UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

SUSTAINABLE DEVELOPMENT GOALS

Project Implementation Report

(1 July 2022 – 30 June 2023)

Project Title:	Greening the Scrap Metal Value Chain through Promotion of BAT/BEP to Reduce U-POPs Release from Recycling Facilities
GEF ID:	9222
UNIDO ID:	150186
GEF Replenishment Cycle:	*GEF-6*
Country(ies):	*Thailand*
Region:	*SA - Southeast Asia*
GEF Focal Area:	*Chemicals and Waste (CW)*
Integrated Approach Pilot (IAP) Programs[1]:	*N/A*
Stand-alone / Child Project:	*N/A*
Implementing Department/Division:	*ENV / IPM*
Co-Implementing Agency:	*N/A*
Executing Agency(ies):	Department of Primary Industries and Mines, Ministry of Industry (DPIM-MoI), Pollution Control Department (PCD) and Department of Environmental Quality Promotion (DEQP), under Ministry of Natural Resources and Environment (MoNRE), Iron and Steel Institute of Thailand (ISIT)
Project Type:	*Full-Sized Project (FSP)*
Project Duration:	*60*
Extension(s):	*1*
GEF Project Financing:	*USD 4,500,000*
Agency Fee:	USD 427,500
Co-financing Amount:	USD 33,714,786
Date of CEO Endorsement/Approval:	1/11/2018
UNIDO Approval Date:	2/2/2018

[1] Only for **GEF-6 projects**, if applicable

Actual Implementation Start:	6/6/2018
Cumulative disbursement as of 30 June 2023:	*USD 3,049,535.83*
Mid-term Review (MTR) Date:	1/8/2021
Original Project Completion Date:	*6/6/2023*
Project Completion Date as reported in FY22:	6/6/2024
Current SAP Completion Date:	6/30/2024
Expected Project Completion Date:	6/30/2024
Expected Terminal Evaluation (TE) Date:	9/30/2024
Expected Financial Closure Date:	6/30/2025
UNIDO Project Manager[2]:	*Carmela Centeno*

I. Brief description of project and status overview

Project Objective: The main objective of the project is to promote and introduce BAT/BEP measures in scrap metal recycling facilities in order to reduce or eliminate unintentional POPs releases

Project Core Indicators		*Expected at Endorsement/Approval stage*
	Greenhouse Gas Emissions Mitigated (metric tons of CO2e)	*x*
	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment	*x*
5	*Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury, and other chemicals of global concern*	*Reduction of not less than 23 g TEQ/year of PCDD/Fs released from demonstration facilities*

Baseline

The metallurgical sector is an important part of Thailand's economy. This sector produces ferrous and non-ferrous metals such as steel, copper alloys and aluminium, which are needed for the development of the country's infrastructure. While accounting only to 4.7% of the manufacturing industry and about 1.4% of the country's GDP, the metal industry is important to Thailand's economy. The total release PCDDs/PCDFs from the ferrous and non-ferrous metal production was estimated at 119.84 g I-TEQ/year, accounting for

[2] Person responsible for report content

11.14 % of the total national release. Taking into account the magnitude of the U-POPs problem and given the absence of appropriate countermeasures, the releases to the environment of U-POPs and other pollutants of concerns from the secondary metallurgical industry is expected to increase substantially in the future. As a consequence of the expected increase of secondary metals production, the Government of Thailand places priority to the implementation of BAT and BEP measures to reduce U-POPs releases from the national metallurgical industry and efforts will include, review of the regulatory framework and capacity building. Likewise, awareness on the environmental issues among scrap metal recyclers is substantially absent.

The project covers the incremental costs required to address and remove many of the technical and institutional barriers that until now have hindered the spread of environmentally sustainable approaches for a sound management of the recycling of scrap metal along the entire value chain. In line with this objective, the project aims to strengthen the institutional capacity (decision makers and private sector), to improve the legislative and regulatory framework, and to identify, implement and demonstrate, at selected demonstration sites, state-of-the art techniques which could be applied along the entire scrap metal value chain (collection, treatment, end-use) for reducing U-POPs formation and releases from the secondary metals production processes. The project will address these problems through an integrated approach that combines awareness raising, capacity building, technical assistance and investment.

Please refer to the explanatory note at the end of the document and select corresponding ratings for the current reporting period, i.e. FY23. Please also provide a short justification for the selected ratings for FY23.

In view of the GEF Secretariat's intent to start following the ability of projects to adopt the concept of adaptive management[3], Agencies are expected to closely monitor changes that occur from year to year and demonstrate that they are not simply implementing plans but modifying them in response to developments and circumstances or understanding. In order to facilitate with this assessment, please introduce the ratings as reported in the previous reporting cycle, i.e. FY22, in the last column.

Overall Ratings[4]	**FY23**	**FY22**
Global Environmental Objectives **(GEOs)** / Development Objectives **(DOs)** Rating	*Moderately Satisfactory (MS)*	*Moderately Satisfactory (MS)*
The attainment of the GEOs is severely impacted by the COVID-19 pandemic which resulted to co-financing partners not pursuing their investment as committed. . After the situation become better, the investment for process improvement is not complicated for better environment. Due to during pandemic it is very critical to keep production stability. Consequently, environmentally friendly production is obviously emerging with knowledge dissemination from the project, additional facilities have been engaged to achieve GEOs.		
Implementation Progress **(IP)** Rating	*Moderately Satisfactory (MS)*	*Moderately Satisfactory (MS)*
Implementation of Component 3 activities on BAT/BEP demonstration has been eased after the COVID-19 pandemic while hybrid communication modality or onsite and online/virtual platforms is used for, the activities under all 4 components as appropriated.		
Overall **Risk** Rating	*Low Risk (L)*	*Low Risk (L)*
The project is still rated as LOW RISK despite the delays and loss of committed investments. There are several pilot facilities that maybe assisted by the project to make up for the lost co-financing. Since 2020 project has been communicated with many recycling facilities and there are several of them		

[3] Adaptive management in the context of an intentional approach to decision-making and adjustments in response to new available information, evidence gathered from monitoring, evaluation or research, and experience acquired from implementation, to ensure that the goals of the activity are being reached efficiently

[4] Please refer to the explanatory note at the end of the document and assure that the indicated ratings correspond to the narrative of the report

proposed the investment plans for BAT/BEP application in the factories but during 2022/2023 only two investment plans meet the project's objective regarding to technical assessment by TWG3 and BAT/BEP experts. Hence there are some potential facilities still under assessment and endorsement procedure.

II. Targeted results and progress to-date

Please describe the progress made in achieving the outputs against key performance indicator's targets in the project's **M&E Plan/Log-Frame at the time of CEO Endorsement/Approval**. Please expand the table as needed.

Project Strategy	KPIs/Indicators	Baseline	Target level	Progress in FY23
Component 1 – Policy and regulatory framework				
Outcome 1: Policy and regulatory framework strengthened and enhanced for the implementation of a sound management of metal recycling in compliance with the Stockholm Convention requirements.				
Output 1.1 One (1) database capturing various aspects of the metal recycling chain, as a new tool for policy makers, compiled.	Number of facilities identified/surveyed.	There is no comprehensive picture of the facilities involved in the scrap metal value chain. Data are scattered among different ministries/departments and industry associations	At least 4 firms in the national scrap metal value chain fully assessed.	Target reached in previous reporting period.
	Number of main industrial stakeholders interviewed/consulted.	There is no comprehensive database for the scrap metal value chain available in the country at the present time.	At least 2 representative companies in the steel and aluminium value chain interviewed/ consulted.	Target reached in previous reporting period. Post-survey of industrial facilities was conducted during the last quarter of 2022.
	Survey data entered and validated in the database.			Post-survey data was entered and validated in the database.
	Availability of the database as a new tool for policy makers.		A comprehensive database developed and functional.	A comprehensive database is fully deployed and accessed online.
	Number of beneficiary institutional stakeholders.			The database with Post-Survey information was integrated with the existing one. Database migration to DPIM server was planned to be during the third quarter of 2023.
Output 1.2: Specific guidelines on environment, health and safety measures in the metal recycling chain value developed.	Number of available national guidelines and technical manuals on BAT/BEP.	There is insufficient knowledge about U-POPs and BAT/BEP in the metal recycling chain.	National guidelines and technical manuals drafted in coordination between governmental and industrial stakeholders and adopted.	The national guidelines, technical manuals and training courses for national authority staff on measures and technologies to reduce U-POPs releases from the metallurgical industry was completed in December 2020.
	Number of training programmes developed for staff authorities	There is insufficient information system which provide insight to operators for the management of scrap metal	50 national authority staff trained on measures and technologies to reduce U-POPs releases from the metallurgical	Training programmes have been developed as a result of survey on training programs needed by the relevant national authorities. Trainings have been conducted since 2021.

Project Strategy	KPIs/Indicators	Baseline	Target level	Progress in FY23
			industry. Equal access to training for men and women ensured.	Progress in the current reporting period: The third round of Training module 1 - 5 was conducted during the first half of 2023. There were 542 representatives of relevant institutions with 62.92% women. This training exceeds the project's target of at least 50 national authority staff as set in Project Document.
Output 1.3: Improved and harmonized national policies and regulations for environmental and health protection from metal recovery activities.	Number of regulatory instruments, national guidelines and technical manuals based on BAT/BEP submitted and/or undergoing adoption by national authorities.	Number of regulatory instruments, national guidelines and technical manuals based on BAT/BEP submitted and/or undergoing adoption by national authorities.	New set of revised laws and regulations promoting the diffusion of BAT/BEP to reduce U-POPs releases from the secondary metals producing industry.	In addition to progress in previous reporting periods, new regulatory instruments, national guidelines and economic incentives have been initially drafted and submitted to TWG1 for reviewing. Consultation among relevant agencies is scheduled to take place between 20 – 21 July 2023 of which the results shall be presented to the next PSC meeting in August 2023.
Component 2 – Information dissemination and capacity building				
Outcome 2.1: Increased awareness on U-POPs and BAT/BEP concepts by relevant stakeholders, Outcome 2.2: Improved national capacity in the sound management of the recycling chain of scrap metal.				
Outcome 2.2: Improved national capacity in the sound management of the recycling chain of pre-consumer and post-consumer scrap metal				
Output 2.1: Awareness raising materials and awareness raising workshop developed and implemented.	Development of awareness programs and materials.	Limited environmental and health awareness on scrap metal recycling and U-POPs issues in both the users and the general public.	Development of at least 1 video material and 2 relevant publication on the issue of dioxin and BAT and BEP	.
	Number of awareness raising initiatives.		At least 2 awareness raising campaigns conducted for the users of scrap metal and the general public.	Project website has been developed since October 2019 and fully completed, both dynamic and static information (www.GreenScrapMetalThailand.com). Both project website and Facebook fanpage (Green Scrap Metal Thailand) have been regularly updated on news, activities and other information from the project. Awareness raising event and campaign for the general public and the workers on issues related to POPs, on environment and health issues of scrap metals recycling Program were developed and have been taking place since Q4 2020. The third event titled Green Scrap Metal Thailand 2023: Change for the Better was held on Thursday 23 February 2023 in a form of hybrid event (virtual and physical participation).
	Number of participants (male/female) in the awareness raising campaigns.		At least 2 participants from the relevant stakeholders identified in the document participating in awareness raising campaigns. Equal access to training for men and women ensured.	For the third event, 276 participants (consisting of 136 males and 140 females) joined the event via Zoom and onsite.
Output 2.2: Technicians and operators of the scrap metal sector are trained on BAT/BEP	Number of institutions involved in setting up training materials and providing training sessions.	Training materials for a sound management of scrap metal recycling is not available. Limited	Training on sound scrap metal management and BAT/BEP delivered to at least 100	The 14 training modules and materials were fully developed in August 2020 by Chulalongkorn University in consultation with DPIM, PCD, DEQP and Department of Industry Works (DIW).

Project Strategy	KPIs/Indicators	Baseline	Target level	Progress in FY23
		knowledge and limited technical capacity among collectors, recyclers, and users of scrap metal on BAT/BEP applicable to the scrap metal recycling chain.	trainees. Equal access to training for men and women ensured.	The third round of training on these 14 Modules was conducted in a hybrid format from the last quarter of 2022 until the second quarter of 2023.
	Number of people (male/female) trained on BAT/BEP. Availability of training reports.			In the third round, there were 1,471 representatives of relevant institutions with 56.90% women. The training reports for Module 6-19 were conducted during December 2020 – May 2023.
	Number of participants (male/female) to the Study Tour. Number of companies visited during the Study Tour.			The PSC meeting on 11 July 2022 endorsed the Study Tour on BAT/BEP Application in the Metallurgical Industries in Japan which was held during 6 – 12 November 2022. The group consisted of 16 technical officials of which 62.5% are women.
Component 3 – Pilot project for the demonstration of BAT/BEP in selected metal recycling facilities.				
Outcome 3. State-of-the-art primary and secondary measures for U-POPs release reduction in selected facilities identified and deployed				
Output 3.1: BAT/BEP measures identified and implemented for scrap collectors and scrap consumers	Number of BAT/BEP identified, implemented and demonstrated. Amount of incremental investment made. Quantity of PCDD/F and other pollutant releases avoided, reduced or eliminated. Number of documents produced for each pilot case.	BAT/BEP measures in thermal processes of the metallurgical industry have never been demonstrated in Thailand.	Demonstrations and assessments of the BAT/BEP measure agreed with 4 enterprises carried out and completed at the selected pilot sites. Not less than 23 g-TEQ/year releases reduction by BAT/BEP introduction in the demonstration facilities. Incremental investment in USD reported.	Assessment report for each demonstrated facilities was completed in a previous reporting period. Reduction of Dioxin releasing from all facilities is being calculated from 4 facilities while additional facilities are being engaged with project. There are 4 facilities invested on the improvement of production process through the promotion of BAT/BEP approximately 10 million USD.
Output 3.2: Training of technical staff and other potentially interested local stakeholders (environmental authority, SMEs, scrap collectors, etc.) in the management of BAT/BEP undertaken	Number of people (male/female) trained on BAT/BEP. Availability of training reports.	Insufficient knowledge, experience and technical capability of industrial manager and technical staff on BAT/BEP for the reduction of U-POPs releases in the metal scrap recycling sector.	Training of at least 50 technical professionals on BAT/BEP applicable to the industrial sector. Equal access to training for men and women ensured.	The project developed the following training program including training materials and the Draft technical guidance from December 2020 until August 2021 for (i) SMEs and recycling associations on BAT/BEP concept for sustainable scrap metal management and (ii) industry associations and operators of industrial facilities to introduce BAT/BEP concepts on measures, approaches, and technology to reduce U-POPs releases. The number of participants trained exceeded the project's target of at least 50 technical professionals as set in Project Document. -

Project Strategy	KPIs/Indicators	Baseline	Target level	Progress in FY23
				However, the following modules are expected to be conducted onsite at the facilities in Q3 2023. Module 22 Reduction of U-POPs using BAT/BEP and Module 23 Measurement and analyzing of U-POPs
Output 3.3:Policy and regulatory framework	Number of documents drafted and disseminated. National action plan for replication developed and approved.	Currently, there is no action plan for replication.	A national action plan including estimates of costs and benefits to the adoption of BAT/BEP finalized and endorsed.	A national policy framework was developed and disseminated, as reported in the previous reporting period. In addition, the National focal point of Stockholm Convention in Thailand also enquired project information as inputs to formulate the second NIP-POPs of Thailand. Hence, the project is mentioned in the NIP-POPs (2023-2027) which was approved by Thai Cabinet on 14 March 2023.
Component 4 – Monitoring and evaluation; knowledge management and dissemination				
Outcome 4: Effective monitoring and evaluation of project impact and sustainability implemented.				
Output 4.1:Project M&E designed and implemented.	Timely project implementation. M&E adequately conducted according to UNIDO and GEF standard. Timely availability of inception, annual (APRs, PIRs, AWPs) and evaluation (mid-term and final) project reports. Documentary evidence of M&E activities including but not limited to drafting TORs, selection and recruitment consultants and staff, review of substantial report.	Indicative Project Results Framework with outcome and output indicators and targets. Indicative M&E plan, budget and timeframe. New staff dedicated to the project and most of the key stakeholders will require specific training on UNIDO and GEF M&E procedures.	Inception workshop held within one month from project approval. Project management structure implemented and fully functional within 6-months from the approval of the project Training on monitoring procedures, including gender, and administrative processes held during Inception Workshop. Mid-term evaluation delivered within 3 years from project signature. Terminal evaluation report delivered within 3 months from project closure.	Target reached. Target reached. PMU staff was trained on project administration, UNIDO gender policy, and procurement process in FY20. Since October 2018, there has been 11 PSC Meetings for endorsing TORs, consultant selections, budget allocation and annual workplan including establishing Technical Woking Group from Component 1, 2 and 3 (TWG1, TWG2 and TWG3) and other project monitoring aspects, such as acknowledged PIR, including additional facilities to participate in the project. . The most recent PSC Meeting was on 24 February 2023 in Bangkok. From 1 July 2020 to 30 June 2023, the PMU has organized numerous coordinating meetings on both formal and informal level. The key meetings include the following but not limited to: - 2 PSC meetings to quarterly monitor the implementation and review the progress reports from consultants of each Component. - 12 TWG meetings to quarterly monitor the implementation and review the progress reports from consultants of each Component. - 1 experts meeting with project partners. - 7 expert meetings. - 1 Technical discussion meeting among DPIM PMU and national consultant.
Output 4.2:Lessons learnt disseminated	Implementation of a communication strategy for documenting and disseminating lessons learnt and project experiences.	None	Communication strategy developed. Lessons and experience documented and	A technical seminar during the third event 'Green Scrap Metal Thailand 2023: Change for the Better' took place on 23 February 2023 on BAT/BEP application in Thai smelters. Representatives from 3 selected facilities which completed the production process

Project Strategy	KPIs/Indicators	Baseline	Target level	Progress in FY23
	Number of communications Materials and dissemination events conducted.		disseminated in at least 2 workshops/ conferences.	improvement shared their experience with 276 participants.

III. Project Risk Management

1. Please indicate the overall project-level risks and the related risk management measures: (i) as identified in the CEO Endorsement document, and (ii) progress to-date. Please expand the table as needed.

	(i) Risks	(i) Risk level FY 22	(i) Risk level FY 23	(i) Mitigation measures	(ii) Progress to-date	New defined risk[5]
1	**Component 1. Policy and regulatory framework** Lack of coordination and cooperation between institutional stakeholders such as MoI and MONRE in the development of new or additional regulatory measures for environmental and health protection from metal recovery activities.	Low risk (L) Low risk (L)	Low risk (L)	During the preparatory phase of the project proposal all key institutional stakeholders showed a strong commitment in addressing environmental issues and a positive working relationship between them. All institutional stakeholders will be represented in the Project Steering Committee in order to be able to express their ideas with respect to roles and responsibilities of their own institution and to participate in the development of new or additional legislation. Multi- and inter-ministerial interactions will facilitate consensus in legislative improvement	Key institutional stakeholders were appointed members of the Technical Working Group assessing the outputs of this component. Thus, all members are informed of their tasks and responsibilities on the revisions/improvements and enforcement of the legislation. The risk level remained the same in FY23 and the project has continued to implement the mitigation measures of FY22.	☐
2	The development of new or additional regulatory measures for metal recovery activities is being opposed by the private sector and thus not adopted.	Modest risk (M)	Modest risk (M) Modest risk (M)	The industrial sector has already expressed its commitment to participate in the project thus indicating its awareness of the problem posed by U-POPs. Possible risks to reconsideration by the industry will be mitigated by targeted training and awareness raising campaigns. Demonstration projects, benefiting from the advice of international experts, will present the feasibility of the implementation of BAT and BEP.	The private sector has been fully engaged in the project. The revised policies/regulation will be communicated to them in a timely and proper manner. In year 2022/2023, project organized the 19 training modules and national event for awareness raising among the relevant stakeholders and representatives from the facilities which completed BAT/BEP application also shared their experience including the benefit of project partner. It is also planned to have consultation with metal recycling facilities, government agencies, Thai researchers, NGOs, and media regarding to new regulations in Q3Y2023	☐
1	**Component 2. Information dissemination and capacity building** Private stakeholders (recycling and industry associations, operators of industrial facilities, etc.) are not actively participating in the training components of the project.	Low risk (L) Low risk (L)	Low risk (L)	Relevant target stakeholders will be identified and engaged early on in the project's implementation and encouraged to participate in capacity building and awareness raising activities. Training needs will be assessed, and pre- and post-training analysis will be undertaken.	Target stakeholders have been fully identified and are engaged in the capacity building and training activities of the project. Those representatives from public sector who attended training module 1-5 and private sector who attended the training module 6-19 took Pre/Post test. Consequently, the top score taker of each module received certificate from Director-General of DPIM during the annual event of the project.	☐

[5] New risk added in reporting period. Check only if applicable.

	(i) Risks	(i) Risk level FY 22	(i) Risk level FY 23	(i) Mitigation measures	(ii) Progress to-date	New defined risk[5]
2	Low participation and interest from the workers and the general public in the education program.	Modest risk (M)	Modest risk (M) Modest risk (M)	Public awareness activities will be carefully designed, and different methodologies and targeted materials will be developed to generate interest and participation. Issues broader than U-POPs will be addressed such as sound municipal waste management and waste separation and recycling. The dissemination of information on U-POPs, environment and health issues linked to scrap metals recycling will be addressed through a careful design of awareness raising products including the use of social media networks and with the assistance of professional organizations for the arrangement of promotional events and activities.	Public awareness activities have been carefully designed to attract relevant and high number of participants. However, some of the activities have been delayed due to the pandemic. The training program in year 2022/2023 was schedules almost every month and disseminated to industrial associations and Industrial Estate Authority of Thailand and relevant agencies to acknowledge and publicize. Before the third annual event the Photo Contest Campaign "Greening the Scrap Metal for the Better Changes" was launched and disseminated to the academic institutions including including schools and colleagues both by social media and invitation letters.	☐
1	**Component 3: Pilot project for the demonstration of BAT/BEP in selected metal recycling facilities.** Low co-operation among scrap recyclers, smelter facilities and other stakeholders.	Modest risk (M)	Modest risk (M) Modest risk (M)	The success of the project depends directly on the support and co-operation of all stakeholders. These will be fully involved since the initial stages of the project implementation in order to identify all potential conflicting interest. The project will ensure the co-operation of the involved stakeholders via regular communication and outreach.	The project has fully engaged the private sector. It has inked MOUs with 4 demonstration partners and continuous dialogue is being undertaken. Contractual agreements have been finalized with all 4 demonstration facilities. After completed BAT/BEP application, they were invited to share their result with other both at project national event which participants are representative of stakeholders and regional roundtable organized by UN TH during CEO Forum 2023 in Bangkok.	☐
2	BAT/BEP implementation is no longer supported by the private sector due to reduced commitment, economic and financial reasons linked to high investment and operating costs, unforeseen technical or environmental problems.	Modest risk (M)	Modest risk (M) Modest risk (M)	Private sector companies were involved during the PPG phase for the identification of possible demonstration activities that could be performed during the project implementation. Whenever possible, the effective and economic reduction of U-POPs releases was linked to energy efficiency and material efficiency improvements in order to improve profitability and thus encouraging them in the formulation of the demonstration projects. The possibility of having the support of international experience in planning and carrying out activities, the support in technology transfer and, last but not least, the financial assistance that GEF money provides are all incentives for an active participation of the private sector. The project specifically seeks to reduce the risk of abandoning the commitment through capacity building and awareness raising activities in order to help the private sector in identifying opportunities to participate and in finding potential benefits. This will enable enterprises to have a complete understanding of the problem and to take a more general and long-term vision.	This risk has been fully mitigated with MOUs signed between DPIM and the demonstration companies However, the pandemic has significantly impacted their investment plan. Hence, the project has been in close communication with those facilities to provide technical support and consultations regarding environmental concern, to invite them to be speakers or participate the developed training program, etc.	

	(i) Risks	(i) Risk level FY 22	(i) Risk level FY 23	(i) Mitigation measures	(ii) Progress to-date	New defined risk[5]
3	BAT/BEP measures will not achieve the expected release reduction target.	Modest risk (M)	Modest risk (M) Modest risk (M)	Demonstration projects are always uncertain as to the final outcome due to their inherent complexity. This risk is also linked to the fact that the emission estimates in the current scenario and in the BAT-based final scenario are based on default emission values or, in some cases, on expert judgment. During the project, each demonstration site will undergo through in-deep assessment of technical feasibility, expected benefits, cost, and environmental and social impact. Design of projects will be adjusted as needed to account for conditions identified during these assessments. Demonstration projects will be built on techniques and practices recognized by the BAT/BEP guidelines/guidance developed under the Stockholm Convention, documents inspired by the EU regulation (BREFs) and other guidance documents on selection of suitable technologies.	This risk has been mitigated as the project team has been providing technical consultation to each demonstrated facility. Post monitoring campaign after BAT/BEP measures was implemented at 3 facilities which achieve significant reduction of dioxin releasing from applying suitable technology. This serves as a good basis to expect that the rest of the selected facilities, completing their investment plan on BAT/BEP application next year, will achieve the U-POPs reduction along with energy efficiency and higher productivity.	
1	**Component 4: Monitoring and evaluation; knowledge management and dissemination** Failure in achieving a long-term reduction of U-POPs releases because of the difficulty to replicate and sustain the project results.	Low risk (L)	Low risk (L)	The strengthening of the policy and regulatory framework and the promulgation of national standards, coupled with the raised awareness and the capacity transferred to the enterprises through the training activities should provide the basis for the sustainability of the outputs of the project in the long term. To mitigate the risk, the project will support close stakeholder consultation to accept and sustain national industry and environmental policies and motivate manufacturing companies to comply with these policies.	The project has formulated a policy and regulatory framework in consultation with relevant agencies from both public and private sector after conducting several small group discussions and a national workshop including public hearing via the project website. Besides, the 23 developed training modules consisting of the principles of U-POPs reduction and BAT/BEP application in scrap metal recycling industry were specifically designed for 4 target groups: Module 1-5: Regulatory authorities, professionals, research institutions; Module 6-10: Recycling associations and SMEs; Module 11- 17 Industry operators; Module 18-23 Operators of scrap metal sector.	
2	Failure in achieving a wide (national, regional, global) dissemination of lessons learned and project results.	Low risk (L)	Low risk (L)	Adequate dissemination of lesson learned, and project results is crucial to the replication and sustainability of project outcomes. This is strictly linked to the commitment of the managers of demonstration facilities to share experiences and results. The project recognize that some enterprises are reluctant to get involved in sharing their own experiences for confidentiality reasons. Design of the knowledge management and dissemination will be adjusted as needed to account for identified situations of sensitivity and confidentiality of information. The awareness raising and capacity building activities integrated into the project design should ensure sufficient understanding to allow enterprises to assume a more open attitude.	The project team has organized numerous events in collaboration with national partners and industrial facilities to disseminate lessons learned and results of the technology demonstration.	

	(i) Risks	(i) Risk level FY 22	(i) Risk level FY 23	(i) Mitigation measures	(ii) Progress to-date	New defined risk[5]
3	Risk due to the Covid-19 pandemic	Low risk (L)	Low risk (L)	A catch-up plan will be designed to ensure that delays are mitigated.	A catch-up plan has been devised to ensure that delays will be fully mitigated. Use of virtual platforms on project discussion has been implemented.	

2. If the project received a sub-optimal risk rating (H, S) in the previous reporting period, please state the actions taken since then to mitigate the relevant risks and improve the related risk rating. Please also elaborate on reasons that may have impeded any of the sub-optimal risk ratings from improving in the current reporting cycle; please indicate actions planned for the next reporting cycle to remediate this.

n/a

3. Please indicate any implication of the **COVID-19** pandemic on the progress of the project.

The outbreak of COVID-19 has affected project implementation. Due to economic uncertainties, the investment plans of the facilities were affected, and some companies reduced their investment scope. The Project Management team has identified and involved other companies to ensure the achievement of the global environmental benefits. Assessment of these new companies is currently being carried out.

Awareness raising activities and project implementation with stakeholders have also been postponed. However, a catch-up plan has been designed and will be implemented.

The project has suffered delays and an extension of 1 year to complete envisaged activitieshas been requested and approved.

4. Please clarify if the project is facing delays and is expected to request an **extension**.

Covid-19 has brought up several challenges, such as uncertainty of the future, an economic downturn forcing all 4 selected demonstration facilities to reduce or postpone their investment plans. Subsequently, this has caused the project to postpone the environmental sampling and the in-depth assessment as well as the training for the technicians from all 4 selected demonstration facilities. As a mitigation action, the project team has been scouting for new factories to join the project. In 2021/2022, the assessment of investment plans from 6 facilities resulted that only two of them met the project requirement. One lead recycling facility which had completed BAT/BEP application in Q3Y2022, and another steel recycling facility.
In 2022/2023, two facilities propose their concept of investment to the project and under consideration of TWG3.

Considering the current situation, a no-cost extension of the project was proposed and has been approved to extend the completion date from 6 June 2023 to 30 June 2024 to complete the following activities:

1. Additional investment in the promotion of BAT/BEP from existing and new participating factories.
2. Conduct post monitoring sampling in pilot facilities
3. Conduct the Terminal Evaluation.

4. Submission of relevant documents and transfer other project outputs, such as databases, PR materials, training programs, etc. to the DPIM as the main executing agency of project as well as other the project partners for further utilization, ensuring the sustainability of the project after its life cycle.

5. Please provide the **main findings and recommendations of completed MTR** and elaborate on any actions taken towards the recommendations included in the report.

Recommendations	Action Taken
1. Project represents good example for other countries, experiences can be used during the preparation and implementation of this type of project concerning to the U-POPs emission reduction and elimination.	Noted.
2. One of the important project outputs was the development of pilot projects to demonstrate new technologies to reduction of emissions of U-POPs in Thailand. The pilot projects have shown potential to attract investments for development of applicable environmental technologies to reduce U-POPs emissions and chemical pollution. A mechanism should be developed to catalyse investments in order to meet the targets of the National Implementation Plan of the SC on POPs and other relevant national strategic documents and approaches.	The project management team at the PSC meeting acknowledged this recommendation. The Technical Working Group of Component 1: Policy and regulatory framework has been working on development of mechanism to catalyze the investment as following: - Drafting legal and administrative measures necessary to promote BAT/BEP applications in metal recycling facilities as criteria for new facilities, and to require staff to be trained about U-POPs and BAT/BEP in metal recycling facilities; - Recommended values for national dioxin emission standards for metal recycling facilities and define procedure for enforcement; - Drafting the economic incentives for the private sector to improve their operations by BAT/BEP application to reduce or eliminate releases of U-POPs.
3. It is necessary to continue the identification and inventory of all U-POPs emission sources. The inventory needs to be closely connected with similar inventories in other parts of the country and the on-going national inventory on persistent organic pollutants under the Stockholm Convention on POPs.	During drafting of the 2nd NIP/POPs of Thailand, all U-POPs emission sources were identified, resulting in an update of the POPs inventory of Thailand. Hence, the results of the environmental monitoring campaign at the demonstrated scrap recycling facilities will certainly be communicated to the Stockholm Convention National Focal Point of Thailand (SC NFP) for updating the inventory.
4. The project has delivered a set of useful results valuable for future projects concentrated on tackling the environmental problems of Thailand. To make the project results and the positive experiences gained from its implementation available, the project management needs to ensure that results are communicated to all stakeholders, decision makers, the scientific community, and the broader public.	Regarding the sustainability of the project outcomes, the results of the project implementation have been incorporated into the national policies and plans thanks to the fact that one of PSC members is representative from SC NFP, Pollution Control Department (PCD). The PCD has begun to formulate the new Pollution Management Plan (2022 - 2027) and is revising the 2nd NIP/POPs before submitting it to the Secretariat of the Stockholm Convention in 2023. It was committed and is highly possible to integrate in these NIP/POPs Plans the National Policy Framework that Component 1 of this project provides.
5. The project management should ensure, to the extent possible, that the project results, conclusions, and recommendations are used in the development of the National Implementation Plan of the Stockholm Convention on Persistent Organic Pollutants for Thailand.	

Recommendations	Action Taken
6. As very useful tool of this project was the networking of academia and public institutions; it will be very useful to continue in this especially as far as continuation of the proposed training activities. Education and awareness raising are key elements of the successful implementation of the project conclusions and the Stockholm Convention on POPs measures.	The project has continued to conduct 19 training modules to various target groups in the metal scrap recycling supply chain in Thailand in 2022-2023, including research institutes and academia along with annual awareness raising events to disseminate the knowledge on U-POPs and measures based on BAT/BEP to prevent generation of U-POPs from the secondary metals producing industry and based on strategies of sustainable production and consumption. Since those training modules were developed under the collaboration with various national tertiary education institutions, it is foreseen that, at the very least, the following institutions: Chulalongkorn University, National Institute of Development Administration (NIDA), Thammasat University and Suan Sunandha Rajabhat University will include this topic in their curricular programs.

IV. Environmental and Social Safeguards (ESS)

1. As part of the requirements for **projects from GEF-6 onwards**, and based on the screening as per the UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP), which category is the project?

☐ Category A project

☒ Category B project

☐ Category C project

(By selecting Category C, I confirm that the E&S risks of the project have not escalated to Category A or B).

Please expand the table as needed.

	E&S risk	Mitigation measures undertaken during the reporting period	Monitoring methods and procedures used in the reporting period
(i) Risks identified in ESMP at time of CEO Endorsement	Risk of inappropriate maintenance and operation of established equipment/ facilities and technology failure, which will result in excessive discharge of pollutants and environmental pollution.	1. Strict implementation of the project management system including adequate and appropriate maintenance, strict implementation of the operating manual, training of personnel on safety and operations.	**Component 1 Policy and regulatory framework** - N/A
			Component 2. Information dissemination and capacity building - N/A
			Component 3: Pilot project for the demonstration of BAT/BEP in selected metal recycling facilities. According to the Safety Occupational Health and Work Environment Act 2011 of Thailand, Section 16 requires the training of executives, supervisors and all employees on safety, occupational health and working environment. In addition, facilities also have to provide training to all new employees, in the case of entering a new job, changing jobs, changing workplace, or changing machinery or equipment which may endanger the employee's life, physical, mental or health. As the employers shall provide training to all employees before starting the work in response to the intent of the said law. It is therefore necessary to educate all employees on safety and operations.

	E&S risk	Mitigation measures undertaken during the reporting period	Monitoring methods and procedures used in the reporting period
			PMU also revisited and observed their obligations and found that PPE wearing is required for all employee and visitors, such as, facemask, high - visibility vest, gloves, safety helmet and shoes. Inclusion of additional facilities under Component 3 comes with safety management criteria. The latest visit was on May 26, 2022, on occasion of Mr. Collen Vixen Kelapile, President of the United Nations Economic and Social Council (ECOSOC) joined the 78th Session of the Economic and Social Commission for Asia and the Pacific (ESCAP) in Bangkok and afterward had interest in visiting one of the project's demonstrating facilities located in the outskirt of Bangkok.
		2. Waste Management During the project there will be the provision of training on hazardous materials as well as adoption of official policies for dealing with disposal of materials and environmental pollution.	**Component 1 Policy and regulatory framework** - N/A
			Component 2. Information dissemination and capacity building - N/A
			Component 3: Pilot project for the demonstration of BAT/BEP in selected metal recycling facilities. All pilot facilities have to comply with Hazardous Substances Act and Factory Act. Their industrial waste disposal must meet national guideline and they must submit the report to the Thai regulators at least once a year as a critical condition to renew factory license.
(i) Risks identified in ESMP at time of CEO Endorsement		3. The concentration of total suspended particles (TSP), NOx, non-methane hydrocarbon (NMHC)	**Component 1 Policy and regulatory framework** - N/A
			Component 2. Information dissemination and capacity building - N/A
			Component 3: Pilot project for the demonstration of BAT/BEP in selected metal recycling facilities. All pilot facilities have to comply with Thailand National Environmental Quality Enhancement Act and Factory Act. Their effluence and emission must meet the national standards so as the environmental impact assessment (EIA) monitoring report is required by law to submit to the Thai regulators at least once a year as a critical condition to renew business license. PMU also revisited and observed their obligations to EIA. During the reporting period, an environmental monitoring was conducted in the additional facilities. The project team sampled and analysed their emission and ambient according to Thai national standards to determine concentration of dioxin, PM10 and PM2.5.
	Low participation rates of females in project implementation	The project pursues thorough and gender responsive communication and ensure stakeholder involvement at all levels, with special regard to involving women and men, as well as civil society and non-governmental organizations promoting gender equality.	**Component 1 Policy and regulatory framework** **Component 2. Information dissemination and capacity building** **Component 3: Pilot project for the demonstration of BAT/BEP in selected metal recycling facilities.** All activities under 3 components were conducted with gender balanced participation, rationale rates of female, 30 – 65 percent of participants, such as PSC and TWGs members, key person of project partners and consultant teams. Project questionnaires, news and other PR media have been distributed to all stakeholders in scrap metal supply chain in Thailand by post, email, website and telephone communication. This includes the invitations to participate the project activities, such as technical consultations, trainings, workshops, annual events and site visit to the initial and additional facilities. Therefore, the

	E&S risk	Mitigation measures undertaken during the reporting period	Monitoring methods and procedures used in the reporting period
			rate of female participation is high as indicated in Section II. Targeted results and progress to-date.
(ii) New risks identified during project implementation (if not applicable, please insert 'NA' in each box)	Covid-19 related risks to - Co-financing expenses of the BISW, NTS and TMA might not be met. -implementation of Component 1 regarding to closing workshop of initial phase, and training Component 2 regarding to the Second Annual national awareness raising on BAT/BEP and U-POPs reduction and training	- Seek for new facilities with interest in the promotion of BAT/BEP	The PSC agreed to reallocate the budget and engage new facilities on September 24, 2020. To date, one of the initial and one of additional facilities have completed their BAT/BEP application. The verification was already conducted by UNIDO expert. Consequently, their partially reimbursement for financial support from project was granted. This has enabled more facilities to be contacted by the project for consultation and to have the opportunity to be project partners. These facilities are being assessed to be include in the project.
		- Social distancing, hand sanitizers and facial mask were used during closing workshop and trainings - regarding to Centre for COVID-19 Situation Administration of Thai government, public event requires limited number of people participating due to the social distancing.	The project team has provided alternative channels of participation to those who were interested tojoin the workshop in February 2021. The participants could attend in person or via online meeting tools or watch live broadcast on the internet. The 2nd Annual national event on 16-18 August 2021 was organized via online platform. The training on 19 modules were conducted both online and onsite. Onsite participants were required to show their Covid 19 Antigen Test Kit result until September 2022.

V. Stakeholder Engagement

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes** regarding engagement of stakeholders in the project (based on the Stakeholder Engagement Plan or equivalent document submitted at CEO Endorsement/Approval).

Relevant stakeholders have been fully engaged and committed to the delivery of project results. The project has constituted 3 TWGs, members of which are from different institutions and project partners, who provide technical inputs to project-related decisions. Additional scrap metal facilities have been engaged for ensuring the project target achievement.

Relevant stakeholders are being continuously consulted and engaged as evidenced by the various meetings held on V.3.

Project could get more attention from recycling facilities due to our current project partners from public and private sector's contribution in disseminating both direct and co- benefit from BAT/BEP application in the factories during meetings/seminars.

2. Please provide any feedback submitted by national counterparts, GEF OFP, co-financiers, and other partners/stakeholders of the project (e.g. private sector, CSOs, NGOs, etc.).

Various activities under the project have synergized well with the mission of project partners from the public sector and the results have led to new projects/initiative of those institutions.

As conclusion from the third event mentioned in section II Targeted results and progress to-date, the 3 representative facilities provided their feedback on the benefits of joining the project, including cost-saving, better raw materials management due to better scrap processing, less time and energy consumption, enhanced production capacity, and reduced green-house glass generation. The challenges during the implementation of BAT/BEP include lack of knowledge of U-POPs generation and new technology/equipment, which were fully addressed by the international experts' consultations and through

trainings.

According to the Post-survey result, facilities would like the relevant agencies to decide on tax exemption or reduction for the sector or to provide a one-stop service. In case that the new law is added, they would like to have enough time to adjust, and adequate trainings should also be provided for their clear understanding.

It is recommended to continue the training arrangement for all stakeholders in the metal scrap recycling supply chain to increase the number of participants and institutions involved.

Regulators/enforcers of relevant polices would like to have practical enforcement procedures and incentives which are adaptable to the national conditions while industrial enterprises would like to have practical regulations and policies and better technical and financial assistance in the application of BAT/BEP to reduce U-POPs emissions.

3. Please provide any **relevant stakeholder consultation** documents.

No.	D-M-Y	Activities/topics
1	30-May-2022	UNIDO experts meeting with ISIT DPIM PMU and Millcon Burapa Co., Ltd.
2	01-Jun-2022	UNIDO experts meeting with ISIT DPIM PMU
3	11-July-2022	Project Steering Committee (PSC) Annual meeting with TWGs
4	26-July-2022	Technical Working group for Component 1 (TWG1) meeting
5	27-Jul-2022	UNIDO experts meeting with ISIT DPIM PMU
6	14-Sep-2022	Technical Working group for Component 3 (TWG3) meeting
7	14-Sep-2022	UNIDO experts meeting with ISIT DPIM PMU
8	06-Oct-2022	Technical Working group for Component 2 (TWG2) meeting
9	25-Oct-2022	Technical Working group for Component 1 (TWG1) meeting
10	25-Oct-2022	Technical Working group for Component 2 (TWG2) meeting
11	23-Nov-2022	UNIDO experts meeting with ISIT DPIM PMU
12	30-Jan-2022	Technical Working group for Component 1 (TWG1) meeting
13	26-Jan-2023	UNIDO experts meeting with ISIT DPIM PMU
14	30-Jan-2023	Technical Working group for Component 2 (TWG2) meeting
15	07-Feb-2023	Technical Working group for Component 1 (TWG1) meeting
16	01-May-2023	Technical Working group for Component 1 (TWG1) meeting
17	15-Feb-2023	Technical Working group for Component 3 (TWG3) meeting
18	24-Feb-2023	Project Steering Committee (PSC) Annual meeting with TWGs
19	22-Mar-2023	UNIDO experts meeting with ISIT DPIM PMU
20	10-May-2023	UNIDO experts meeting with ISIT DPIM PMU
21	7-June-2023	Technical discussion among DPIM PMU and NIDA as national consultant regarding to formulation of new regulations
22	27-June-2023	Technical Working group for Component 1 (TWG1) meeting
23	28-June-2023	Technical Working group for Component 3 (TWG3) meeting

Relevant documentation maybe found in the following link.

VI. Gender Mainstreaming

1. Using the previous reporting period as a basis, please report on the **progress** achieved **on implementing gender-responsive measures** and **using gender-sensitive indicators,** as documented at CEO Endorsement/Approval (in the project results framework, gender action plan or equivalent),.

The project fully complies with the gender mainstreaming strategies as reflected in the project document, ensuring participation of both men and women in the decision-making process and reporting of gender-sensitive indicators in its activities.

The project ensured around 40-60% women in the composition of its TWG. All relevant activities ensured equal access to opportunities and more inclusive participation despite the metallurgical sector being a male-dominated industry. Such as 235 participants for training module 18-19 in year 2022/2023 whose target is technicians or machine operators in smelters, the male/female ratio is 47:53 while project annual event/national seminar, organized by project and partners in February 2023, the ratio is 49:51 from 209 onsite and 67 online participants

VII. Knowledge Management

1. Using the previous reporting period as a basis, please elaborate on any **knowledge management activities / products**, as documented at CEO Endorsement / Approval.

Knowledge Management is being monitored by the PMU which is responsible for the safekeeping of all reports/knowledge products generated from project activities.

A project website has been designed and maintained where public information and documents are shared. Some of the knowledge management products developed under the project include the following:

9222_ PR Videos, please access via project web site (www.GreenScrapMetalThailand.com) for

- Project introduction 1 minute
- Overview of Dioxin and BAT/BEP in Scrap Metal Supply Chain 3 minutes
- BAT/BEP Application in Scrap Metal Supply Chain to reduce Dioxin Generation 10 minutes

9222_ VDO clips, please access via project YouTube Channel “Green scrap metal project” (https://www.youtube.com/channel/UCt4WRQmEzfyBXSwqqXTYCmQ/videos)

- 4 from final round contest as awareness raising campaign.
- Virtual prototype of BAT/BEP Application in scrap metal recycling facilities to reduce U-POPs generation
- VDO clips for Virtual exhibition of project and partners

9222_ Wan Mai (New Day) Variety: Get to know “U-POPs”, industrial pollutants, more harmful substances than PM2.5, this documentary was broadcast in **T**haiPBS national television. https://program.thaipbs.or.th/watch/SA0l0M

9222_ Final Report of Component 1: initial phase (2019-2021) and its annex 1- 5; Policy Framework, Technical Guidance, Training program for national authorities, Database Manual Operation, and Survey https://1drv.ms/u/s!AjDNWe5pWajPv3zn_M5nNJT1Zt-w?e=nCZvfA

2. Please list any **relevant knowledge management mechanisms / tools** that the project has generated.

9222_ Project website (www.GreenScrapmetalThailand.com)

9222_ Interactive virtual prototype on BAT/BEP application in scrap metal recycling supply chain to reduce U-POPs releasing (https://greenscrapmetalthailand.com/model)

9222_Project Facebook page: โครงการจัดการเศษโลหะอย่างยั่งยืน Green Scrap Metal Thailand (https://web.facebook.com/profile.php?id=100064815726446)

9222_VDO and other training materials of each module is being transferred to https://dpimacademy.dpim.go.th

These are tools/platforms developed by the project to access knowledge on U-POPs management and BAT/BEP application in scrap metal recycling supply chain from anywhere/anytime which can be continuously updated/added. The website and Facebook platform also allow the public/followers to obtain the latest information from the project and can make comments or inquiry with PMU such as training program. The online KM Platforms are also used for registration and subsequent, follow-ups by interested stakeholders.

VIII. Implementation progress

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes achieved/observed** with regards to project implementation.

Overall, all project components have been executed efficiently by the national institutions contracted as service providers of the project in close collaboration with the PMU and DPIM. Please refer to progress to date on the respective project outputs.The PSC and TWG member have been providing strong support on the project implementation and have been meeting regularly to assess and provide recommendations to ensure the timely and effective delivery of project results.

The main challenge at the moment is the investment commitment of the demonstration facilities which have been heavily impacted by the economic issues associated with the Covid-19 pandemic.

As a result of continuous communication either direct or indirect means such as meetings, seminars, contest, trainings, emails, re-visit, etc, the project activities has got more attention and participation from the stakeholder both public and private sector including NGOs and academia. Hence, awareness raising regarding to U-POPs reduction by BATBEP application has become wider even among primary school students.

2. Please briefly elaborate on any **minor amendments**[6] to the approved project that may have been introduced during the implementation period or indicate as not applicable (NA).

Please tick each category for which a change has occurred and provide a description of the change in the related textbox. You may attach supporting documentation, as appropriate.

☐	Results Framework	N/A
☐	Components and Cost	N/A
☐	Institutional and Implementation Arrangements	N/A
☐	Financial Management	N/A
☒	Implementation Schedule	The outbreak of COVID-19 has delayed the investment plan of demonstrated recycling facilities and their scope of BAT/BEP implementation. An extension of one year from June 2023 to June 2024 has been approved.
☐	Executing Entity	N/A
☐	Executing Entity Category	N/A
☐	Minor Project Objective Change	N/A
☐	Safeguards	N/A

[6] As described in Annex 9 of the *GEF Project and Program Cycle Policy Guidelines*, **minor amendments** are changes to the project design or implementation that do not have significant impact on the project objectives or scope, or an increase of the GEF project financing up to 5%.

☐	Risk Analysis	N/A
☐	Increase of GEF Project Financing Up to 5%	N/A
☒	Co-Financing	Additional scrap metal facilities have been engaged for ensuring the project target achievement.
☐	Location of Project Activities	N/A
☐	Others	

3. Please provide progress related to the **financial implementation** of the project.

The project is currently at 67.77% implementation rate with a total expenditure of US$ 3,049,535.83 as of June 30,2022. Within FY 2023, the expenditure was USD 235,677.93.

Activities under Components 1, 2 and partly 3 were subcontracted to reputable national institutions following open competition biddings. The main expenditure is under Component 3 comprising of the subsidy to the partner companies on BAT/BEP investments in their facilities.

The details of the project disbursement are provided below:

PROJECT DELIVERY REPORT

Project:	150186 - GREENING OF SCRAP METAL VALUE CHAIN THROUGH THE PROMOTION OF BAT/BEP TO REDUCE U-POPS RELEASES FROM RECYCLING FACILITIES	Project Manager:	Carmela Centeno	Project Validity: Status:	01.05.2016 - 31.07.2024 Implement		
Reporting Period:	23.05.2016 - 30.06.2023	Project Theme:	Energy and Environment	Country:	Thailand	Region	Asia and Pacific

Sponsor Nr.	Sponsor	Grant	Grant Description	Fund	Currency	Grant Status	Grant Validity
400150	GEF - Global Environment Facility	2000003353	GEF THAILAND	GF	USD	Closed	23.05.2016 - 31.01.2019
400150	GEF - Global Environment Facility	2000003914	U-POPS_THAILAND	GF	USD	Authority to implement	06.06.2018 - 30.06.2024

	Description	Released Budget Current Year (a)	Obligations Current Year (b)	Disbursements Current Year (c)	Expenditures Current Year (d=b+c)	Total Agreement Budget (e)	Released Budget (f)	Obligations + Disbursements (g)	Funds Available* (h=f-g)	Support Cost (i)	Total Expenditures (j=g+i)
2000003353											
150186-1-01-01	Project Document Prepared	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	0.00	0.00	0.00	0.00	34,28	34,28	34,28	0,00	0,00	34,28
1500	Local Travel	0.00	0.00	0.00	0.00	8,346,06	8,346,06	8,346,06	0,00	0,00	8,346,06
1700	Nat.Consult./Staff	0.00	0.00	0.00	0.00	59,626,00	59,626,00	59,626,00	0,00	0,00	59,626,00
2100	Contractual Services	0.00	0.00	0.00	0.00	65,263,67	65,263,67	65,263,67	0,00	0,00	65,263,67
3000	Train/Fellowship/Study	0.00	0.00	0.00	0.00	4,513,38	4,513,38	4,513,38	0,00	0,00	4,513,38
3500	International Meetings	0.00	0.00	0.00	0.00	4,279,38	4,279,38	4,279,38	0,00	0,00	4,279,38
5100	Other Direct Costs	0.00	0.00	0.00	0.00	5,713,81	5,713,81	5,713,81	0,00	0,00	5,713,81
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0,00	0,00	0,00	0,00	14,250,00	14,250,00
150186-1-01-01	Total	0,00	0,00	0,00	0,00	147,776,58	147,776,58	147,776,58	0,00	14,250,00	162,026,58
2000003353	Total	0,00	0,00	0,00	0,00	147,776,58	147,776,58	147,776,58	0,00	14,250,00	162,026,58
2000003914											
150186-0-01-01	Policy and Regulatory Framework	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	0.00	0.00	0.00	0.00	0,00	0,00	0,00	0.00	0,00	0,00
1500	Local Travel	0.00	0.00	0.00	0.00	4,844.15	4,844.15	4,844.15	0.00	0,00	4,844.15
1700	Nat.Consult./Staff	0.00	0.00	0.00	0.00	0,00	0,00	0,00	0.00	0,00	0,00
2100	Contractual Services	121,850.81	89,926.74	30,329.62	120,256.36	268,440.29	268,440.29	266,845.84	1,594.45	0,00	266,845.84
3000	Train/Fellowship/Study	0.00	0.00	0.00	0.00	0,00	0,00	0,00	0.00	0,00	0,00
4500	Equipment	0.00	0.00	0.00	0.00	0,00	0,00	0,00	0.00	0,00	0,00
5100	Other Direct Costs	0.00	0.00	0.00	0.00	0,00	0,00	0,00	0.00	0,00	0,00
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0,00	0,00	0,00	0.00	25,810,53	25,810,53
150186-0-01-01	Total	121,850.81	89,926.74	30,329.62	120,256.36	273,284.44	273,284.44	271,689.99	1,594.45	25,810,53	297,500.52

PROJECT DELIVERY REPORT		Project:	150186 • GREENING OF SCRAP METAL VALUE CHAIN THROUGH THE PROMOTION OF BAT/BEP TO REDUCE U-POPS RELEASES FROM RECYCLING FACILITIES	Project Manager:	Carmela Centeno	Project Validity: Status:	01.05.2016 • 31.07.2024 Implement
Reporting Period:	23.05.2016 • 30.06.2023	Project Theme:	Energy and Environment	Country:	Thailand	Region	Asia and Pacific

Sponsor Nr.	Sponsor	Grant	Grant Description	Fund	Currency	Grant Status	Grant Validity
400150	GEF • Global Environment Facility	2000003353	GEF THAILAND	GF	USD	Closed	23.05.2016 • 31.01.2019
400150	GEF • Global Environment Facility	2000003914	U-POPS_THAILAND	GF	USD	Authority to implement	06.06.2018 • 30.06.2024

	Description	Released Budget Current Year (a)	Obligations Current Year (b)	Disbursements Current Year (c)	Expenditures Current Year (d=b+c)	Total Agreement Budget (e)	Released Budget (f)	Obligations + Disbursements (g)	Funds Available* (h=e-g)	Support Cost (i)	Total Expenditures (j=g+i)
150186-0-01-02	Information Dissemination and Capacity	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	0,00	0,00	0,00	0,00	91,719,65	91,719,65	86,719,65	5,000,00	0,00	86,719,65
1500	Local Travel	5,000,00	0,00	0,00	0,00	91,719,65	91,719,65	86,719,65	5,000,00	0,00	86,719,65
1700	Nat.Consult./Staff	42,000,00	23,766,97	7,018,97	30,785,94	42,000,00	42,000,00	30,785,94	11,214,06	0,00	30,785,94
2100	Contractual Services	175,027,56	(6,052,64)	7,142,76	1,090,12	548,790,50	548,790,50	374,853,06	173,937,44	0,00	374,853,06
3000	Train/Fellowship/Study	10,165,16	(4,736,84)	5,168,54	431,70	20,000,00	20,000,00	10,266,54	9,733,46	0,00	10,266,54
3500	International Meetings	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
4500	Equipment	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
5100	Other Direct Costs	2,376,77	0,00	134,19	134,19	7,643,92	7,643,92	5,401,34	2,242,58	0,00	5,401,34
9300	Support Cost IDC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	48,262,57	48,262,57
150186-0-01-02	**Total**	**234,569,49**	**12,977,49**	**19,464,46**	**32,441,95**	**710,154,07**	**710,154,07**	**508,026,63**	**202,127,54**	**48,262,57**	**556,289,10**
150186-0-01-03	BAT/BEP Demonstrated	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	12,000,00	0,00	0,00	0,00	12,000,00	12,000,00	0,00	12,000,00	0,00	0,00
1500	Local Travel	24,155,27	0,00	0,00	0,00	25,000,00	25,000,00	844,73	24,155,27	0,00	844,73
1700	Nat.Consult./Staff	17,387,08	(0,01)	23,181,26	23,181,25	50,500,00	50,500,00	56,294,17	(5,794,17)	0,00	56,294,17
2100	Contractual Services	708,258,99	(45,661,38)	84,009,65	38,328,27	2,959,748,32	2,959,748,32	1,885,817,60	1,073,930,72	0,00	1,885,817,60
3000	Train/Fellowship/Study	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
4500	Equipment	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
5100	Other Direct Costs	3,845,73	50,66	1,809,69	1,860,35	9,000,00	9,000,00	7,014,62	1,985,38	0,00	7,014,62
9300	Support Cost IDC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	185,247,28	185,247,28
150186-0-01-03	**Total**	**765,647,07**	**(45,630,73)**	**109,000,60**	**63,369,87**	**3,056,248,32**	**3,056,248,32**	**1,949,971,12**	**1,106,277,20**	**185,247,28**	**2,135,218,40**

*** Does not include Unapproved Obligations**

PROJECT DELIVERY REPORT		Project:	150186 • GREENING OF SCRAP METAL VALUE CHAIN THROUGH THE PROMOTION OF BAT/BEP TO REDUCE U-POPS RELEASES FROM RECYCLING FACILITIES	Project Manager:	Carmela Centeno	Project Validity: Status:	01.05.2016 • 31.07.2024 Implement
Reporting Period:	23.05.2016 • 30.06.2023	Project Theme:	Energy and Environment	Country:	Thailand	Region	Asia and Pacific

Sponsor Nr.	Sponsor	Grant	Grant Description	Fund	Currency	Grant Status	Grant Validity
400150	GEF • Global Environment Facility	2000003353	GEF THAILAND	GF	USD	Closed	23.05.2016 • 31.01.2019
400150	GEF • Global Environment Facility	2000003914	U-POPS_THAILAND	GF	USD	Authority to implement	06.06.2018 • 30.06.2024

	Description	Released Budget Current Year (a)	Obligations Current Year (b)	Disbursements Current Year (c)	Expenditures Current Year (d=b+c)	Total Agreement Budget (e)	Released Budget (f)	Obligations + Disbursements (g)	Funds Available* (h=e-g)	Support Cost (i)	Total Expenditures (j=g+i)
150186-0-51-01	Project Management and Monitoring	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	35,000.00	0.00	0.00	0.00	35,000.00	35,000.00	0.00	35,000.00	0.00	0.00
1500	Local Travel	7,000.00	0.00	0.00	0.00	11,427.22	11,427.22	4,427.22	7,000.00	0.00	4,427.22
1700	Nat.Consult./Staff	8,264.32	8,774.47	9,815.33	18,590.80	240,497.20	240,497.20	250,823.66	(10,326.46)	0.00	250,823.66
2100	Contractual Services	12,000.00	0.00	802.22	802.22	12,000.00	12,000.00	802.22	11,197.78	0.00	802.22
3000	Train/Fellowship/Study	15,000.00	0.00	0.00	0.00	27,141.25	27,141.25	12,141.25	15,000.00	0.00	12,141.25
3500	International Meetings	0.00	0.00	0.00	0.00	2,575.31	2,575.31	2,575.31	0.00	0.00	2,575.31
4300	Premises	0.00	0.00	0.00	0.00	6,645.04	6,645.04	6,645.04	0.00	0.00	6,645.04
4500	Equipment	7,031.04	0.00	0.00	0.00	13,103.78	13,103.78	6,072.74	7,031.04	0.00	6,072.74
5100	Other Direct Costs	2,553.06	0.00	216.73	216.73	21,923.37	21,923.37	19,587.04	2,336.33	0.00	19,587.04
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28,792.27	28,792.27
150186-0-51-01	**Total**	**86,848.42**	**8,774.47**	**10,835.28**	**19,609.75**	**370,313.17**	**370,313.17**	**303,074.50**	**67,238.67**	**28,792.27**	**331,866.77**
150186-0-53-01	Evaluation	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	0.00	0.00	0.00	0.00	65,000.00	65,000.00	12,665.07	52,334.93	0.00	12,665.07
1700	Nat.Consult./Staff	0.00	0.00	0.00	0.00	24,988.00	24,988.00	4,097.15	20,890.85	0.00	4,097.15
5100	Other Direct Costs	0.53	0.00	0.00	0.00	12.00	12.00	11.47	0.53	0.00	11.47
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,593.50	1,593.50
150186-0-53-01	**Total**	**0.53**	**0.00**	**0.00**	**0.00**	**90,000.00**	**90,000.00**	**16,773.69**	**73,226.31**	**1,593.50**	**18,367.19**
2000003914	**Total**	**1,208,916.32**	**66,047.97**	**169,625.96**	**235,677.93**	**4,500,000.00**	**4,500,000.00**	**3,349,535.83**	**1,450,464.17**	**289,706.15**	**3,639,241.98**
150186	**USD Total**	**1,208,916.32**	**66,047.97**	**169,625.96**	**235,677.93**	**4,647,776.58**	**4,647,776.58**	**3,197,312.41**	**1,450,464.17**	**303,666.15**	**3,501,255.56**

*** Does not include Unapproved Obligations**

Report Prepared on: 19.07.2023

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IX. Work Plan and Budget

1. Please provide **an updated project work plan and budget** for the remaining duration of the project, as per last approved project extension. Please expand/modify the table as needed.

Outputs by Project Component	2020				2021				2022				2023				2024				GEF Grant Budget Available (US$)
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Component 1 – Policy and regulatory framework Outcome 1: Policy and regulatory framework strengthened and enhanced for theimplementation of a sound management of metal recycling in compliance with the Stockholm Convention requirements.																					
Output 1.1: Scrap metal value chain assessed and interventions identified.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	1,594.45
Output 1.2: One (1) database capturing various aspects of the metal recycling chain, as a new tool for policy makers, compiled.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☒	☐	☐	
Output 1.3: Specific guidelines on environment, health and safety measures in the metal recycling chain value developed.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	
Output 1.4: Improved and harmonized national policies and regulations for environmental and health protection from metal recovery activities.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☒	☒	☒	
Component 2 – Information dissemination and capacity building Outcome 2: Outcome 2.1: Increased awareness on U-POPs and BAT/BEP concepts by relevant stakeholders, Outcome 2.2: Improved national capacity in the sound management of the recycling chain of scrap metal.																					
Output 2.1:Awareness raising materials and awareness raising workshop developed and implemented.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	202,127.54

Outputs by Project Component	2020				2021				2022				2023				2024				GEF Grant Budget Available (US$)
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Output 2.2: Technicians and operators of the scrap metal sector are trained on BAT/BEP	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☒	☒	☐	
Component 3 – Component 3. Pilot project for the demonstration of BAT/BEP in selected metal recycling facilities Outcome 3: State-of-the-art primary and secondary measures for U-POPs release reduction in selected facilities identified and deployed.																					
Output 3.1:BAT/BEP measures identified and implemented for scrap collectors and scrap consumers	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	1,106,277.20
Output 3.2:Training of technical staff and other potentially interested local stakeholders (environmental authority, SMEs, scrap collectors, etc.) in the management of BAT/BEP undertaken	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☒	
Output 3.3:Results of the implemented demonstration projects published and disseminated for replication through collaboration with existing financial institutions in the country.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☒	☐	☒	
Component 4 Project Management and Monitoring																					67,238.67

X. Synergies

1. **Synergies** achieved:

N/A

3. Stories to be shared (Optional)

N/A

XI. GEO LOCATION INFORMATION

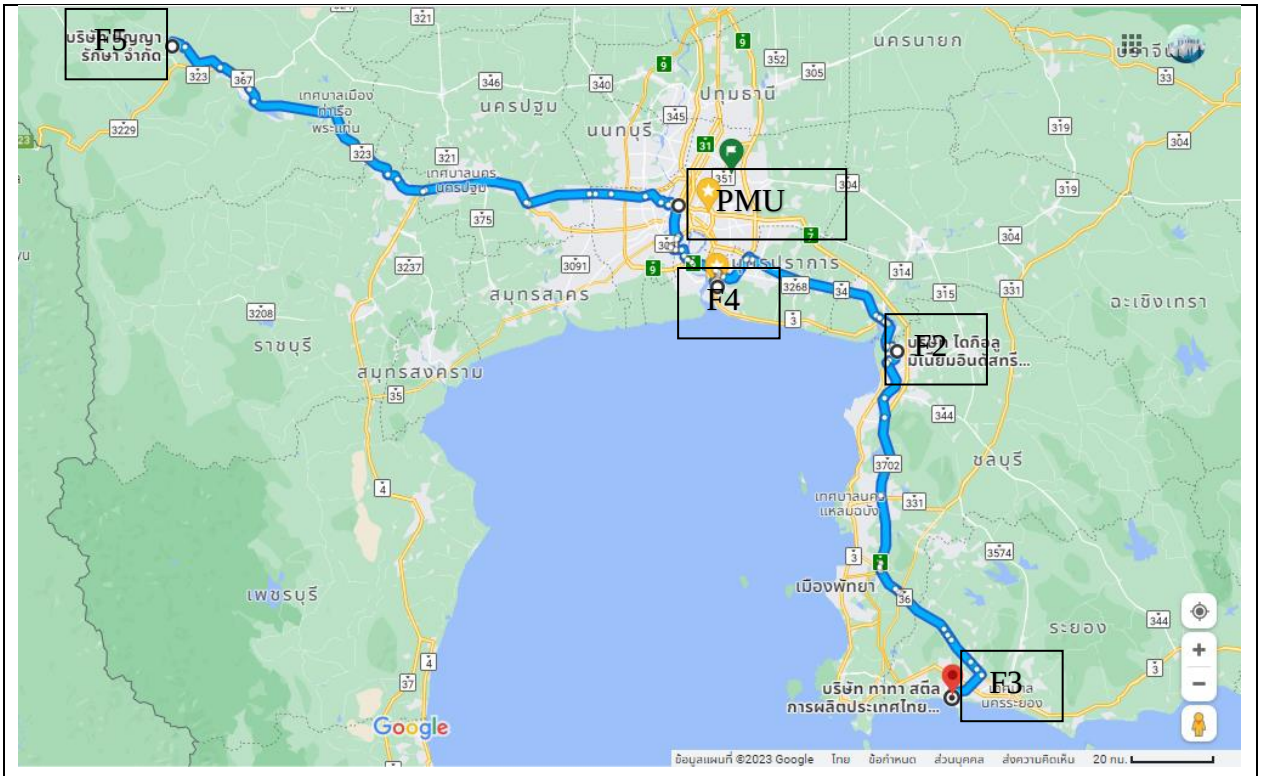
The Location Name, Latitude and Longitude are required fields insofar as an Agency chooses to enter a project location under the set format. The Geo Name ID is required in instances where the location is not exact, such as in the case of a city, as opposed to the exact site of a physical infrastructure. The Location & Activity Description fields are optional. Project longitude and latitude must follow the Decimal Degrees WGS84 format and Agencies are encouraged to use at least four decimal points for greater accuracy. Users may add as many locations as appropriate.

Web mapping applications such as OpenStreetMap or GeoNames use this format. Consider using a conversion tool as needed, such as: https://coordinates-converter.com

Please see the Geocoding User Guide by clicking here

Location Name	Latitude	Longitude	Geo Name ID	Location and Activity Description
Thailand-Bangkok	13.76029	100.53724	6845022	Project Management Unit at Ministry of Industry
Thailand-Chon Buri	13.3622	100.98345	1611110	Demonstrated facility2
Thailand-Rayong	12.83827	101.3421	1618570	Demonstrated facility3
Thailand - Samut Prakan	13.56855	100.65148	1608623	Demonstrated facility4
Thailand-Kanchanaburi	14.00412	99.54832	1153081	Demonstrated facility5

Please provide any further geo-referenced information and map where the project interventions is taking place as appropriate.


F5
PMU
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นครนายก
ปทุมธานี
นครปฐม
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สมุทรสาคร
ราชบุรี
สมุทรสงคราม
เพชรบุรี
ฉะเชิงเทรา
ชลบุรี
เมืองพัทยา
ระยอง
Google

EXPLANATORY NOTE

1. **Timing & duration:** Each report covers a twelve-month period, i.e. 1 July 2022 – 30 June 2023.

2. **Responsibility:** The responsibility for preparing the report lies with the project manager in consultation with the Division Chief and Director.

3. **Evaluation:** For the report to be used effectively as a tool for annual self-evaluation, project counterparts need to be fully involved. The (main) counterpart can provide any additional information considered essential, including a simple rating of project progress.

4. **Results-based management**: The annual project/programme progress reports are required by the RBM programme component focal points to obtain information on outcomes observed.

Global Environmental Objectives (GEOs) / Development Objectives (DOs) ratings	
Highly Satisfactory (HS)	Project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as "good practice".
Satisfactory (S)	Project is expected to achieve most of its major global environmental objectives, and yields satisfactory global environmental benefits, with only minor shortcomings.
Moderately Satisfactory (MS)	Project is expected to achieve most of its major relevant objectives but with either significant shortcomings or modes overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environmental benefits.
Moderately Unsatisfactory (MU)	Project is expected to achieve some of its major global environmental objectives with major shortcomings or is expected to achieve only some of its major global environmental objectives.
Unsatisfactory (U)	Project is expected not to achieve most of its major global environmental objectives or to yield any satisfactory global environmental benefits.
Highly Unsatisfactory (HU)	The project has failed to achieve, and is not expected to achieve, any of its major global environmental objectives with no worthwhile benefits.

Implementation Progress (IP)	
Highly Satisfactory (HS)	Implementation of all components is in substantial compliance with the original/formally revised implementation plan for the project. The project can be presented as "good practice".
Satisfactory (S)	Implementation of most components is in substantial compliance with the original/formally revised plan except for only few that are subject to remedial action.
Moderately Satisfactory (MS)	Implementation of some components is in substantial compliance with the original/formally revised plan with some components requiring remedial action.
Moderately Unsatisfactory (MU)	Implementation of some components is not in substantial compliance with the original/formally revised plan with most components requiring remedial action.
Unsatisfactory (U)	Implementation of most components in not in substantial compliance with the original/formally revised plan.
Highly Unsatisfactory (HU)	Implementation of none of the components is in substantial compliance with the original/formally revised plan.

Risk ratings	
Risk ratings will access the overall risk of factors internal or external to the project which may affect implementation or prospects for achieving project objectives. Risk of projects should be rated on the following scale:	
High Risk (H)	There is a probability of greater than **75%** that assumptions may fail to hold or materialize, and/or the project may face high risks.
Substantial Risk (S)	There is a probability of between **51%** and **75%** that assumptions may fail to hold or materialize, and/or the project may face substantial risks.
Moderate Risk (M)	There is a probability of between **26%** and **50%** that assumptions may fail to hold or materialize, and/or the project may face only moderate risk.
Low Risk (L)	There is a probability of up to **25%** that assumptions may fail to hold or materialize, and/or the project may face only low risks.