomes

The main objective of the project is to assist the country in establishing environmentally sound management (ESM) of PCBs focusing on the most industrialized provinces and a pilot site, which allow the country to disseminate and replicate best practices for PCBs management and disposal. ESM of PCB includes the identification, collection, packaging, registration and labeling system at the respective factory/industry, transport, safe interim storage and disposal of PCB-containing equipment and waste.
The overall objective of the project is to eliminate the use and releases of PCBs in the environment through the introduction of ESM and to dispose of at least 3,000 tons of PCB wastes, PCB-contaminated oil and equipment.
Component 1 focuses on the review, formulation and enforcement of policies or regulation directly relevant to PCB management in the country.
In particular, the project assists the country in the formulation of the following: (i) Policies on investment, tax, and custom to encourage the use of imported alternative safe technologies; (ii) Policy to put code/label on equipment free of PCBs and those containing PCBs; (iii) Policies for inspecting and monitoring PCB disposal and; (iv) Policies to restrict expansion of industries not implementing BAT/BEP in reducing releases of POP ; (v) Guidelines on ESM and disposal of PCB wastes and decontamination of PCB-contaminated oil and equipment
Component 2 focuses on capacity building efforts, with the goal of addressing the needs of government officials at central and provincial levels as well as managers and workers at state-owned (PLN-electricity company, PERTAMINA-oil company, etc) and private entities.
The focus in on the following training activities:
(i) intensive training on PCB management are provided by international experts to a core group of government staff at the central and provincial levels to ensure that the health and environmental impacts of PCBs, how to identify PCB and how to formulate policies and code of practice and the adoption of such is learnt; (ii) Training on inventory and analysis are provided to PUSARPEDAL staff and the inventory team for the conduct of proper sampling, analysis, inventory and data analysis; (iii) A comprehensive training on the whole cycle of ESM of PCBs is disseminated among PCB owners including the conduct of inventory, proper registration, labeling and storage of PCB wastes and PCB contaminated equipment.
Component 3 addresses activities to be undertaken to demonstrate environmentally sound management, disposal of PCBs. ESM of PCBs is demonstrated through proper collection, packaging, labelling, registration, transportation, storage and disposal of targeted PCB wastes, and PCB contaminated equipment.
Component 4 addresses public awareness raising and involvement of interested NGOs and other organizations. Provinces not directly benefiting from the project investment activities are invited in all

relevant capacity building, training and information dissemination in order to ensure replication of the outcomes in the whole country.

3. Project implementation arrangements

The structure of project implementation is provided in the figure below. UNIDO is the GEF Implementing Agency (IA) for the project. A project officer is appointed in UNIDO to oversee the implementation of the project, assisted by a support staff and supervised by a senior professional staff engaged in the management and coordination of UNIDO's Stockholm Convention Programme.

The UNIDO Country Office in Indonesia also plays a significant role in the implementation and monitoring of the project. A National Project Officer is appointed to undertake full coordination with the Project management Unit (PMU) in the Ministry. UNIDO country-level monitoring is provided as part of the in-kind contribution of the organization to the project.

The Ministry of Environment (MoE) of the Republic of Indonesia act as the executing partner for the project. MoE is the nodal agency for planning, promoting and coordinating the environmental programmes including chemicals management in Indonesia. The MoE is mandated to implement activities related to the obligations of the country to the Stockholm Convention.

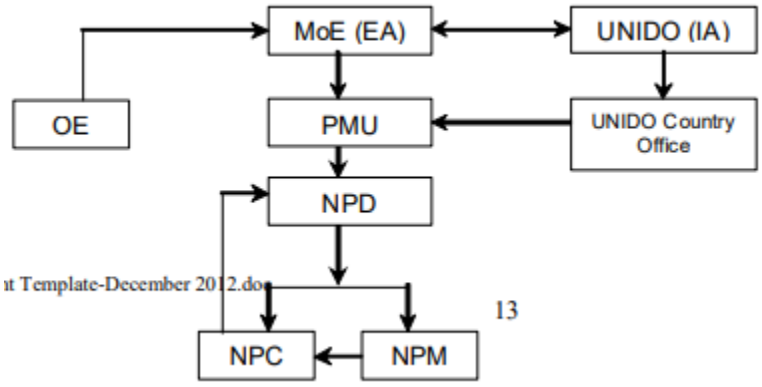
One of the important issue to be addressed during the earlier stage of project implementation is the selection of the operating entity (OE) of the technology that will be delivered by the project and will execute the main component of the project which is the ESM and disposal of PCBs.

A Project Management Unit (PMU) is established within the Ministry.

A National Project Director (NPD) from the MoE is appointed and chairs the Project Steering Committee.

A National Project Coordinator (NPC), also from the Ministry, is assigned to oversee the activities of the project with the National Project Manager (NPM) who will be recruited to manage and implement the day-to-day tasks required by the project. International and national experts will be recruited based on project requirement.

Relevant stakeholders will comprise the Project Steering Committee (PSC) and Technical Working Group (TWG) of the project. MOE leads the PSC and it is composed of a representative from MEMR/MoI, representative from the operating entity, representative of major PCB owners, representative from NGO or civil society, the NPC, the NPM and the UNIDO Project manager. The TWG comprises of a representative from the Ministry, the operating entity, technology provided, the NPC and the NPM.



4. Budget information

Table 1. Financing plan summary - Outcome breakdown

Project outcomes/components	Donor (GEF/other) ($)	Co-Financing ($)	Total ($)
1. Policy and Regulatory Framework	150,000	600,000	750,000

Project outcomes/components	Donor (GEF/other) ($)	Co-Financing ($)	Total ($)
2. Institutional capacity building and development	570,000	2,400,000	2,970,000
3. ESM of PCBs	4,700,000	16,972,130	21,672,130
4. Public awareness raising and advocacy campaigns	150,000	1,800,000	1,950,000
5. M&E	130,000	800,000	930,000
Total ($)	**5,700,000**	**22,572,130**	**28,272,130**

Source: Project document

Table 2. Co-Financing source breakdown

Name of Co-financier *(source)*	In-kind	Cash	Total Amount ($)
Ministry of Environment *(National Government)*	2,590,000	1,000,000	3,590,000
Agency for the Assessment and Application of Technology (BPPT) *(National Government)*	762,542	154,830	917,372
PT PLN (Persero) Research and Development Unit *(National Government)*		17,405,277	17,405,277
PT Krakatau Daya Listik (private sector)	1,063,410	903,123	1,966,533
PT Freeport Indonesia		56,500	56,500
PT South Pacific Viscose		21,408	21,408
UNIDO (Implementing Agency)	250,000	165,000	415,000
Total Co-financing ($)	**4,665,952**	**19,706,138**	**24,372,090**

Source : Project document

Table 3. UNIDO budget allocation and expenditure by budget line

Budget line	Items by budget line	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total expenditure (at completion)	
													(USD)	%
2100	Contractual Services		76,111	540,648	112,929	3,971	2,196,767	96,241	546,063	160,284	118,319	34,541	**3,885,874**	*69.1*
3500	International meetings			217	51,315	-101	10,231	13,937		-1,394	-670		**73,535**	*0.1*
4500	Equipment					326,451	1,688		397,934	-2,964	315	22	**723,446**	*12.8*
1500	Local travel			164	15,011	58,392	-6,008	14,906	847	-1,695	9,301	18,011	**108,929**	*1.9*
1700	Nat. Consult./ Staff		14,112	64,339	53,402	42,193	47,408	55,458	50,741	86,633	74,014	58,323	**546,623**	*9.7*
5100	Other Direct Costs		-158	4,876	4,310	1,588	2,783	6,596	4,671	48,399	38,880	18,962	**130,907**	*2.5*

4300	Premises								419	289			**708**	*0.1*
1100	Staff & Intern Consultants	8,604		12,922	39,858	33,417	16,590	2,666	5,490	5,471	14,573	8,111	**147,702**	*2.8*
300	Train/Fellowship/ Study	4,494	-183	4,892	18,227	7,772	7,761	3,665	8,335	-2,121	4,737	1,466	**59,045**	*1*
Total		**13,098**	**89,882**	**630,073**	**297,068**	**475,498**	**2,279,238**	**195,488**	**1,014,500**	**292,902**	**259,469**	**141,459**	**5,676,769**	**100%**

Source: Project document and UNIDO Project Management ERP database as of 21 July 2023

Scope and purpose of the evaluation

The purpose of the evaluation is to independently assess the project to help UNIDO improve performance and results of ongoing and future programmes and projects. The terminal evaluation (TE) will cover the whole duration of the project from its starting date in November 2013 to the estimated completion date in September 2023.

The evaluation has two specific objectives:

(ii) Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability, coherence, and progress to impact; and

(iii) Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

Evaluation approach and methodology

The TE will be conducted in accordance with the UNIDO Evaluation Policy[29], the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle[30], and UNIDO Evaluation Manual. In addition, the GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations, the GEF Monitoring and Evaluation Policy and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies will be applied. The evaluation will be carried out as an independent in-depth exercise using a participatory approach whereby all key parties associated with the project will be informed and consulted throughout the process. The evaluation team leader will liaise with the UNIDO Independent Evaluation Unit (EIO/IEU) on the conduct of the evaluation and methodological issues.

The evaluation will use a theory of change approach[31] and mixed methods to collect data and information from a range of sources and informants. It will pay attention to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

The theory of change will depict the causal and transformational pathways from project outputs to outcomes and longer-term impacts. It also identifies the drivers and barriers to achieving results. Learning from this analysis will be useful for the design of future projects so that the management team can effectively use the theory of change to manage the project based on results.

[29] UNIDO. (2021). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/2021/11)

[30] UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

[31] For more information on Theory of Change, please see chapter 3.4 of UNIDO Evaluation Manual

1. Data collection methods

Following are the main instruments for data collection:

(a) **Desk and literature review** of documents related to the project, including but not limited to:
- The original project document, monitoring reports (such as progress and financial reports, mid-term review report, technical reports, back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.
- Notes from the meetings of committees involved in the project.

(b) **Stakeholder consultations** will be conducted through structured and semi-structured interviews and focus group discussions. Key stakeholders to be interviewed include:
- UNIDO Management and staff involved in the project; and
- Representatives of donors, counterparts, and other stakeholders.

(c) **Field visit** to project sites in Indonesia:
- On-site observation of results achieved by the project, including interviews of actual and potential project beneficiaries.
- Interviews with the relevant UN Resident Coordinator and UNIDO Country offices' representative to the extent that he/she was involved in the project and the project's management members and the various national [and sub-regional] authorities dealing with project activities as necessary.

(d) **Online data collection** methods will be used to the extent possible.

2. Key evaluation questions and criteria

The key evaluation questions (corresponding to the six OECD/DAC criteria) are the following:

(i) Relevance: Is the intervention doing the right things? To what extent do the project/programme's objectives respond to beneficiaries, global, country, and partner/institution needs, policies, and priorities, and continue to do so if circumstances change?

(ii) Coherence: How well does the intervention fit? How compatible is the project/programme with other interventions in the country, sector or institution? How compatible is the intervention with the ongoing UNIDO portfolio?

(iii) Effectiveness: Is the project/programme achieving its objectives?

(iv) Efficiency: How well are resources being used? Has the project/programme delivered results in an economic and timely manner?

(v) Impact: What difference does the intervention make? To what extent has the project/programme generated significant positive or negative, intended or unintended, higher-level effects? Has the project/programme had transformative effects?

(vi) Sustainability: Will the benefits last? To what extent will the net benefits of the project/programme continue, or are likely to continue?

(vii) Gender: Has the intervention proved to be useful in terms of gender mainstreaming?

The table below provides the key evaluation criteria to be assessed by the evaluation. The detailed questions to assess each evaluation criterion are in annex 2 of UNIDO Evaluation Manual.

Table 5. Project evaluation criteria

#	Evaluation criteria	Mandatory rating
A	**Progress to Impact**	**Yes**
B	**Project design**	**Yes**
1	• Overall design	Yes

2	• Project results framework/log frame	Yes
C	**Project performance and progress towards results**	Yes
1	• Relevance	Yes
2	• Coherence	Yes
3	• Effectiveness	Yes
4	• Efficiency	Yes
5	• Sustainability of benefits	Yes
D	**Gender mainstreaming**	Yes
E	**Project implementation management**	Yes
1	• Results-based management (RBM)	Yes
2	• Monitoring and Evaluation, Reporting	Yes
F	**Performance of partners**	
1	• UNIDO	Yes
2	• National counterparts	Yes
3	• Implementing partner (if applicable)	Yes
4	• Donor	Yes
G	**Environmental and Social Safeguards (ESS), Disability and Human Rights**	Yes
1	• Environmental Safeguards	Yes
2	• Social Safeguards, Disability and Human Rights	Yes
H	**Overall Assessment**	Yes

Other assessments required by the GEF for GEF-funded projects, for non GEF projects these topics should be covered as applicable:

The terminal evaluation will assess the following topics, for which ***ratings are not required***:

a. **Need for follow-up**: e.g. in instances of financial mismanagement, unintended negative impacts or risks.

b. **Materialization of co-financing**: e.g. the extent to which the expected co-financing materialized, whether co-financing was administered by the project management or by some other organization; whether and how shortfall or excess in co-financing affected project results. At the terminal evaluation point, the Project Manager will update table 3 on co-financing and add two more columns to submit to the evaluation team: 1) Amount of co-financing materialized at mid-term review (MTR); and 2) Amount of co-financing materialized at terminal evaluation (TE). The evaluation team has the responsibility to validate and verify the co-financing amount materialized during the evaluation process. This table MUST BE included in the terminal evaluation report, as per requirement by the GEF.

c. **Environmental and Social Safeguards**[32]: appropriate environmental and social safeguards were addressed in the project's design and implementation, e.g. preventive or mitigation measures for any foreseeable adverse effects and/or harm to environment or to any stakeholder.

[32] Refer to GEF/C.41/10/Rev.1 available at: http://www.thegef.org/sites/default/files/council-meetingdocuments/ C.41.10.Rev_1.Policy_on_Environmental_and_Social_Safeguards.Final%20of%20Nov%2018.pdf

d. **Updated Monitoring and Assessment tool of core-indicators:** The project management team will submit to the evaluation team the up-to-date core-indicators or tracking tool (for older projects) whereby all the information on the project results and benefits promised at approval and actually achieved at completion point must be presented. The evaluation team has the responsibility to validate and verify updated core-indicators during the evaluation process. This table MUST BE included in the terminal evaluation report, as per requirement by the GEF.

e. **Knowledge Management Approach:** Information on the project's completed Knowledge Management Approach that was approved at CEO Endorsement/Approval.

3. Rating system

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Unit uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory) as per the table below.

Table 6. Project rating criteria

Score		Definition
6	Highly satisfactory	Level of achievement presents no shortcomings (90% - 100% achievement rate of planned expectations and targets).
5	Satisfactory	Level of achievement presents minor shortcomings (70% - 89% achievement rate of planned expectations and targets).
4	Moderately satisfactory	Level of achievement presents moderate shortcomings (50% - 69% achievement rate of planned expectations and targets).
3	Moderately unsatisfactory	Level of achievement presents some significant shortcomings (30% - 49% achievement rate of planned expectations and targets).
2	Unsatisfactory	Level of achievement presents major shortcomings (10% - 29% achievement rate of planned expectations and targets).
1	Highly unsatisfactory	Level of achievement presents severe shortcomings (0% - 9% achievement rate of planned expectations and targets).

Evaluation process

The evaluation will be conducted from September 2023 to November 2023. The evaluation will be implemented in five phases, which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

1) Inception phase: The evaluation team will prepare the inception report providing details on the evaluation methodology and include an evaluation matrix with specific issues for the evaluation to

address; the specific site visits will be determined during the inception phase, taking into consideration the findings and recommendations of the mid-term review.
2) Desk review and data analysis;
3) Interviews, survey and literature review;
4) Country visits (whenever possible) and debriefing to key relevant stakeholders in the field;
5) Data analysis, report writing and debriefing to UNIDO staff at the Headquarters; and
6) Final report issuance and distribution with management response sheet, and publication of the final evaluation report in UNIDO website.

Time schedule and deliverables

The evaluation is scheduled to take place from September 2023 to November 2023. The evaluation field mission is tentatively planned for October 2023. At the end of the field mission, the evaluation team will present the preliminary findings for key relevant stakeholders involved in this project in the country. The tentative timelines are provided in the table below.

After the evaluation field mission, the evaluation team leader will arrange a virtual debriefing and presentation of the preliminary findings of the terminal evaluation with UNIDO Headquarters. The draft TE report will be submitted around 4 weeks after the end of the mission. The draft TE report is to be shared with the UNIDO Project Manager (PM), UNIDO Independent Evaluation Unit, the UNIDO GEF Coordinator and GEF OFP and other stakeholders for comments. The Evaluation team leader is expected to revise the draft TE report based on the comments received, edit the language and submit the final version of the TE report in accordance with UNIDO EIO/IEU standards.

Table 7. Tentative timelines

Timelines	Tasks
Beginning of September 2023	Desk review and writing of inception report
September 2023	Online briefing with UNIDO project manager and the project team based in Vienna.
Beginning of October 2023	Field visit to Indonesia – sites to be identified at Inception stage
October 2023	Virtual debriefing Preparation of first draft evaluation report
November 2023	Internal peer review of the report by UNIDO's Independent Evaluation Unit and other stakeholder comments to draft evaluation report
End of November 2023	Final evaluation report

II. Evaluation team composition

The evaluation team will be composed of one international evaluation consultant acting as the team leader and one national evaluation consultant. The evaluation team members will possess a mixed skill set and experience including evaluation, relevant technical expertise, social and environmental safeguards and gender. Both consultants will be contracted by UNIDO.

The tasks of each team member are specified in the job descriptions annexed to these terms of reference. The evaluation team is required to provide information relevant for follow-up studies, including terminal evaluation verification on request to the GEF partnership up to three years after completion of the terminal evaluation.

According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the project under evaluation.
The UNIDO Project Manager and the project management team in Indonesia will support the evaluation team. The UNIDO GEF Coordinator and GEF Operational Focal Point (OFP) will be briefed on the evaluation and provide support to its conduct. GEF OFP(s) will, where applicable and feasible, also be briefed and debriefed at the start and end of the evaluation mission.
An evaluation manager from UNIDO Independent Evaluation Unit will provide technical backstopping to the evaluation team and ensure the quality of the evaluation. The UNIDO Project Manager and national project teams will act as resource persons and provide support to the evaluation team and the evaluation manager.

Reporting

Inception report

These Terms of Reference (TOR) provide some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the Team Leader will prepare, in collaboration with the team member, a short inception report that will operationalize the TOR relating to the evaluation questions and provide information on what type and how the evidence will be collected (methodology). It will be discussed with and approved by the responsible UNIDO Evaluation Manager.
The Inception Report will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework ("evaluation matrix"); Unit of work between the evaluation team members; field mission plan, including places to be visited, people to be interviewed and possible surveys to be conducted; and a debriefing and reporting timetable[33].

Evaluation report format and review procedures

The draft report will be delivered to UNIDO Independent Evaluation Unit (with a suggested report outline) and circulated to UNIDO staff and key stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report will be sent to UNIDO's Independent Evaluation Unit for collation and onward transmission to the evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.
The evaluation team will present its preliminary findings to the local stakeholders at the end of the field visit and take into account their feedback in preparing the evaluation report. A presentation of preliminary findings will take place at UNIDO HQ afterwards.
The evaluation report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.
Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given by UNIDO Independent Evaluation Unit.

[33] The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by UNIDO Independent Evaluation Unit.

Quality assurance

All UNIDO evaluations are subject to quality assessments by UNIDO Independent Evaluation Unit. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO Independent Evaluation Unit, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO's Independent Evaluation Unit).

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO Independent Evaluation Unit should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO's evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO Independent Evaluation Unit, which will submit the final report to the GEF Evaluation Office and circulate it within UNIDO together with a management response sheet.

Annex 1: Project Logical Framework

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Project Objectives: (a) Introduce and implement a PCB-management system to reduce and/or eliminate releases from PCB wastes stockpiles and PCB-containing equipment (b) dispose of at least 3,000 tonnes of PCB wastes and PC-containing equipment in ESM	Tons of PCBs disposed	PCB disposal not yet undertaken	Disposal of NIP PCB inventory of around 20,000 tons	PCB disposal reports	The Government of Indonesia will commit funds to establish PCB management system in the country and PCB-owners to dispose of the PCB stockpiles.
Outcome 1. Legislation and policies on PCB management, including incentive mechanism, adopted and endorsed to meet relevant obligations under the Convention	A set of regulatory instruments compliant with Stockholm requirements on PCBs (Annex A, part II) adopted. Incentive scheme for the project implemented.	In Indonesia, regulation on PCBs is limited to generic provisions in the HazWaste legislation. No incentive mechanism for promoting disposal of PCBs has been ever implemented.	A new set of guidance/guidelines particularly focusing on PCBs drafted, implemented and endorsed.	Copies of officially adopted regulations	The government of Indonesia is committed to timely adopt one or more regulatory tools which will obligate and promote stakeholders at managing PCB in an environmental sound manner.
Output 1.1: Policy and regulatory framework reviewed and formulated	Set of regulatory instruments compliant with Stockholm requirements on PCBs (Annex A, part II) adopted.	Currently, to implement the Convention, Indonesia has banned 10 POP chemicals through GR No. 74/2001. Except for the banning of PCB use, this legislation does however not contain specific provision on PCBs management and disposal. .	Regulatory instruments, like a framework regulation on PCBs or an official guidance on PCB management is drafted, submitted to the relevant legislative bodies, and officially adopted.	Meeting reports, copy of the officially adopted regulatory instrument.	Agreement among stakeholders on the content of the regulatory tool will be reached rapidly and effectively.
Output 1.2: Economic	An incentive mechanism	No incentive mechanism	An incentive mechanism,	Market analysis based on	An incentive mechanism

and market-based incentives proposed for disposal of PCB-containing equipment and wastes	for supporting the timely ESM disposal of PCBs equipment and waste agreed and implemented.	for ESM management of PCBs in place.	based on a sound market analysis and subjected to a financial and sustainability assessment, is adopted in due time to support PCBs disposal within project timeframe.	cost of PCBs disposal services and PCB inventory outcome; meeting reports; officially adopted incentive scheme.	is the proper instrument for catalyzing commitment of PCB owners in reporting their PCBs contaminated equipment and disposing these in an environmentally safe manner.
Outcome 2: Strengthened institutional capacities on PCB management at central government level and at provincial level in selected provinces	Number of staff from governmental institutions are provided with the necessary skills to carry out their technical and administrative tasks related to the implementation of Stockholm Convention requirements on PCBs.	Currently, capacity of governmental institution on properly implementing the provisions of the Stockholm Convention on PCBs is scarce and mostly centralized.	At least 20 core staff (focal points) covering local governments at provincial level in Java Island intensively trained to implement PCB management awareness and training to other relevant stakeholders. At least one government laboratory accredited to perform PCB sampling and analysis		The project fully supported by the MOE, MOI, MEMR and MOMT
Output 2.1: Capacity on PCB management built/strengthened among government staff in the central and provincial level	Capacity building needs for governmental institutions are assessed. Number of training addressing identified needs is designed and carried out successfully.	PCB inventory team was established during the PPG, this team can serve as initial PCB working group to be trained on ESM.	A PCB working group of at least 10 selected people will be trained on all the technical, regulatory, financial, health and safety aspect of Environmentally Safe Management of PCBs enabling them to conduct training to other relevant stakeholders.	Report on training effectiveness properly measured (pre and post training tests, feedback from the trainees) and documented. Training material translated in Indonesian and made available for future training courses.	A sufficient number of people from governmental institutions is willing to attend the training. A skilled working group represents one of the key resource for ensuring the sustainability of ESM of PCBs. Availability of skilled persons trained in the early stage of the project is crucial for the

					successful implementation of the project.
Output 2.2: Capacity built/strengthened to conduct extended inventory on PCBs in selected provinces covering at least Java Island	Number of staff trained to conduct proper inventory Availability of a PCB inventory covering at least all the provinces of Java Island, based on site survey, questionnaires and sampling. Availability of a PCB management plan drafted and agreed by relevant stakeholders.	Limited number of staff are able to conduct inventory of PCBs. Data on PCBs contaminated equipment are not sufficient to establish a sound PCB management plan, which indeed has never been implemented. Efforts carried out in the course of the PPG in updating the inventory of PCB in Indonesia suggest that up to 40% of the transformers tested may have a PCB content higher than 50 ppm.	PCB inventory team established At least one laboratory accredited to analyze PCBs A PCB inventory (including labelling and registration of identified PCB equipment in the project PCB database) carried out, covering at least all the provinces of Java Island. A PCB management plan for the project, based on inventory outcome and priority considerations, which can be used as a model for the country PCB management plan, drafted and agreed among relevant stakeholders.	Training report PCB inventory report. Site visits reports. Sampling and analysis reports. Database of PCBs contaminated equipment containing serial numbers of identified PCB equipment. PCB management plan	The PCBs working group, together with the PCB inventory team, will carried out the updating of the PCB inventory in a timely and effective manner. An inventory database where all identified PCBs equipment are registered is a crucial tool for securing PCBs equipment to be disposed within project timeframe. A PCBs management plan, based on an extensive and accurate data set and on priority considerations, and agreed among stakeholders, is the proper instrument for planning the ESM of PCBs within project timeframe. The experience gathered in drafting and implementing the PCBs management plan will ensure replicability and sustainability after project end.
Outcome 3: ESM of PCBs through proper collection, packaging,	Tons of PCBs and PCB-containing equipment identified and registered		At least 3000 metric tons of PCB equipment identified, labeled,		

registration, labelling, transportation, storage and disposal of targeted PCBs wastes applied.	in the project database, committed for disposal (equipment weight) Amount of PCBs equipment treated (weight of PCB containing equipment)		registered in the project database, committed and disposed in compliance with SC requirement and guidelines.		
Output 3.1: Operating entity selected	TOR for the selection of an operating entity fulfilling eligible criteria.	Currently PCB is disposed by PCB owners without significant coordination. No operating entity in charge of ESM of PCBs existing.	Institutional capacity of candidate entities for PCB handling and disposal assessed. One operating entity for PCB handling and disposal selected. Technical and analytical capacity of the operating entity upgraded as needed.	Eligibility criteria for the operating entity. Operating entity selection report. Training reports (pre and post training evaluation tests, list of attendees, training material)	In Indonesia there is at least an operating entity that after proper capacity building can fulfil eligibility criteria. The early identification and strengthening of the operating entity is crucial for the successful implementation of the project and will ensure sustainability of project activities after project end.
Output 3.2: Pilot ESM system for PCBs established on identified PCB owners sites	The overall procedure for PCB equipment identification, labeling, tracking and transportation established with proper technical code of practices and implemented.	Although in Indonesia rules on the handling and disposal of hazardous waste exist, these do not cover PCBs containing equipment.	Code of practices for packaging, transportation, labeling, tracking, temporary storage and disposal of PCBs drafted, translated in English and Indonesian, and approved. Operating entity properly equipped and licensed for carrying out packaging, transportation, labeling, tracking, temporary storage and disposal.	Code of practices documents. Operating entity license. List of equipment owned by the operating entity (laboratories, trucks, storage and disposal facilities) Site visit to the operating entity facilities.	The operating entity is willing to operate in accordance with the codes of practice which will be developed under the project. The operating entity will maintain its commitment and its capability for the whole duration of the project. The operating entity will ensure that new operators that would possibly recruited at a second stage will be properly

					trained.
Output 3.3: PCB treatment facility established or functional	Suitable disposal technology for the ESM disposal of PCBs equipment/waste tested and permitted, for an overall disposal capacity suitable to satisfy or exceed project needs. Amount of PCBs equipment and waste successfully disposed.	There is not enough disposal capacity in the country to satisfy the need of PCBs disposal in compliance with the SC BAT/BEP criteria and deadline. There is currently not enough disposal capacity for disposing the 3000 tons of PCB equipment committed for disposal under the project.	One or more suitable disposal facilities, compliant with the SC BAT/BEP criteria, for a capacity suitable to fulfil or exceed project needs, established, tested and permitted. 3000 tons of PCBs equipment or waste disposed by means of such facility.	Technical specifications of the PCBs disposal facility. Bidding documents and reports. Proof of Performance test report of the PCB disposal facility. Hazardous waste manifests of the disposed PCBs waste. Project PCB tracking sheets (certificates of delivery to the facility and successful disposal)	A suitable and cost effective technology will be identified. A disposal facility will be procured, successfully tested and permitted within project timeframe (within 36 months from project implementation) The disposal facility will work reliably maintaining the required disposal capacity to treat 3000 tons of PCBs within project timeframe. PCB owners will maintain their commitment to dispose their PCBs under the project. The PCBs equipment committed for disposal reaches or exceeds the amount of 3000 tons.
Outcome 4: Increased public awareness on issues concerning PCBs	Number of relevant public awareness workshops held. Number of stakeholders aware of the risks associated with PCBs and of the benefits of managing them in an Environmental Sound Manner.	The awareness of the PCBs issue is very limited even among the main PCB owners.	At least 3 Awareness Workshops held on PCB issues. At least 50 institutions, PCB owners, public institutions scientific institutions and NGOs with increased awareness on PCB management.	Awareness raising workshops reports for Central and Local Government level	

Output 4.1: Stakeholder engagement including NGOs and civil society established	Number of stakeholders targeted and participating in raising awareness initiatives.	Identification of target stakeholders for raising awareness on PCBs issues never carried out.	At least 2 universities, one NGO, 2 public institutions, 2 waste management companies identified and participating in raising awareness initiatives.	Awareness raising plan and strategy report. List of targeted stakeholders contacted. Reports / recording of raising awareness initiatives. Questionnaire surveys carried out before and after raising awareness initiatives.	Identification of the proper target, which is not necessarily the public at large, is crucial for an effective awareness raising on PCB. Target stakeholders identified are willing to participate in raising awareness initiatives. The level of awareness is measurable by means of properly conducted questionnaire surveys.
Output 4.2: Development and implementation of training and awareness programs	Awareness raising material. Number of awareness raising events held. Outcome of questionnaire surveys.	No awareness raising material on PCBs is available in the country, either for the general public or for specific stakeholders.	Awareness raising material specifically developed for: Universities Operators of PCBs owners (i.e. utilities, large factories), public institutions and NGOs	Dissemination materials specifically prepared for each target group identified.	A suitable expert on communication can be identified who can properly interact with technical experts to develop effective and appealing awareness raising materials.

Annex 2: Job descriptions

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	Senior evaluation consultant, team leader
Main Duty Station and Location:	Home-based, Indonesia
Missions:	Missions to Vienna, Austria and Indonesia
Start of Contract (EOD):	01/09/2023
End of Contract (COB):	30/11/2023
Number of Working Days:	32 working days spread over the above mentioned period

1. ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Unit (EIO/IEU) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides evidence-based analysis and assessment on result and practices that feed into the programmatic and strategic decision-making processes. Independent evaluations provide credible, reliable and useful assessment that enables the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. EIO/IEU is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

2. PROJECT CONTEXT

Detailed background information of the project can be found the terms of reference (TOR) for the terminal evaluation.
The international evaluation consultant/team leader will evaluate the project in accordance with the evaluation-related terms of reference (TOR). S/he will perform, inter alia, the following main tasks:

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
1. Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data). Define technical issues and questions to be addressed by the national technical evaluator prior to the field visit. Determine key data to collect in the field and adjust the key data collection instrument if needed. In coordination with the project manager, the project management team and the national technical evaluator, determine the suitable	• Adjusted table of evaluation questions, depending on country specific context; • Draft list of stakeholders to interview during the field missions. • Identify issues and questions to be addressed by the local technical expert	4 days	Home-based

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
sites to be visited and stakeholders to be interviewed.			
2. Prepare an inception report, which streamlines the specific questions to address the key issues in the TOR, specific methods that will be used and data to collect in the field visits, confirm the evaluation methodology, draft theory of change, and tentative agenda for fieldwork. Provide guidance to the national evaluator to prepare initial draft of output analysis and review technical inputs prepared by national evaluator, prior to field mission.	• Draft theory of change and Evaluation framework to submit to the Evaluation Manager for clearance. • Guidance to the national evaluator to prepare output analysis and technical reports	2 days	Home based
3. Briefing with the UNIDO Independent Evaluation Unit, project managers and other key stakeholders at UNIDO HQ (included in preparation of presentation).	• Detailed evaluation schedule with tentative mission agenda (incl. list of stakeholders to interview and site visits); mission planning; • Unit of evaluation tasks with the National Consultant.	1 day	Through skype
4. Conduct field mission to Indonesia [34].	• Conduct meetings with relevant project stakeholders, beneficiaries, the GEF Operational Focal Point (OFP), etc. for the collection of data and clarifications; • Agreement with the National Consultant on the structure and content of the evaluation report and the distribution of writing tasks;	10 days	(specific project site to be identified at inception phase)

[34] The exact mission dates will be decided in agreement with the Consultant, UNIDO HQ, and the country counterparts.

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
	• Evaluation presentation of the evaluation's preliminary findings, conclusions and recommendations to stakeholders in the country, including the GEF OFP, at the end of the mission.		
5. Present overall findings and recommendations to the stakeholders at UNIDO HQ	• After field mission(s): Presentation slides, feedback from stakeholders obtained and discussed.	1 day	Vienna, Austria
6. Prepare the evaluation report, with inputs from the National Consultant, according to the TOR. Coordinate the inputs from the National Consultant and combine with her/his own inputs into the draft evaluation report. Share the evaluation report with UNIDO HQ and national stakeholders for feedback and comments.	• Draft evaluation report.	12 days	Home-based
7. Revise the draft project evaluation report based on comments from UNIDO Independent Evaluation Unit and stakeholders and edit the language and form of the final version according to UNIDO standards.	• Final evaluation report.	2 days	Home-based

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education:

Advanced degree in environment, energy, engineering, development studies or related areas.

Technical and functional experience:

- Minimum of 15 years' experience in evaluation of development projects and programmes
- Good working knowledge in Indonesia
- Knowledge about GEF operational programs and strategies and about relevant GEF policies such as those on project life cycle, M&E, incremental costs, and fiduciary standards
- Experience in the evaluation of GEF projects and knowledge of UNIDO activities an asset
- Knowledge about multilateral technical cooperation and the UN, international development priorities and frameworks
- Familiarity with gender analysis tools and methodologies an asset
- Working experience in developing countries

Languages:

Fluency in written and spoken English is required. All reports and related documents must be in English and presented in electronic format.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Unit.

REQUIRED COMPETENCIES

Core values:

WE LIVE AND ACT WITH INTEGRITY: work honestly, openly and impartially.

WE SHOW PROFESSIONALISM: work hard and competently in a committed and responsible manner.

WE RESPECT DIVERSITY: work together effectively, respectfully and inclusively, regardless of our differences in culture and perspective.

Core competencies:

WE FOCUS ON PEOPLE: cooperate to fully reach our potential –and this is true for our colleagues as well as our clients. Emotional intelligence and receptiveness are vital parts of our UNIDO identity.

WE FOCUS ON RESULTS AND RESPONSIBILITIES: focus on planning, organizing and managing our work effectively and efficiently. We are responsible and accountable for achieving our results and meeting our performance standards. This accountability does not end with our colleagues and supervisors, but we also owe it to those we serve and who have trusted us to contribute to a better, safer and healthier world.

WE COMMUNICATE AND EARN TRUST: communicate effectively with one another and build an environment of trust where we can all excel in our work.

WE THINK OUTSIDE THE BOX AND INNOVATE: To stay relevant, we continuously improve, support innovation, share our knowledge and skills, and learn from one another.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	National evaluation consultant
Main Duty Station and Location:	Home-based
Mission/s to:	Travel to potential sites within Indonesia
Start of Contract:	01/09/2023
End of Contract:	30/11/2023
Number of Working Days:	30 days spread over the above mentioned period

ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Unit (EIO/IEU) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides evidence-based analysis and assessment on result and practices that feed into the programmatic and strategic decision-making processes. Independent evaluations provide credible, reliable and useful assessment that enables the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. EIO/IEU is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

PROJECT CONTEXT

Detailed background information of the project can be found the terms of reference (TOR) for the terminal evaluation.

The national evaluation consultant will evaluate the projects according to the terms of reference (TOR) under the leadership of the team leader (international evaluation consultant). S/he will perform the following tasks:

MAIN DUTIES	**Concrete/measurable outputs to be achieved**	**Expected duration**	**Location**
Desk review Review and analyze project documentation and relevant country background information; in cooperation with the Team Leader, determine key data to collect in the field and prepare key instruments in English (questionnaires, logic models). If need be, recommend adjustments to the evaluation framework and Theory of Change in order to ensure their understanding in the local context.	Evaluation questions, questionnaires/interview guide, logic models adjusted to ensure understanding in the national context; A stakeholder mapping, in coordination with the project team.	4 days	Home-based
Carry out preliminary analysis of pertinent technical issues determined by the Team Leader. In close coordination with the project team, verify the extent of achievement of project outputs prior to field visits.	• Report addressing technical issues and question previously identified with the Team leader • Tables that present extent of achievement of project outputs	6 days	Home-based

MAIN DUTIES	Concrete/measurable outputs to be achieved	Expected duration	Location
Develop a brief analysis of key contextual conditions relevant to the project.	• Brief analysis of conditions relevant to the project		
Coordinate the evaluation mission agenda, ensuring and setting up the required meetings with project partners and government counterparts, and organize and lead site visits, in close cooperation with project staff in the field.	• Detailed evaluation schedule. • List of stakeholders to interview during the field missions.	2 days	Home-based
Coordinate and conduct the field mission with the team leader in cooperation with the Project Management Unit, where required. Consult with the Team Leader on the structure and content of the evaluation report and the distribution of writing tasks. Conduct the translation for the Team Leader, when needed.	• Presentations of the evaluation's initial findings, draft conclusions and recommendations to stakeholders in the country at the end of the mission. • Agreement with the Team Leader on the structure and content of the evaluation report and the distribution of writing tasks.	10 days (including travel days)	In Indonesia
Follow up with stakeholders regarding additional information promised during interviews. Prepare inputs to help fill in information and analysis gaps (mostly related to technical issues) and to prepare tables to be included in the evaluation report as agreed with the Team Leader. Revise the draft project evaluation report based on comments from UNIDO Independent Evaluation Unit and stakeholders and proof read the final version.	• Part of draft evaluation report prepared.	8 days	Home-based

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced university degree in environmental science, engineering or other relevant discipline like developmental studies with a specialization in industrial energy efficiency and/or climate change.

Technical and functional experience:

- Excellent knowledge and competency in the field of POPs and PCBs
- Evaluation experience, including evaluation of development cooperation in developing countries is an asset
- Exposure to the development needs, conditions and challenges in their country and region.
- Familiarity with gender analysis tools and methodologies and asset
- Familiarity with the institutional context of the project is desirable.

Languages: Fluency in written and spoken English and in Indonesian/Malay is required.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project

(or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Unit.

REQUIRED COMPETENCIES

Core values:

WE LIVE AND ACT WITH INTEGRITY: work honestly, openly and impartially.

WE SHOW PROFESSIONALISM: work hard and competently in a committed and responsible manner.

WE RESPECT DIVERSITY: work together effectively, respectfully and inclusively, regardless of our differences in culture and perspective.

Core competencies:

WE FOCUS ON PEOPLE: cooperate to fully reach our potential –and this is true for our colleagues as well as our clients. Emotional intelligence and receptiveness are vital parts of our UNIDO identity.

WE FOCUS ON RESULTS AND RESPONSIBILITIES: focus on planning, organizing and managing our work effectively and efficiently. We are responsible and accountable for achieving our results and meeting our performance standards. This accountability does not end with our colleagues and supervisors, but we also owe it to those we serve and who have trusted us to contribute to a better, safer and healthier world.

WE COMMUNICATE AND EARN TRUST: communicate effectively with one another and build an environment of trust where we can all excel in our work.

WE THINK OUTSIDE THE BOX AND INNOVATE: To stay relevant, we continuously improve, support innovation, share our knowledge and skills, and learn from one another.

b. Annex 2: Evaluation Framework / Matrix

Evaluation criteria	Evaluation indicators	Means of verification
Project Design		
The evaluation will examine the extent to which: • The project's design is adequate to address the problems at hand. • The project has a clear thematically-focused development objective, the attainment of which can be determined by a set of verifiable indicators. • The project was formulated based on the logical framework (project results framework) approach. • Was there a need to reformulate the project design and the project results framework given changes in the countries and operational context? • Is inventory data (conducted during the preparatory phase) included in the project document based on remote inventory, physical inventory or estimates? • Are relevant environmental and social risk considerations included at the time of project design?	• Situational analysis • Project results framework • Risk assessment and management • Adjustments made due to operational context • Environmental and social safeguards	• Project document and annexes • Interviews with UNIDO, NPM, NPD, NPC, key national partners, and other project stakeholders
Relevance and Coherence		
The evaluation will examine the extent to which the project is relevant or coherent to the: • National development and environmental priorities, national implementation plans and strategies of the national governments and their populations, as well as regional and international agreements. • Target groups: relevance of the project's objectives, outcomes, and outputs to the different target groups of the interventions (e.g., key government and ministry officers/representatives, PCB owners, NGOs, women's associations, etc.). • GEF's focal areas/operational program strategies: In retrospect, were the project's outcomes consistent with the GEF focal area(s)/ operational program strategies? Ascertain the likely nature and significance of the contribution of the project outcomes in the ESM of PCBs until final elimination / treatment. • Does the project remain relevant taking into account the changing environment? • To what extent was the project aligned with – and complementary to – other work being delivered within the participating countries?	• Level of alignment with national environmental priorities, NIP, as well as with UNIDO and GEF strategic priorities at the time of design and implementation	• Pertinent project documents and annexes • Interviews with UNIDO, GEF focal point, NPD, NPC key national stakeholders
Effectiveness and Progress to impact		

Evaluation criteria	Evaluation indicators	Means of verification
The evaluation will assess the objectives and current results (results to date): • The evaluation will assess whether the results at various levels, including outcomes, have been achieved. In detail, the following issues will be assessed: Have the expected outputs and outcomes, been successfully achieved? What are the main reasons for the achievement/non-achievement of project objectives? • Are the project outcomes commensurate with the original or modified project objectives? If the original or modified expected results are merely outputs/inputs, were there any real outcomes of the project? If there were, are these commensurate with realistic expectations from the project? • Are the targeted beneficiary groups actually being reached? How do the stakeholders perceive the quality of outputs? • Has the project generated any results that could lead to changes in the assisted institutions? Have there been any unplanned effects? • Identify actual and/or potential longer-term impacts or at least indicate the steps taken to assess these. • Have the relevant authorities in the country prepared and enforced the regulations on PCBs? • What is the geographical coverage of the project? • What quantity of PCBs have been identified? And disposed of? • Have any spillages been observed or reported? • Does a certified laboratory for testing PCB oil exist in the country? • Has the project provided information on POPs, including PCBs, to educational institutions (schools, colleges, universities, ...)?	• Target for outputs, outcomes, and objectives of Project Results Framework • Occurrence of intermediate states in the country • Stated contribution of stakeholders in achievement of outputs	• Review of relevant documents such as PIRs, progress reports, meeting reports • Direct observation and discussion during the evaluation mission • Interviews with UNIDO, NPD, NPM, NPC, key government representatives, PCB owners, OE, consultants, and other partners such as NGOs, academia, etc.
Efficiency at current stage of implementation		

Evaluation criteria	Evaluation indicators	Means of verification
The extent to which: • Is the project cost-effective? Has the project used the most cost-efficient options? • Has the project produced results (outputs and outcomes) within the expected time frame? Has project implementation been delayed? If the project has been delayed, what were the reasons for the delay, and has it affected cost-effectiveness or results? • Have the project's activities been in line with the schedule of activities as defined by the project team and annual work plans? Have the disbursements and project expenditures been in line with budgets? • Have the inputs from the donor, UNIDO, and government/ counterpart been provided as planned, and were they adequate to meet the requirements? Was the quality of UNIDO inputs and services as planned and timely? • Have the counterpart institutions spent co-finance as initially committed? • Was there coordination with other UNIDO and other donors' projects, and did possible synergy effects happen? • Give the reasons/justifications for the extension granted to the project. • Has a knowledge management system been established? • To what extent have the recommendations of the mid-term evaluation been taken into consideration? • What has been the impact of COVID-19 on project implementation?	• Level of compliance with expected milestones mentioned in logical framework and with respect to financial planning and annual plans • Level of co-finance mobilized • Document the delays that occurred • List of reasons, validated by project team	For all questions under Efficiency: • PIRs, PSC meeting reports, annual and progress reports, national reports • Interviews with UNIDO, NPM, NPD, NPC, members of the project team and PSC, consultants and other project stakeholders
Assessment of risks to likelihood of sustainability of project outcomes		
Sustainability is understood as the likelihood of continued benefits after the GEF project ends. Assessment of sustainability of outcomes will be given special attention, but also technical, financial, and organizational sustainability will be reviewed. This assessment will explain how the risks to project outcomes will affect continuation of benefits after the GEF project ends. It will include both exogenous and endogenous risks. The following four dimensions or aspects of risks to sustainability will be addressed: • ***Financial risks***. Are there any financial risks that may jeopardize sustainability of project outcomes? What is the likelihood of financial and economic resources not being available now that the GEF assistance has ended? (Such resources can be from multiple sources, such as the public and private sectors or income-generating activities; these can also include trends that indicate	UNIDO risk level indicators: Low, Moderate, High	• Review of relevant documents such as PIRs, progress reports, meeting documents, progress reports • Interviews with UNIDO, NPD, NPM, NPC, and other key national stakeholders, PCB owners, OE, and NGOs

Evaluation criteria	Evaluation indicators	Means of verification
the likelihood that, in the future, there will be adequate financial resources for sustaining project outcomes.) Was the project successful in leveraging the co-financing pledged at design? • ***Socio-political risks***. Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that project benefits continue to flow? Is there sufficient public/stakeholder awareness in support of the project's long-term objectives? • ***Institutional framework and governance risks***. Do the legal framework, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? Are requisite systems for accountability and transparency and required technical know-how in place? • ***Environmental risks***. Are there any environmental risks that may jeopardize sustainability of project outcomes? Are there any environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher-level results that are likely to have adverse environmental impacts, which, in turn, might affect sustainability of project benefits? The evaluation will assess whether certain activities will pose a threat to the sustainability of the project outcomes.		
Assessment of M&E systems		
• ***M&E design***. Did the project have an M&E plan to monitor results and track progress towards achieving project objectives? The evaluation will assess whether the project met the minimum requirements for the application of the project M&E plan. • ***M&E plan implementation***. The evaluation should verify that an M&E system was in place and facilitated timely tracking of progress towards project objectives by collecting information on chosen indicators continually throughout the project implementation period; annual project reports were complete and accurate, with well-justified ratings; the information provided by the M&E system was used during the project to improve performance and to	• Availability of logframe, workplans, roles of overseeing bodies, budgeted M&E plan • Level of implementation of M&E system (execution of activities); changes in implementation approach to adapt to changing situations; compliance of the countries in the submission of relevant reports in a timely manner • Compliance with reporting requirements as mentioned in TORs and/or project document	• Project document • PIRs, meeting reports, progress and annual reports, financial reports, audit and other relevant reports • Interviews with UNIDO, NPD, NPM, NPC, PSC members, other relevant stakeholders / partners

Evaluation criteria	Evaluation indicators	Means of verification
adapt to changing needs; and the project had an M&E system in place with proper training for parties responsible for M&E activities to ensure that data will continue to be collected and used after project closure. Was monitoring and self-evaluation carried out effectively at regional and national levels, based on indicators for outputs, outcomes, and impacts? Are there any annual work plans? Were the steering or advisory mechanisms put in place at national and regional levels? Did reporting and performance reviews take place regularly? • ***Budgeting and funding for M&E activities***. In addition to incorporating information on funding for M&E while assessing M&E design, the evaluators will determine whether M&E was sufficiently budgeted for at the project planning stage and whether M&E was adequately funded and in a timely manner during implementation.		
Monitoring of long-term changes		
The M&E of long-term changes is often incorporated in GEF-supported projects as a separate component and may include determination of environmental baselines; specification of indicators; and provisioning of equipment and capacity building for data gathering, analysis, and use. This section of the evaluation report will describe project actions and accomplishments towards establishing a long-term monitoring system. The evaluation will address the following questions: a. Did the project contribute to the establishment of a long-term monitoring system? If it did not, should the project have included such a component? b. What were the accomplishments and shortcomings in establishment of this system? c. Is the system sustainable — that is, is it embedded in a proper institutional structure and does it have financing? How likely is it that this system will continue operating upon project completion? d. Is the information generated by this system being used as originally intended?	• Evidence of initial efforts to establish a long-term monitoring system	• Project reports, M&E reports • Interviews with UNIDO, NPD, NPM, NPC, PSC members, and other relevant stakeholders
Project coordination and management		
The extent to which: • The national management and overall coordination mechanisms have been established and have been efficient and	• Level and quality of project coordination and management at national level	• PIRs, meeting reports, and project coordination and management reports

Evaluation criteria	Evaluation indicators	Means of verification
effective. Did each partner have assigned roles and responsibilities from the beginning? Did each partner fulfill its role and responsibilities (e.g., providing strategic support, monitoring and reviewing performance, allocating funds, providing technical support, following up agreed/corrective actions)? • The UNIDO HQ-based management, coordination, monitoring, quality control, and technical inputs have been efficient, timely, and effective (e.g., problems identified timely and accurately; quality support provided timely and effectively; right staffing levels, continuity, skill mix, and frequency of field visits)? • The UNIDO CO is involved in the project.		• Interviews with UNIDO, NPD, NPM, NPC, PSC members, and other relevant stakeholders
Gender mainstreaming		
The evaluation will consider, but need not be limited to, the following issues that may have affected gender mainstreaming in the project: • Did the project design adequately consider the gender dimensions in its interventions? If so, how? (For GEF-4 take this point out?) • Was a gender analysis included in a baseline study or needs assessment (if any)? (For GEF-4 take this point out?) • How gender-balanced was the composition of the project management team, the Project Steering Committee, experts and consultants, and the beneficiaries? • Have women and men benefited equally from the project's interventions? Do the results affect women and men differently? If so, why and how? How are the results likely to affect gender relations (e.g., division of labour, decision-making authority)? • Are women/gender-focused groups, associations or gender units in partner organizations consulted/included in the project? • To what extent were socio-economic benefits delivered by the project at the regional, national, and local levels, including consideration of gender dimensions?	Incorporation of gender-responsive approaches and indicators, such as: • Women's participation • Gender balance • Integration of gender dimensions in project delivery • Equality, benefits, and results	• Project reports • Interviews with UNIDO, NPD, NPM, NPC, NGOs, Women's Associations involved, and other beneficiaries

c. Annex 3: List of Documentation Reviewed

Project Document and Annexes
PSC meeting reports
PIRs
Project Final Report
PSC meeting reports
Progress reports
MTE report
Report on economic and incentives for PCB disposal
Report on the introduction of an ESM and disposal system for PCBs
Report on regulatory framework – PCB Official Guidance Document
Revised criteria OE
Scoring mobile technology
Site visit report
Final Report PCB in the Environment
Final report PCB samples Analysis
PCB inventory phase 1 and 2.
PCB MP_English
Statistic Report
Final Report_ Awareness raising
Training workshop reports
Report on gender
Stockholm Convention Guidance
PCB identifying, storing and labeling
PCB management
PCB National Management Plan
PCB free Indonesia booklet
Copies of brochures, leaflets, and posters on PCB
Technical guidance documents

d. Annex 4: List of Stakeholders Consulted

Name	Position
Ms. Carmela Centeno	UNIDO Project Manager
Mr. Salil Dutt	Acting UNIDO Rep. in Indonesia
Ms. Haruki Agustina	NPD, Acting Director of Hazardous and Toxic Substances Management, MOEF
Ms. Upik Aslia	NPC, Head of Sub-directorate of Hazardous and Toxic Substances Elimination, MOEF
Mr. Asep Saepuddin	Manager Manager Hazardous & Non Hazardous Waste, PT PLN, PCB owner
Mr. Novriadi Visco	Environment Manager, PT. Freeport Indonesia, PCB owner
Mr. Elpido	Director Technical and SHEQ, PT. PPLI, Operating Entity
Ms. Vinanti Saskia	HSE Unit, PT. Suzuki Indomobil Motor, PCB owner
Mr. DJunaidi	Director, Hyprowira, PCB testing laboratory
Mr. Budi Adhi Baskoro	Director, Petrolab Service, Consultant for Inventory & PCB Management Plan
Ms. Ibu Yun Insiani	Ex-NPD, retired from MOEF
Mr. Rio Deswandi	Ex NPM and CTA
Mr. Abdul Sialana	NPM

e. Annex 5: Survey / Questionnaire

Independent Terminal Evaluation of the Project:
Introduction of an Environmentally Sound Management and Disposal System for PCB Wastes and PCB-contaminated Equipment **– *GEF ID: 4446***
September - November 2023

UNIDO PM

Questions	Answers
1. (i) Who got the idea to develop this proposal? (ii) Was it a request from the country? (iii) Approach to develop project?	
2. (i) Were you involved in the development of the project (PIF and PPG)? (ii) Were the key national stakeholders identified during that phase? (iii) Were the major PCB owners identified and engaged during the preparatory phase? (iv) Was the operating entity (OE) identified during the preparatory phase?	
3. (i) How many projects are you managing at the moment?	

(ii) Are you assisted for the management of this project? (iii) You have implemented many PCB projects, some in parallel. Have you used lessons learned from one project to improve implementation for others? Or have you created synergies among some these projects for effectiveness? If yes, can you give some examples for both?	
4. (i) Did UNIDO manage all funds? If no, was there a signed agreement with the National Executing Agency (NEA) (NEA: Ministry of Env. And Forestry – MOEF?) (ii) For what amount was the agreement signed with NEA? What was the amount used for? (iii) Did UNIDO do all the procurement of equipment (e.g. for pilot projects) as well as recruitment of national and international consultants (NCs and ICs)? (iv) Generally procurements of goods and services take time, for this project which one took the longest time? (v) Were disbursements / payments done on a timely manner?	
5. (i) Was the UNIDO Field Office of Indonesia involved in the project? (ii) If yes, describe its involvement in the project and support during implementation?	
6. Financial management (i) Was there a need for approval to reallocate budgets given the delays in project implementation? (ii) What amount was spent for Project Management Costs (PMC)? (iii) How much co-financing materialized for this project? (Detailed table of donors and amount of co-financing materialized, please, thanks)	

7. (i) Did UNIDO directly sub-contract the international as well as national consultants? (ii) How were these consultants identified? (iii)Procedure for their recruitment?	
(i)	
8. Feedback on national consultants (NCs) and international consultants (ICs) (i) For which aspects of the project were they recruited? (ii) Did they perform well? (iii) Did they timely submit reports where relevant?	
9. Project Steering Committee, monitoring, challenges, delays, extension and PIRs (i) Did you attend all PSC meetings? (ii) Satisfied with the involvement and participation of national counterparts and other partners of the project? (iii) Has the Project Results Framework and all the proposed indicators therein been used as basis to monitor project progress and to track results? (iv) Has the gender dimension specifically been considered during implementation and monitoring of the project? (v) What major challenges has the project faced, and that caused significant delays to implementation? (vi) How have these challenges been overcome? (vii) How many project extensions were requested? Total duration of project extension?	

(viii) Who was responsible to draft the PIRs? (ix) Have the PIR reports been timely submitted? (x) Were all the recommendations of the MTE implemented? If no, which ones were not implemented, and why?	
10. Execution at national level, involvement of national stakeholders, ownership, performance of National Project Manager (NPM), National Project Coordinator (NPC) and rProject Management Unit (PMU) (i) What was the modality of execution at national level? (ii) Did the NPM perform as expected? Frequent communication with him? Timely reporting? (iii) Roles and responsibilities of PMU and NPC? Did they perform well? (iv) Have you seen a good involvement/engagement of national stakeholders, PCB owners, and other stakeholders and beneficiaries? (v) How was the operating entity of the dechlorination facility identified? Satisfied with their engagement? Their capacity sufficiently built to be sustainable beyond the project life? (vi) PCB owners already adopting ESM systems at their facilities? (vii) Do you feel there was high ownership of project in the country?	
11. How do you foresee the sustainability of the project results in the long term?	

12. Your general feedback on the project and ownership by key stakeholders and partners, especially the OE.	

UNIFO Field Office

Country: Indonesia
Contact person and email:
Please email back to: robert@uom.ac.mu and dadset@gmail.com

1: (i) Structure and staffing of the field office? (ii) Role of the field office? (iii) Your position and responsibilities in the office?	
2: (i) Are field offices generally informed when a project is being implemented in the country? (ii) What type of support are expected from field offices during the implementation of projects? (ii) For the implementation of the Indonesia PCB Project, what has been the contribution / support provided by the field office? (iii) Has the office participated in some of the project activities? Which ones?	
3. (i) Has the field office been involved in the project enough (e.g. communication with national counterparts and partners) to assesss the counry ownership of the project? If yes, do you see high country ownership? (ii) If yes to (i), how has been the interaction / cooperation with the national counterparts / partners? Any issues or challenges? (iii) Any interaction with the project team? If yes, how was it?	
4. Your feedback on the project implementation in Indonesia. What went well and what challenges did you notice?	

National Project Director

Country: Indonesia

Contact person information (name, email, phone):

Name of your institution and your position:

Date in filling out this questionnaire:

Please email back to: robert@uom.ac.mu and dadset@gmail.com

Questions	Response and comments
1. How relevant is the UNIDO project to your country's priorities regarding national plans for POPs and PCBs? 2. How willing is your government to fulfill its obligations towards the Stockholm Convention?	
3. What support has your government, specifically your department, given to the implementation of the UNIDO project?	
4. Are you satisfied with the support and guidance provided by the UNIDO Project Manager (PM), the UNIDO Country Office, and the National Project Manager (NPM)? 5. Please give your feedback on the assistance and support provided by national and international consultants. Please elaborate. 6. What other types of assistance do you think would have been helpful?	
7. Has your country been able to successfully deliver all the outputs of the project? 8. What were the main challenges faced to undertake the activities? 9. How were the challenges overcome? 10. What was the procedure to select PPLI as the Operating Entity (OE) of the treatment facility? 11. Are you satisfied with the involvement and engagement of PPLI in the project? 12. Who are the main PCB owners in Indonesia? How is their involvement and participation in the project so far?	
13. Please rate the guidance & support provided by UNIDO PM, the NPM, the International Consultants (ICs), and the National Consultants (NCs)(from 1 to 6).	UNIDO PM: NPM: ICs:

1: Highly unsatisfactory; 2: Unsatisfactory; 3: Moderately Unsatisfactory; 4: Moderately Satisfactory; 5: Satisfactory; and, 6: Highly Satisfactory	NCs:
14. When was the Project Steering Committee (PSC) established? 15. Were the meetings held regularly as planned? 16. Did the PSC play its role fully? 17. Were the members of the PSC fully engaged and did they participate actively in the meetings?	
18. Have the regulations and policies on PCBs developed in the context of the project been adopted by the Government of Indonesia? 19. Have the relevant authorities started to enforce those regulatory measures and policies on PCBs? 20. Do the enforcing agencies have the necessary resources to inspect and monitor the PCB owners regarding compliance with national regulations and policies on PCBs?	
21. Are there any social or political factors that may influence positively or negatively the project results? If yes, please comment.	
22. Are the capacities built on the Environmentally Sound Management (ESM) of PCBs within the project robust enough to continue delivering benefits beyond the project life? Why or why not? Please elaborate.	
23. What has the Government of Indonesia decided regarding the incentive mechanism to support PCB owners to soundly dispose of their PCB-contaminated equipment at the treatment facility? 24. Have the relevant authorities already taken a decision regarding the treatment cost to be paid by PCB owners to the PPLI the Operating Entity	

for the treatment of their PCB-contaminated equipment? 25. If no, what would be the procedure to decide on the treatment costs by the OE?	
26. Do you have any inputs / comments / suggestions / issues pertinent to the project you'd like to raise with me?	

National Project Coordinator Questionnaire

Country: Indonesia
Contact person information:
Name of your institution:
Your position in the institution:
Please email back to: robert@uom.ac.mu and dadset@gmail.com

Questions	Response and comments
1. What was the procedure for your nomination as National Project Coordinator (NPC)? 2. Were you NPC since the beginning of the project?	
3. What were your role and main responsibilities as NPC? 4. What were the main challenges you have faced in coordinating the activities of the project? How did you overcome these challenges? 5. Who was your supervisor? Do you have to report regularly to your supervisor?	
6. Was a Project Management Unit (PMU) established? If yes, when? 7. Give the constitution of PMT. 8. What were the roles and responsibilities of the PMT in the project? 9. What was your interaction with the PMT?	
10. How many consultants were contracted for the project? Give the procedure for the recruitment and selection of consultants a. Are you satisfied with their performance/quality? b. Did they submit the reports on time or late? If late, the reasons for the delay? c. Do these reports have to be validated? If so, by whom?	
11. Who were the project's main/key stakeholders? Please explain their role in the project. Were they actively participating and collaborating in the project? Please	

reply per stakeholder. Were the collaboration and interaction between stakeholders satisfactory? How was the communication (frequency and channel) between the key stakeholders? 12. Did the co-financing resources (agree at the beginning of the project) provided by the partners? Did the project receive support from the government/national authorities or local authorities/private sector? If yes, what type of support (human resources, capacity building, infrastructure)? Please reply per stakeholder. 13. How did stakeholders share/update the information? Did the stakeholders have any common platform for information storage? For example, sample analysis results, inventory, etc.	
14. When was the project officially launched in your country? Which is the project geographical scope? 15. Did the project build on the results / data produced by previous initiatives such as the inventory carried out under the NIP on POPs/ PCBs or other? 16. Who implemented the PCBs sample analysis, inventory and disposal during the project? Which technique/methodology they used? 17. Did the stakeholders have the technical methods, certifications/permissions and technology for PCBs sample analysis, inventory and disposal? Please describe the situation before and after the project. 18. Are the capacities built (technical methods, certifications/permissions and technology) within the project robust enough to continue delivering benefits (PCBs inventory and disposal) to stakeholders beyond the project life? Why or why not? Please elaborate. 19. How many PBC owners developed their Environmental Sound Management for PCBs disposal plans during the project? 20. Did the project include the maintenance workshops (transformers/equipment/oils)? Please specify this situation before and after the project.	
21. Are you satisfied with the support and guidance provided by UNIDO, and the National Project Director (NPD)?	

22. Please rate the guidance & support provided by UNIDO and NPD separately (from 1 to 6). 1: Highly unsatisfactory; 2: Unsatisfactory; 3: Moderately unsatisfactory; 4: Moderately satisfactory; 5: Satisfactory; and, 6: Highly satisfactory 23. What other types of assistance do you think would have been helpful?	
24. Has the project able to deliver all outcomes/outputs planned? Did the project had any delays, Why? 25. Did the project reach the key indicators main targets? Why? 26. Are there any social or political factors that may influence positively or negatively the project results? If yes, please comment. 27. What were the main challenges faced to undertake the activities? How were the challenges overcome? 28. Are there already visible signs of the project's impact, such as a behavioural change (Detection and analysis, storage, national inventory, disposal) between PCB private/public stakeholders? Please give some concrete examples. 29. Are you aware of job creation due to the project implementation? If yes, how many jobs were created, and what type of job? Any data disaggregated by gender? 30. Are you aware of any improvement in health risks prevention measures in the PCB sector workers and communities close to PCB storage?	
31. Have the relevant authorities started to enforce the regulations and policies on PCBs? 32. Do the enforcing agencies have the necessary resources to inspect and monitor the PCB owners regarding compliance with national regulations and policies on PCBs?	
33. Has the project involved women? How has it integrated gender dimensions in project delivery? Any positive or emerging outcomes on gender equality?	
34. How COVID-19 restrictions impacted the delivery of activities and outputs? what adjustments were made because of the delays?	
35. Who was responsible for the Monitoring & Evaluation (M&E) of the project? Were you involved in the M&E of the project?	

36. Was a Project Steering Committee (PSC) established? If yes, when? 37. Who were the members of the PSC? 38. What were the roles and responsibilities of the PSC? 39. How often did the PSC meet? 40. Did the project have Mid-Term Review? If yes, which recommendations did the project implemented?	
41. Do you have any inputs/comments/suggestions/issues pertinent to the project you'd like to raise with me?	

National Project Manager Questionnaire

Country: Indonesia
Contact person information:
Name of your institution:
Your position in the institution:
Please email back to: robert@uom.ac.mu and dadset@gmail.com

Questions	Response and comments
42. What procedure was to select and hire you as National Project Manager (NPM)? Who made the final decision? How many candidates applied? To whom did you report? 43. For how long have you been the NPM? 44. When were you replaced, and what were the reasons for your replacement?	
45. What were your main responsibilities as NPM? 46. What were the main challenges you have faced in coordinating the activities of the project? How did you overcome these challenges? 47. How was the collaboration with the National Project Coordinator (NPC)? 48. Did you get support from the Ministry of Environment and Forestry (MOEF) to undertake your duties? Are you satisfied with the support provided? 49. What were the reports under your responsibility? Did you submit the reports on time? To whom?	
50. Was a Project Management Unit (PMU) established? If yes, when? 51. Give the constitution of PMU. Were you a member of PMU? If not, how was the collaboration with PMU? Did the PMU facilitate your tasks? 52. Where is the office of the PMU?	

53. What were the roles and responsibilities of the PMU in the project?	
54. How many consultants were contracted for the project? Give the procedure for the recruitment and selection of consultants d. Are you satisfied with their performance/quality? e. Did they submit the reports on time or late? If late, the reasons for the delays? f. Do these reports have to be validated? If so, by whom?	
55. Who were the project's main/key stakeholders? Please explain their role in the project. Were they actively participating and collaborating in the project? Please reply per stakeholder. Were the collaboration and interaction between stakeholders satisfactory? How was the communication (frequency and channel) between the key stakeholders? 56. Did the co-financing resources (agree at the beginning of the project) provided by the partners? 57. Did the project receive support from the government/national authorities or local authorities/private sector? If yes, what type of support (human resources, capacity building, infrastructure)? Please reply per stakeholder. 58. How did stakeholders share/update project information? Did the stakeholders have any common platform for information storage? For example, where are PCB analysis results, inventory data, etc. stored?	
59. When was the project officially launched in your country? Did the project cover all the regions in Indonesia? 60. Did the project build on the results / data produced by previous initiatives such as the inventory carried out under the NIP on POPs/ PCBs or other? 61. Are the capacities built (e.g. for PCB inventory, analysis and identification, PCB management (storage and transport) and treatment by the dechlorination technology) within the project robust enough to continue delivering benefits) to stakeholders beyond the project life? Why or why not? Please elaborate.	

62. How many PBC owners developed their Environmental Sound Management system for PCBs disposal plans during the project? 63. Did the project include the maintenance of workshops (transformers/equipment/oils)? Please specify this situation before and after the project.	
64. Are you satisfied with the support and guidance provided by UNIDO PM, and the National Project Director (NPD)? 65. Was the UNIDO Country Office involved in the project? What type of involvement? 66. What other types of assistance do you think would have been helpful?	
67. Please rate the guidance & support provided by UNIDO PM and NPD separately (from **1 to 6**). **1: Highly unsatisfactory; 2: Unsatisfactory; 3: Moderately unsatisfactory; 4: Moderately satisfactory; 5: Satisfactory; and, 6: Highly satisfactory** 68. Where relevant, please rate also the performance of national and international consultants (NCs and ICs) from **1 to 6.**	UNIDO PM: NPD: NCs: ICs:
69. Has the project been able to deliver all outcomes/outputs planned? 70. What were the main reasons for the delays in project implementation (more than 8 years instead of 5 years)? 71. Were the targets for the key project indicators reached?	
72. Are there any social or political factors that may influence positively or negatively the project results? If yes, please comment. 73. What were the main challenges faced in undertaking the activities? How were the challenges overcome? 74. Are there already visible signs of the project's impact, such as a behavioral change (environmentally sound management of PCB contaminated equipment) amongst PCB owners (private and public companies)? 75. Are you aware of job creation as a result of project implementation? If yes, how many jobs were created, and what type of job? Any data disaggregated by gender? 76. Are you aware of any improvement in health risks prevention measures in the PCB sector workers and communities close to PCB storage?	
77. Have the relevant authorities started applying the Environmental Sound	

Management of PCBs legal framework and regulatory measures to all stakeholders, especially PCBs owners? 78. Do the enforcing agencies have the necessary resources to inspect and monitor the PCB owners regarding compliance with national regulations on PCBs?	
79. Has the project involved women? How has it integrated gender dimensions in project delivery? Any positive or emerging outcomes on gender equality?	
80. How COVID-19 restrictions impacted the delivery of activities and outputs? What adjustments were made because of COVID-19?	
81. Who was responsible for the Monitoring & Evaluation (M&E) of the project? Were you involved in the M&E of the project? 82. Were all the recommendations of the midterm evaluation (MTE) implemented?	
83. Do you have any inputs/comments/suggestions/issues pertinent to the project you'd like to raise with me?	

PCB owner

Country: Indonesia

Contact person information:

Name of your company:
Your position in the company:

Please email back to: robert@uom.ac.mu and dadset@gmail.com

Questions	Response and comments
1: About your institution/company: (i) When was your enterprise/company established? (ii) How many people does your enterprise / company employ? How many men and women? (iii) How many transformers and capacitors do your enterprise / company own? (iv) How do you manage them?	
2: How and when was your enterprise / company contacted to be involved in project? 3: Was your enterprise / company involved in the preparatory phase of the project?	

Questions	Response and comments
4: (i) What was the role of your company in the project? (ii) What did your company and its staff benefit from project? (iii) What did your enterprise / company contribute to the project?	
5: (i) Are you satisfied with the training / support provided by the project on the Environmental Sound Management (ESM) of PCBs? (iv) Have your company implemented the ESM system for the identification and sound management of PCB contaminated equipment? (E.g., use of test kit for identification of PCB, safe storage of PCB contaminated equipment, workers trained on handling PCBs, etc.) (v) Have your enterprise / company developed a PCB phase out and disposal plan? Is this plan being implemented already? (vi) How many tons of PCB contaminated equipment have your enterprise / company already identified and soundly managed and disposed of? (vii) What were the major obstacles or challenges your company faced during the implementation of the project? (viii) How were the challenges / obstacles overcome? (ix) What obstacles / challenges remain to identify and soundly destroy all the PCB contaminated equipment owned by company? (x) When the project will be finished, and if more PCB contaminated transformers are identified, would your company have the financial resources to soundly eliminate them?	
6: (i) Are you satisfied with the guidance, support, and assistance provided by **UNIDO**, the **National Project Management Manager** (**NPM**), and the **National Project Coordinator** (**NPC**)? Please briefly give your feedback on each one of them. (ii) Are you satisfied with the support and assistance of the national and international consultants (**NCs** and **ICs**)? Please give your feedback	

Questions	Response and comments
(iii) What other types of assistance do you think would have been helpful?	
7: Where relevant, please rate individually the guidance & support provided by **UNIDO**, **NPM**, **NPC, National Consultants (NCs) and International Consultants (ICs)** from 1 to 6. **1: Highly unsatisfactory; 2: Unsatisfactory; 3: Moderately unsatisfactory; 4: Moderately satisfactory; 5: Satisfactory; and, 6: Highly satisfactory**	**UNIDO**: **NPM:** **NPC**: **NCs**: **ICs**:
8: (i) Now the project is over, what improvement can you think of? (ii) Your feedback on the project?	

GEF Focal Point Questionnaire

Country: Indonesia
Contact person information:
Name of your institution:
Your position in the institution:
Please email back to: robert@uom.ac.mu and dadset@gmail.com

Questions	Response and comments
(i) What are the roles and duties of the GEF Office (or GEF Focal Point) of Indonesia? (ii) Since when are you the GEF Focal Point for Indonesia? (iii) How many GEF-funded projects are being currently implemented in Indonesia?	
(i) How relevant is the project with respect to the priorities of Indonesia? (ii) What has been your involvement or that of the GEF office of Indonesia in this project? (iii) Have you participated in some activities of the project? If yes, which ones? (iv) What support or assistance did the GEF Office of Indonesia provide to the project? (v) Have you been regularly kept informed about the achievements of the project?	
Your feedback on the project	

Operating Entity

Country: Indonesia

Contact person information:

Name of your company: PPLI

Date in filling out this questionnaire:

Please email back to: robert@uom.ac.mu and dadset@gmail.com

Questions	Response and comments
About your institution/company: (v) When was PPLI established? (vi) What are the main services offered by PPLI? offer (vii) How many people does PPLI employ? Number of men and women?	
1: How and when was PPLI selected to be the Operating Entity (OE) of the dechlorination technology? 2: Did PPLI have past experience in the treatment/destruction of PCB-contaminated equipment?	
3: What did PPLI benefit from the project? 4: How much did PPLI invest to be the OE of the PCB treatment facility?	
4: What are the main responsibilities of PPLI as OE in the project? 5: Did PPLI receive the appropriate training to operate the treatment facility (e.g. operating the dechlorination unit, testing for PCBs by chromatography, etc.)? 6: What were the major obstacles or challenges PPLI faced to build its capacity to be able to soundly and efficiently treat PCB-contaminated equipment? 7: To what extent have these challenges and obstacles been overcome? 8: Does PPLI have the capacity to soundly eliminate/destroy pure PCBs?	

Questions	Response and comments
9: Has a decision been taken regarding the cost to be paid by PCB owners to have their contaminated equipment treated? 10: Has a decision been taken regarding the ownership of the treated oil and recovered metals from the transformers?	
11: Has COVID-19 impacted on the delivery of activities and outputs? What adjustments were made because of the pandemic? 12: Have jobs been created at PPLI as a result of its participation in the project?	
13: Are you satisfied with the guidance, support and assistance provided by UNIDO, the National Project Manager (NPM), National Project Director (NPD) National Project Coordinator (NPC), Ministry of Environment and Forestry (MOEF) 14: Were the support and assistance from consultants (national and international) adequate? 15: What other types of assistance do you think would have been helpful?	
16: Where relevant, please rate individually the guidance & support provided by **UNIDO**, **NPD**, **NPM**, **NPC**, and **Consultants**, (from 1 to 6). **1: Highly unsatisfactory; 2: Unsatisfactory; 3: Moderately unsatisfactory; 4: Moderately satisfactory; 5: Satisfactory; and, 6: Highly satisfactory**	**UNIDO**: **NPD**: **NPM**: **NPC**: **Consultants**:
17: According to you, what challenges or obstacles **remain** for the sustainable operation of the PCB treatment facility?	
18: What has PPLI and its personnel employees benefitted from the project interventions in terms of equipment, capacity building, or technical support?	
19: What is your plan to financially sustain treatment after project closeout? 20: According to you, how many years would it take for return on the investment that PPLI made?	
21: Your feedback on the project?	

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