Project title: Reduce the impact and release of mercury and POPs in Viet Nam through lifecycle approach and Ecolabel		
Country: Viet Nam	**Implementing Partner (GEF Executing Entity):** Ministry of Natural Resources and Environment	**Execution Modality**: NIM
Contributing Outcome (UNDAF/CPD, RPD, GPD): **UNDAF Outcome***:* OUTPUT 2.2 Accelerated implementation of policies and measures and enhanced awareness and engagement of stakeholders for low-carbon development, circular economy, environmental protection, and reduced environmental pollution. **UNDP Country Program Outcome:** OUTPUT 2.2: Policies and solutions designed and implemented for transformation to low-carbon development, circular economy, and environmental protection		
UNDP Social and Environmental Screening Category: Substantial	**UNDP Gender Marker: (2)**	
Atlas Award ID: 00128574	**Atlas Project/Output ID:** 00122537	
UNDP-GEF PIMS ID number: 6491	**GEF Project ID number:** 10519	
LPAC meeting date: TBD		
Last possible date to submit to GEF: 3 Dec 2021		
Latest possible CEO endorsement date: 3 Jun 2022		
Project duration in months: 48		
Planned start date: July 2022	Planned end date: July 2026	
Expected date of Mid-Term Review: July 2024	Expected date of Terminal Evaluation: May 2026	

Brief project description:

The objective of the project is to protect human health and environment and promote sustainable production and consumption through the reduction of the use of POPs, new POPs and mercury and the release of POPs, U-POPs and mercury throughout the lifecycle in key industrial sectors supported by Ecolabel system, Green Financing, and Procurement mechanisms.

The project intends to speed up the elimination of industrial POPs (SCCP, PFOS, PFOAs, HBCDD, PBDEs) from import and use; it will reduce the release of mercury and U-POPs from industrial sources and eliminate the manufacturing and use of mercury containing devices.

The project will: (a) establish a Green Financing Mechanism (Grant and Loans) and a Green Procurement Scheme, Ecolabels and Environmentally friendly production; (b) demonstrate the application of POPs-free manufacturing and design; (c) demonstrate air pollution treatment devices for the abatement of U-POPs and mercury from the stack of industrial processes; (d) remove/replace at least 35 tons of POPs, 20,000 fluorescent lamps, and 10,000 medical devices, promoting their environmentally sound disposal; and (e) improve the regulatory framework concerning POPs and mercury control.

The project builds on the experience gathered by the previous projects: GEF ID9379 “Application of Green Chemistry in Viet Nam to Support Green Growth and Reduction in the Use and Release of POPs/Harmful Chemicals “; and the GEF ID5067 “Viet Nam POPs and Sound Harmful Chemicals Management Project”.

FINANCING PLAN (only cash transferred to UNDPs bank account and included in the TBWP for this specific GEF project should be included under this section (1), all others should be included under section (2)).	
GEF Trust Fund grant *(only the portion approved by GEF CEO under UNDP)*	USD 4,600,050
(1) Total Budget administered by UNDP	**USD 4,600,050**
(2) Co-financiers that will deliver project results included in the project results framework (Funds not administered through UNDP accounts)	
VIETNAM PLASTICS ASSOCIATION (VPA)	USD 3,500,000
VIETNAM CORROSION ASSOCIATION (VICORRA)	USD 3,000,000
VINAFOAM VIETNAM CO. LTD	USD 2,000,000
Vietnam Environment Protection fund	USD 5,000,000
Vietnam Environment Administration	USD 11,750,000
Vietnam Environment Administration	USD 200,000
Ministry of Industry and Trade	USD 2,000,000
Ministry of Health	USD 500,000
Germany -EU/UNDP	USD 600,000
(2) Total confirmed co-financing	**USD 28,550,000**
(3) Grand-Total Project Financing (1)+(2)	**USD 33,150,050**

Signatures:		
Signature: print name below	Agreed by Government Development Coordination Authority	**Date/Month/Year:** within 25 days of GEF CEO endorsement
Signature: print name below	Agreed by Implementing Partner	**Date/Month/Year:** within 25 days of GEF CEO endorsement
Signature: print name below	Agreed by UNDP	**Date/Month/Year:** within 25 days of GEF CEO endorsement

Key GEF Project Cycle Milestones:

Project document signature: within 25 days of GEF CEO endorsement

First disbursement date: within 40 days of GEF CEO endorsement

Inception workshop date: within 60 days of GEF CEO endorsement

Operational closure: end date as per the approved duration of the project from date of the Project Document signature

Financial closure: within 6 months of operational closure

I. TABLE OF CONTENTS

Contents

List of Acronyms and Abbreviations

ADB	Asian Development Bank
APCS	Air Pollution Control System
BDE	Bromo Diphenyl Ether
BFR	Brominated Flame Retardants
BIDV	Bank for Investment and Development of Vietnam
CAAP	Clean Air Action Plan
COP	Conference of the Parties
DONRE	Department of National Resource and Environment
EEE	Electric and Electronic Equipment
EOL	End of Life
EPR	Extended Producer Responsibility
EPS/XPS	Expanded or Extruded Polystyrene
ERC	UNDP Evaluation Resource Center
ESMF	Environmental and Social Management Framework
ESMS	Environmental and Social Management System
FSP	Full Sized Project
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
GM	Gender Mainstreaming
GoV	Government of Vietnam
HBB	Hexa Bromo Biphenyl
HBCDD	Hexabromocyclododecane
HCBD	Hexachlorobutadiene
HTI	High Temperature Incineration
IP	Implementing Partner
LED	Light Emitting Diode
LEP	Law on Environmental Protection
LPAC	Local Project Appraisal Committee
MCCP	Medium Chain Chlorinated Paraffins
MOC	Ministry of Construction
MOH	Ministry of Health
MOIT	Ministry of Industry and Trade
MOLISA	Ministry of Labour - Invalids and Social Affairs
MONRE	Ministry of Natural Resources and Environment
MTR	Mid-Term Review
NAP	National Action Plan
NGO	Non-Governmental Organisation
NIP	National Implementation Plan
NSEP	National Strategy on Environment Protection
PBDEs	Polybrominated Diphenyl Ethers

PCDD/F	Polychlorinated Dibenzo Dioxins / Furans
PCP	Pentachlorophenol and its salt and esters
PFAs	Polyfluoroalkyl substances
PFOAs	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonic acid
PIF	Project Identification Form
PIMS	Project Information Management System
PIR	GEF Project Implementation Report
POPP	Programme and Operations Policies and Procedures
POPs	Persistent Organic Pollutants
PPG	Project Preparation Grant
PTS	Persistent and Toxic Substances
REACH	EU Regulation EC 1907/2006 on the Registration, Evaluation, Authorisation of Chemicals
RF	Result Framework
ROHS	EU Directive 2011/65 / EU on the Restriction of Certain Hazardous Substances
SCCP	Short Chain Chlorinated Paraffins
SMEs	Small and Medium Enterprises
STAP	GEF Scientific Technical Advisory Panel
TE	Terminal Evaluation
TOC	Theory of Change
TOR	Term of References
UNDP	United Nations Development Programme
U-POPs	Unintentional Persistent Organic Pollutant
USD	United States Dollar
VEA	Vietnam Environment Administration
VEPF	Vietnam Environmental Protection Fund
VGGS	Vietnam Green Growth Strategy
VIHEMA	Vietnam Health Environment Management Agency
VINACHEMIA	Vietnam Chemicals Agency
VND	Vietnam Dong
WEEE	Wasted Electric and Electronic Equipment

II. DEVELOPMENT CHALLENGE

II.1. The global environmental and/or adaptation problems,

At global level, the production of several Persistent Organic Pollutants (POPs) (for instance the commercial penta and octa-BDE mixtures) has been discontinued since 2000. Others, such as deca-Brominated Diphenyl Ethers (deca-BDEs), Polyfluoroalkyl substances (PFAs), Hexa-bromocyclododecane (HBCDD) and short chain chlorinated paraffins (SCCP), were still produced in large quantities until recent years, or are still being manufactured and commercialized as additives in industrial processes such as the manufacturing of paint, plastic components, polymers, foams (extruded and expanded polystyrene - EPS/XPS) and special purpose textiles and upholstery.

International Technical Regulations/Standards require that certain types of polyurethane foams used in mattresses, sofas, insulating materials and automotive seats, for instance, to fulfil specific low-flammability standards, which, at present, can only be achieved by mixing or wrapping with flame retardants. Also, several specialized paints, such as rubber-chlorinated, anti-rust, antifouling paints, make wide use of SCCP in their formulation in concentrations up to 10%–12%. The evidence that these chemicals are dangerous for the health and the environment resulting in growing consumer concerns that tend to push manufacturers to prioritize initiatives aimed at chemical replacement, mandating intrinsic safety of materials and products, such as shifting towards natural fibers.

The Stockholm Convention risk profile has estimated that around 18,000 tons of HBCDD was produced in 2010, while around 1 million tons of chlorinated paraffin (inclusive of SCCP species not entirely classified as POPs) was produced in 2009. Research carried out by Oeko Institute for the European Association of Car Manufacturers (ACEA) identified that deca-BDEs were used in the manufacturing of specific car components (including cabling), in the 10%–21% concentration range, up to 2017.

At the national level, the fast development of the manufacturing sector in Vietnam that has been occurring the past 15 years is not being properly supported by regulatory tools which could ensure product quality, reduction of hazardous chemicals in the manufacturing and protection of the consumers, workers and environment. The structure of the manufacturing industry in Vietnam, although slowly shifting towards large-scale organizations, is still based in small and medium sized enterprises (SMES) (around 120,000 SMEs estimated in 2015). The presence of SMEs impose challenges to the enforcement of environmental regulation. Several small enterprises – especially in the field of waste recycling – operate in the informal sector[1], which means they are not registered and may not fulfill environmental or quality standards.

Despite some progress achieved in developing the Regulatory Framework, there are still significant gaps in the current legislation concerning the threshold limits for hazardous chemicals used in consumer products and in the manufacturing processes. Limits for POPs have been established for the flue gas released by incinerators, steel industry and cement industry. However, there are no rules related to the limit of relevant POPs in consumer products. Indeed, the use of POPs in the manufacturing industry has not been phased-out and, at the same time, not completely understood by the manufacturers.

Although, in Vietnam, industrial POP chemicals (PBDEs, PFOS, HBCDD, SCCP, PFOAs) were never produced locally, some of these substances have been imported until 2016 (deca-BDE and HBCDD), while others (SCCP, PFOS) are still imported for use as additive in manufacturing processes, and are still present in materials and articles in use or encountered at the products´ end-of-life. It is estimated that around 3,000 tons/month of EPS/XPS is manufactured in Vietnam, with an amount of added HBCDD/year in the order of 250–400 tons. Additionally, the Stockholm Convention "allows the use" the use of perfluorooctane sulfonates and derivatives (PFOS) as mist suppressant in a "closed-loop" process. However, in Vietnam, all the hard-plating or chrome-plating processes are carried out as open processes and PFOS are used not only as mist suppressant but also as etching chemicals in plastic plating.

[1] See for instance "Sustainability Evaluation of Municipal Solid Waste Management System for Hanoi (Vietnam)—Why to Choose the 'Waste-to-Energy' Concept (Sustainability **2020**, 12, 1085; doi:10.3390/su12031085); Mapping Informal Waste Sector in Da Nang Understanding the informal waste sector, its workers & dynamic during COVID - Da Nang Case Study August 2020, UNDP accelerator labs; Solid and industrial hazardous waste management assessment: options and action area to implement the national strategy (World Bank, 2018); Plastic waste management in Vietnam - MSc. Nguyen Thanh Yen, Deputy director of Waste Management Department, Vietnam Environment Administration, 2019 -conference presentation and many others.

PFOAs have been recently added to the Annex A of the Stockholm Convention and no information is available in Vietnam on the presence of this class of chemicals in articles or wastes. Although information does exist in relation its contamination found in surface water, groundwater, soil, sediment, sludge, wastewater and even fish, in-depth data on the weight of each group of articles and chemicals containing PFOS - as well as data on concentrations of PFOS - are needed. There are no consolidated and reliable estimates related to the presence of SCCP, HBCDD, and HCBD in Vietnam, and although listed in Annex A from 2013 to 2017, these substances were not assessed in the 2017 (updated) National Implementation Plan (NIP) of the Stockholm Convention for Vietnam.

In addition to the safety aspects for consumers, workers, and the environment, the contamination by mercury and POPs is also currently hindering a full development of circular economy in Vietnam as the materials potentially contaminated by POPs and mercury are unsafe for reuse or recycling. As recycled materials (particularly plastic, as the amount of recycled yarn is minimal[2]) are not checked for the presence of POPs, these substances may re-enter the cycle using low-quality recycled material in the manufacturing sector. Certain types of plastics, with low or none recycling value, are also often dumped in the environment, openly and uncontrolledly burnt, or used as secondary fuel, resulting in unintended release of POPs (U-POPs): chlorinated and brominated dioxins and furans (PCDD/F).

The baselines risk of exposure to mercury at households or in hospitals due to the breaking out of thermometers is also high. A survey commissioned by UNDP in 2007 looked at 18 health facilities in Vietnam and found the average rate of thermometers broken was 18.8%, while the average amount of mercury released by broken thermometers is 1.7 g/bed/year. Considering Vietnam had 196,311 (2007) hospital beds nationwide, the total number of broken thermometers in 2007 was 447,588 units and the total amount of mercury released from broken thermometers was 334 kg. In this basis, with 285,821 beds hospital beds estimated in 2018, considering the same ratio of thermometer loss and mercury releases, up to 485 kg of mercury could be released into the environment per year.

Finally, the Air Quality has been also affected by anthropogenic emissions of pollutants and extreme weather conditions. The main sources of the increase in airborne particulate matter ($PM_{2.5}$) emissions in Vietnam are transportation, construction, industry, and other domestic activities in urban and rural areas. The transboundary air pollution has also affected the air quality in Vietnam. From 2015 to 2020, the air pollution has been an issue of great concern in Vietnam and other ASEAN countries. More specifically, high levels of PM_{10} and $PM_{2.5}$ in the metropolitan areas of Hanoi and Ho Chi Minh City are being recorded frequently. The level of air pollution consistently increased from 2017 reaching its highest in 2019. In 2020, dust and PM pollution levels were lower probably due to the impacts of COVID-19 that led to nationwide lockdowns, reduction of economic activity and movement of people, but other pollutants (NO_2, O_3, CO, and $SO_{2)}$ were also close to the limits established by the national technical regulation (QCVN 05:2013/BTNMT). The Air Quality is also directly influenced by u-POPs and mercury emission identified in the sources above.

II.2. Root causes

PFOS in steel plating and SCCP in the paint industry. The use of PFOS and SCCP have been recently confirmed in Vietnam by industries consulted in GEF Project ID 9379 "*Application of Green Chemistry in Vietnam to support green growth and reduction in the use and release of POPs/harmful chemicals"*. Although the data is still preliminary, evidence collected in the Medium Term Review (MTR) showed that the consumption of PFOS in a medium-sized hard-plating factory may be in the order of 0.6 tons/year, whilst the consumption of SCCP in the formulation of chlorinated paint reached 3.5 tons/year in a medium-sized paint manufacturing industry. Information on the number of industries operating in these two sectors is, however, not available, and there is a large heterogeneity of processes.

SCCP import in Vietnam. Based on information gathered through the PPG phase, in consultation with the Vinachemia and the General Department of Vietnam Customs, out of 5,687 Import Licenses sent to Vinachemia for registration, 242 items are classified as "chlorinated paraffine" with different names, but with same HS code (3824.9999) and the same Chemical Abstract (CAS) number (85535-84-8), which corresponds to chloro alkanes with C10-C13. The total imported volume of this chemical into Vietnam in 2019 has been relatively high, in the order of

[2] Some craft villages near Hanoi and HCM city collect fabric scraps and make pillows, quilted blankets, clothes for children.

few thousand tons. Reviews and validation activities have been conducted to assess the SCCP usage by different sectors in the country.

HBCDD. It is likely that a significant amount of POPs is also used in the building sector, and more precisely in the manufacturing /import of EPS and XPS used as insulation panels. Based on a report from the Basel Convention Regional Center in Asia (BCRC Asia), in 2018, there were around 110 companies manufacturing XPS and EPS panels/sheets in Vietnam. The average production capacities of the companies were around 100–200 tons/year, while all XPS and EPS materials are imported from Taiwan. Currently, there are no alternatives to HBCDD in the manufacturing of EPS, therefore, it is likely that a large part of this material uses HBCDD as flame retardant. For example, the Vietnam Polystyrene Company has a capacity of 40,000.00 TPA of Expanded Polystyrene, and 50% of is sold at the Local Market while the rest is produced for exports. Considering the content of HBCDD in XPS at 1% (on average), the total use of HCBDD by this company would be estimated in 400 tons.

PFOS/PFOAs. The rate of use and import of PFOS and PFOAs in Vietnam is still unclear. Based on the estimates provided in the 2017 NIP, PFOS stockpiles are identified mostly in textile and upholstery (0.15–3.45 tons), paper and paperboard (0.2–4.8 tons), specific chemicals (e.g.: as varnish remover, 0.062 tons) and firefighting foam (10–15 tons). However, these estimates are uncertain and it is not possible to track PFOS stockpile for their disposal, therefore, the only option is to monitor the presence of these chemicals near potential sources and prevent their import and use.

According to the 2017 NIP, there were nearly 150 establishments working in metal plating, of which about 30% were involved in chrome plating. In addition, there were many metal plating facilities at household scale, which have not been registered. These establishments are potential sources of PFOS emission, and a survey conducted in 2015 by Hanh Thi Duong *et al*[3] has found the existence of PFOS in water bodies near industrial sites. The greatest concentrations of PFOA (53.5 ppt) and PFOS (40.2 ppt) were found in surface water sample collected from a channel that receives wastewater treatment plant discharges. PFOS and PFHxS were found as the predominant PFAS substances in sediments.[4]

POP flame retardants in recycled plastic. The NIP estimated that around 100,000 tons of PBDE-contaminated plastics is present in Vietnam in the sector of electric and electronic equipment (EEE) and their wastes (WEEE), with a similar amount in the automotive and End-of-Life Vehicle (ELV) sector. Therefore, it should be assumed that recycling of materials coming from these sectors could represent health and environmental risks in the absence of procedures for the verification of POP contamination. The 2017 NIP has not included the presence of deca-BDE, which was listed under Annex A of the Stockholm Convention only recently .

The Vietnamese **plastics industry** is still a relatively new sector compared to the other more traditional sectors; however, based on figures from the sector associations[5], it is estimated having an annual growth rate of 16%–18%, with around 2,200 plastics companies delivering plastic components for sectors such as power, electronics, telecommunication, communication and transportation, aquatic products, and agriculture. Currently, the Vietnam plastic industry has significant manufacturing capacity for primary plastic such as PVC, PET, PP, and PS. Other primary plastic materials, including PE, the most important material for packaging plastic, are imported.

In 2018, 8.3 million tons of plastic products were produced from 6.9 million tons of resins and around 1.4 million tons of imported recycled plastic scrap. PE is the most imported material in value and weight (1.9 billion US$ and 1.5 million metric tons). Domestically sourced plastic materials for industrial use (including primary and recycled) meet only 20% of the demand. By 2025, is estimated that Vietnam can manufacture up to 4 million metric tons of virgin resin if all investment projects considered by the Association come into operation, as planned. However, the demand in 2018 was already 5.9 million metric tons.

[3] Hanh Thi Duong, Kiwao Kadokami, Hanako Shirasaka, Rento Hidaka, Hong Thi Cam Chau, Lingxiao Kong, Trung Quang Nguyen, Thao Thanh Nguyen, (2015). Occurrence of perfluoroalkyl acids in environmental waters in Vietnam. Chemosphere 122 (2015) 115–124.

[4] IPEN - Information about PFAS in Vietnam from 2014 - 2018. Online at "http://www.nature.org.vn/en/wp-ontent/uploads/2019/05/Pan_pfas_vietnam_15March2019.pdf"

[5] http://plasticsvietnam.com/news-media/press-releases/plastics-rubber-vietnam-2018-boasts-significant-business-opportunities-for-vietnams-thriving-markets.html

The large majority of the recycled plastic in Vietnam comes from informal recycling. Some well-known recycling villages are processing large amounts of plastic, and in many cases, it is unlikely that this amount is entirely coming from the collection activities. Basically, there is no quality control in the processing of plastic from these informal centers. Due to lack of quality control, PBDEs and other pollutants contained in plastic remain in the plastics value chain cycle ended up being improperly disposed in the environment.

In relation to the **Mercury Emissions**, based on the sampling and analysis work carried out under the GEF ID 5067 Project "*POPs and Sound Harmful Chemicals Management Project (PHCM)*", it has been estimated that power plants release around 5,077 kg Hg/year, waste incineration activities release 10,613.3 kg Hg/year, non-ferrous metal production 2691 kg Hg/year, and cement production 9402 kg Hg/year. In terms of emission intensity, recent sampling and analysis carried out under the same project on chemical management[6] at industrial facilities (power plants, incinerators, cement kiln, and non-ferrous metal plants) has shown that the mercury concentration at the stack exceeds international (EU) reference standards in incineration facilities, power plants, and non-ferrous metal plants. These data are of concern, and the implementation of better Air Pollution Control Systems (APCSs) and control of fuel and raw material could have a significant impact in the reduction of mercury release in the environment. However, industry is not motivated to invest in such equipment until a proper regulation is in place and properly enforced.

Concerning **U-POPs**, based on the 2017 NIP inventory, which used statistical data of industrial sectors applying the UNEP´s toolkit emission factors, the waste incineration sector still accounts for the largest amount of release of PCDD/F in the environment (288 g/Teq in the air and 178 g/Teq in the waste). The metal industry contributes an overall amount of 48 g/Teq, and cement production with 18 g/Teq. Recent sampling and analysis carried at the stack of waste incinerators and industrial plants in the Binh Duong province under the aforementioned GEF ID 5067 Project revealed that 8 out of 9 incineration plants have PCDD/F flue gas concentrations in the range of 1.23–40 times the regulatory limit of 0.6 ngTeq/m^3 set by QCVN 30:2012/BTNMT; and metal production facilities have the PCDD/F level of 2.18–2.57 times higher than the regulatory limit of 0.6 ngTeq/Nm^3 set by QCVN 51:2017/BTNMT. Considering that the regulatory limit is already 6 times higher than the recommended Stockholm Convention BAT value, these data are worrisome.

II.3 Barriers that need to be addressed

<u>POPs Management and phase-out</u>

In Vietnam, a number of regulations concerning the phasing-out of POPs, the management of POPs-containing wastes, and the maximum allowable concentration of POPs in soil and food chain have been established. However, regulations and technical guidelines for environmental levels of new POPs such as PBDEs, HBCDD, HCBD, PFOS, PFOSF and HBB are still missing.

For the plastics recycling sector, baseline information on the use of POPs, especially PBDEs and SCCP, is scarce, and mostly based on indirect information (i.e., NIP estimates based on the UNEP guideline). Notably, a guideline for the inventory of SCCP is still missing, and the use of indirect statistics to calculate the amount of PBDE in EOL products generates quite uncertain estimates. For example, evidence shows that deca-BDEs were officially imported in Vietnam until 2017, and that products treated with deca-BDEs were commercialized until recently.

An analysis of the cost of APCS system in Vietnam has also been carried out in the course of this project preparation (Annex 17). Based on that analysis, the investment cost, expressed as USD/Nm3/hr/h, is higher for small plants (over 12 USD/ Nm3/hr/h for a small incinerator in Vietnam), while it is relatively low for large plants (2.6 USD/ Nm3/hr/h for a large glass factory). Investment for the treatment of an overall amount of 1,000,000 Nm3/hr/h would cost in the order of 2.6– to 12 million USD in Vietnam, depending on the typology of plants to be retrofitted. Therefore, finance and incentives are important barriers to reduce/avoid U-POPs emissions.

[6] Vietnam POPs and Sound Harmful Chemicals Management Project, GEF 5067

Mercury Management

There is limited regulation on mercury waste and control of mercury products in Vietnam. Mercury containing waste is considered hazardous waste. However, no specific provision for the disposal of mercury waste has been established. This adds to the issues related to the management of hazardous waste in general. Although beneficial for the environment, the legislations and guidance documents are not easily implementable in the absence of specific provisions for the management of mercury waste.

In relation to mercury-added products, as of now, the regulation only establishes the maximum allowable amount of mercury in fluorescent lamps. The only mercury containing waste stream currently regulated is the healthcare wastes (HCW): under the Joint Circular No. 58/2015/TTLT-BYT-BTNMT dated December 31, 2015 of Ministry of Health (MOH) and the Ministry of Natural Resources and Environment (MONRE) regulated HCW management (HCWM), including the mercury-containing devices. The disposal of hazardous wastes, in general, and HCW containing mercury is carried out according to provisions of MONRE Circular No. 36/2015/TT-BTNMT dated June 30, 2015 , which defines clear responsibilities over the waste source owners for the collection, transport, and disposal of hazardous wastes.

However, in practice, the classification, collection, storage, and treatment of HCW containing mercury is still inadequate due to lack of equipment and awareness by waste source owners. Moreover, the fact that there are no general regulations for the management of mercury containing waste has resulted in the persistence of improper segregation and disposal of such waste, with mercury entering the general environment and food chain. EOL fluorescent lamps and mercury thermometers are usually dumped in municipal landfills and illegal dumping sites.

Based on the Minamata Initial Assessment (MIA) for Vietnam, around 21,000 fluorescent tube lights and 72,000,000 compact fluorescent lamps have been imported in Vietnam in 2016 and 2014, respectively. However, the market for fluorescent lamps is progressively shrinking, as the production and use of mercury containing lamps is being phased out worldwide. The expected release of large amounts of EOL fluorescent lamps in the coming years has not yet been addressed by an accompanying prioritization of the development of proper waste management technologies to prevent release of mercury contained in discarded bulbs to the environment.

In addition, the legislation on mercury emissions to the atmosphere is incomplete. Emission limits for mercury have been established for incinerators (QCVN 30:2012/BTNMT, QCVN 02:2012/BTNMT) and cement kilns burning waste (QCVN 41:2011/BTNMT). However, there are no specific rules to limit the emissions of mercury from industrial sectors as power plant, cement kilns, incinerators, non-ferrous and ferrous steel works.

Eco-labelling

The market for Eco-labeled products in Vietnam is still limited. This situation arises from different reasons, such as

(a) Vietnamese consumers, including organizations, individuals, and businesses, do not prioritize the use of environmentally friendly products;

(b) Up to now, the regulations on incentives and supports for environmentally friendly product investment and production as well as green procurement are still complicated, unclear, not specific and not properly enforced, so businesses are not motivated to apply Vietnam Green Label for products.

Differently from the Energy Efficiency Labelling Program, which clearly demonstrate how the (end-user) consumer can obtain financial returns in opting for more energy efficiency appliance/equipment, “Eco-labelling” offers less immediately tangible results, but do deliver safer and healthier products in a market where these values are not yet well understood. Therefore, eco-labeling may not represent a significant market advantage for the manufacturers as it becomes “difficult to sell”.

III. STRATEGY

III.1 Description of the baseline scenario

Regulatory Framework

Table 1 provides a commented summary of some recent regulations on chemicals in Vietnam, including their relevance to POPs. The Table 2 indicates some regulations on mercury in Vietnam.

Table 1: Regulations and technical guidelines on POPs

No.	Name of regulations and technical guidelines	Main content
	Field of environmental protection	
1	Law on Environmental Protection 2020 (will be enforced by January 1, 2022)	This defines terms of POPs and PTS (Persistent Toxic Substances) at Article 3. Also, this Law regulates requirements of environmental protection on POPs and articles, products, goods, and equipment containing POPs (Article 69), as well as limits of POPs in articles, products, goods, and equipment (Article 97, 98).
2	Decision No. 184/2006/QD-TTg dated August 10, 2006 of the Prime Minister and its update, Decision No. 1598/2017/QD-TTg dated October 17, 2017 of the Prime Minister	Promulgates the National Implementation Plan (NIP) on POPs, of which implementation of activities aimed at addressing the key priorities on POPs.
3	Decision No. 16/2015/QD-TTg dated May 22, 2015 of the Prime Minister regulates withdrawal and treatment of disposed products	This makes provision to regulate the EOL collection of products like vehicles, tires, electronic devices, oil, batteries, for a more efficient recycling of materials. This regulation may constitute a valuable resource for setting up an environmentally sound recycling scheme, with benefits also on the reduced release of POPs. The enforcement of this decision is, however, still low.
4	Circular No. 10/2021/TT-BTNMT dated June 30, 2021 of MONRE stipulates environmental monitoring techniques and management of information and data on environmental quality monitoring	This is a new circular combining and updating several previous circulars on environmental monitoring activities covering POPs also. It sets official environmental monitoring techniques and methods, including POPs in environmental components and materials, articles, products, goods, and equipment. It also contains provisions for monitoring techniques of new POPs such as PBDEs, PFOS, and HBCDD.
5	QCVN 15:2008/BTNMT - National technical regulation on the pesticide residues in the soils	Includes maximum allowable concentration of HCB, Aldrin, Endrin, DDT, Endosulfan, Dieldrin, Lindane (all were banned for use) in soil.
6	QCVN 07:2009/BTNMT - National technical regulation on hazardous waste thresholds	Regulates threshold of several organic hazardous parameters such as Aldrin, Endrin, PCB, and Chlordane.
7	QCVN 40:2011/BTNMT - National technical regulation on industrial wastewater	Regulates threshold of PCB on industrial wastewater.
8	QCVN 41:2011/BTNMT - National technical regulation on co-processing of hazardous waste in cement kiln	Regulates maximum allowable concentration of PCDD/F in emission and PCB in hazardous waste.
9	QCVN 02:2012/BTNMT - National technical regulation on solid health care waste incinerator	Regulates maximum allowable limits of PCDD/F in emission of solid health care waste incinerator.
10	QCVN 30:2012/BTNMT - National technical regulation on industrial waste incinerator	Regulates maximum allowable limits of total PCDD/F in emission of industrial waste incinerator.
11	QCVN 45:2012/BTNMT - National technique regulation on allowed limits of dioxin in soils	Regulates allowable values of PCDD/F in various types of soils.
12	QCVN 50:2013/BTNMT - National technical regulation on hazardous thresholds for sludges from water treatment process	Regulate threshold of Lindan, Endrin, etc. in sludges from water treatment process.
13	QCVN 54:2013/BTNMT - National technical regulation on remediation target values of persistent organic pesticides per land use	This is a milestone in establishing standard rules for the remediation of sites contaminated by POP pesticides in Vietnam
14	QCVN 56:2013/BTNMT - National technical regulation on waste oil recycling	Regulates allowable values of PCB and Pentachlorobenzene in waste oil recycling process.
15	QCVN 43:2017/BTNMT - National technical regulation on sediment quality	Regulates threshold of PCB, DDT, Dieldrin, Endrin, Lindan, PCDD/F, etc. in sediment quality.
16	QCVN 51:2017/BTNMT - National technical regulation on emission for steel industry	Regulates allowable limits of total PCDD/F in air emission for steel industry.

17	Several relevant technical guidelines for POPs substances management	- Technical guidance on emission inventory and environmental protection for industrial production activities using POPs; - Technical guidance on monitoring and assessing pollution and environmental risks due to the residues of some POPs used in agriculture; - Guiding techniques for inventorying and assessing risks to the environment caused by unintentional emissions of POPs generating from industrial production activities; - Technical guidance on inventory and safety management and risk control for Perfluorooctane sulfonic acid and salts and Perfluorooctane sulfonyl fluoride (PFOS).
II	**Field of chemicals management**	
18	Law on Chemicals 2007	This focuses on 3 groups of chemicals: conditional chemicals, restricted chemicals, and banned chemicals. POPs are not always classified in the right place, as POPs are sometimes put under the restricted list. The Law does not stipulate safety requirements for any specific chemical group that are of global concerns such as POPs, mercury, persistent toxic substances (PTS), etc.
19	Decree No. 113/2017/ND-CP dated October 9, 2017 of the GoV regulates details and guides some articles implementation of Law on Chemicals 2007	List of chemicals restricted from production and trading in the industrial sector (Annex II); List of chemicals declaration (Annex V). Most of the POPs that belong to Annex A of the Stockholm Convention are listed under Annex II. In some cases, POPS are put in as POPs should be banned and not restricted.
20	Circular No. 30/2011/TT-BCT dated August 10, 2011 of Ministry of Industry and Trade regulates temporary allowable concentrations of some toxic chemicals in electric, electronic products	Provides temporary allowable concentrations of some toxic chemicals such as Polybrominated biphenyl (PBB) and Polybrominated diphenyl ethers (PBDE) in electric, electronic products. However, this is temporary so as to meet the international requirement of import/export. The Circular needs to be updated and supplemented with further substances following a scientific-based approach.
III	**Field of agriculture**	
21	Circular No. 10/2020/TT-BNNPTNT dated September 9, 2020 of Ministry of Agriculture and Rural Development promulgates list of pesticides used and prohibited for use in Vietnam	This regulates a list of pesticides prohibited for use in Vietnam (Annex II), including several POPs such as Aldrin, Lindane, Chlordane, DDT, Dieldrin, Endosulfan, Endrin, Heptachlor, Pentachlorophenol, and Hexachlorobenzene.
IV	**Field of health**	
22	Circular No. 11/2020/TT-BYT dated June 19, 2020 of Ministry of Health stipulates list of substances prohibited in insecticides and disinfectant chemicals in household and medical field	It regulates some POPs in the list of substances prohibited in insecticides and disinfectant chemicals in household and medical field (Annex 1) such as Aldrin, Chlordance, Chlordecone, DDT, Dieldrin, Mirex, Perflurooctan sulfonic acid and its salt, PCB, Toxaphene.

Table 2: Regulations on mercury

No.	Name of regulations	Main content
1	Resolution No. 52/NQ-CP dated June 21, 2017 of the GoV on approving the Minamata Convention on mercury	Approving the Minamata Convention on mercury
2	QCVN 02:2020/BCT - National technical regulation on mercury content in fluorescent lamp	This regulates mercury content in various types of fluorescent lamps.
3	QCVN 06:2009/BTNMT - National technical regulation on hazardous substances in ambient air	This regulates maximum allowable concentration of hazardous substances in ambient air, including mercury (metal and compound)
4	QCVN 07:2009/BTNMT - National technical regulation on hazardous waste thresholds	Regulates threshold of mercury parameter in hazardous waste as an inorganic substance
5	QCVN 40:2011/BTNMT - National technical regulation on industrial wastewater	Regulates threshold of mercury on industrial wastewater
6	QCVN 41:2011/BTNMT - National technical regulation on co-processing of hazardous waste in cement kiln	Regulates maximum allowable concentration of mercury in emission
7	QCVN 02:2012/BTNMT - National technical regulation on solid health-care waste incinerator	Regulates maximum allowable limits of mercury in emission of solid health-care waste incinerator
8	QCVN 30:2012/BTNMT - National technical regulation on industrial waste incinerator	Regulates maximum allowable limits of mercury in emission of industrial waste incinerator

9	QCVN 44:2012/BTNMT - National technical regulation on off-shore water quality	Regulates limits of mercury in off-shore water quality
10	QCVN 50:2013/BTNMT - National technical regulation on hazardous thresholds for sludges from water treatment process	Regulate threshold of mercury in sludges from water treatment process
11	QCVN 08-MT:2015/BTNMT - National technical regulation on surface water quality	Regulates limits of mercury in surface water quality
12	QCVN 09-MT:2015/BTNMT - National technical regulation on ground water quality	Regulates limits of mercury in ground water quality
13	QCVN 10-MT:2015/BTNMT - National technical regulation on marine water quality	Regulates limits of mercury in off-shore marine water quality
14	QCVN 61-MT:2016/BTNMT - National technical regulation on domestic solid waste incinerator	Regulates limits of mercury in emission of domestic solid waste incinerator

Green Financing *Mechanisms*

On September 25, 2012, the Prime Minister signed the Decision No. 1393/QD-TTg approving the National Strategy on Green Growth for the period 2011–2020 and a vision to 2050, which also include concepts relevant to **environmental incentives**. Recently, the Law on Environmental Protection 2020 also strengthened the use of economic instruments for environmental protection. As the most important capital channel for the economy, the Vietnam banking system plays a key role in the process of transforming the national economy into a development model towards green growth and carbon emission reduction. Accordingly, credit institutions actively participate in building a green financial system including:

(1) green credit;
(2) green bonds;
(3) green stock;
(4) green financial fund; and
(5) green insurance.

The Ministry of Finance has developed orientation for development of green financing market following the Decision 2183/QD-BTC for the implementation of the Decision 1393/QD-TTg on National Strategy on Green Growth. The Decision 2183/QD-BTC is one of important basis for financing

The financial products listed above are being helpful in mobilizing and encouraging social resources to invest in green manufacturing industries while reducing investments polluting the environment. Based on the survey reported in Annex 16, it has been found that by the end of June 2019, the credit balance for green projects was about VND 317,600 billion, in which:

(a) medium- and long-term loans accounted for 76% of green credit balance;
(b) short-term green loan interest rate is 5%–8%/year,
(c) medium- and long-term is 9%–12%/year.

The proportion of green credit also increased strongly in the period from September 2016 to June 2020, from 1.5% to 4.1% of the total outstanding loans of the whole economy. Compared with the need of $30.6 billion for green financing to 2020, the proportion is already a significant source of domestic capital for green growth. Banks such as VPBank, Sacombank, and BIDV in Vietnam have developed **Green Loan Schemes** to support several activities for project, production, trading, and consumption to prevent climate change, reduce carbon emissions, and promote the transition to sustainable, environmentally friendly economy or to support activities capable of protecting natural resources and environment.

The VEPF is a state-owned financial organization established by the government. The VEPF holds total chartered capital of VND 1 trillion, including VND 727 billion allocated by the state budget. One of the main activities of the VEPF is to provide financial support for environmental protection, biodiversity, projects and activities at national, inter-sectoral and inter-regional levels on environmental pollution prevention and recovery or severe local environmental issues. The mechanism for project grants is used for (i) the development and implementation of a project that mobilizes funding resources in order to perform tasks and activities related to environmental pollution,

environmental disaster response and remediation; (ii) programs, plans and projects as decided by the Prime Minister; (iii) the administration of environmental awards and other commendations to honour organizations and individuals acting as role models of environmental protection in accordance with the decision of the Minister of Natural Resources and Environment; and (iv) environmental protection projects as specified in VEPF's organization and operation charter.

It can be said that green financing market in Vietnam is at an earlier stage. Green bonds are at the piloting stage, while regulation and guidelines on implementation are still lacking. VEPF is one of the most potential financial institution for environmental activities, but needs further improvement in terms of grant condition, institution upgrade for POP and Mercury reduction projects.

Eco/Green Products

In one hand, regulations on incentives and supports for **environmentally friendly products** are also considered under the Law on Environmental Protection (LEP) 2014. But, in the other hand, the Decree No. 19/2015/ND-CP refers to secondary legal documents, which, in turn, only include general statements, or delegate to state agencies the power to specifically regulate or decide on incentive and support rate. This legal arrangement is discouraging enterprises to apply for incentives and supports related to Eco-Labeling. Most of the Vietnamese enterprises lack the knowledge needed to invest in environmental-friendly manufacturing, including the manufacturing of products meeting the requirements of Vietnamese Green Label Scheme. Although the green procurement and green public procurement policies are being pushed through regulations, the market for environmentally friendly products is still limited and not responding to these legal incentives.

Vietnam Green Label Criteria and the Circular No. 41/2013/TT-BTNMT are the legal basis for enterprises and state agencies to consider, assess, and evaluate whether a product is environmentally friendly. Since 2008, the MONRE has issued only 17 Green Label criterion for certain types of products: (1) Powder laundry detergent; (2) Fluorescent lamps; (3) Biodegradable plastic shopping bag; (4) Synthetic paper food packaging; (5) Ceramic building materials; (6) Accumulators; (7) Paper office; (8) Haircare products; (9) Solid soap; (10) Hand dishwashing detergent; (11) Architectural coating products; (12) Laptop; (13) Toner cartridge; (14) Printer; (15) Batteries; (16) Photocopier; and (17) LED lights.

Further, the MONRE Circular No. 41/2013/TT-BTNMT, dated from December 2nd, 2013 regulated the order, procedures and certification of **eco-labels for eco- friendly products**. Total of 53 products have achieved the Green Label certification by MONRE, however these certifications are not renewable. If the criteria of Vietnam Green Label for a certain product or product group have not been issued, then this product or group will not have a chance to be labeled as Vietnam Green Label and to be recognized as environmentally friendly product.

In 2020, the LEP was renewed, and the "eco-label criteria" was replaced by the "green label criteria": environmentally friendly products certification was built up, as well as incentives mechanisms and green procurement promotion. In 2021, the MONRE planned to submit the drafts of the secondary legal system on processing, documents, and responsibility to certify eco-label products. Only after that, they would fulfill the gaps between eco-label regulations and reality, creating opportunities for developing the green procurement, and achieving the Green Growth Strategy implementation.

Replacement of light bulbs and impacts in Mercury-containing waste generation

The Government of Vietnam has been supporting the use of LED lighting through two major projects – Vietnam Energy Efficient Public Lighting Project (VEEPL) and Vietnam National Energy Efficiency in Vietnam. Light-Emitting Diodes (LED) technology was first introduced in traffic lights and the advertisement industry. Across Vietnam, incandescent bulbs, especially in streetlighting, are being replaced with LED bulbs. The LED market in Vietnam is expected to grow at a compound annual growth rate (CAGR) of 18.2% from 2016 to 2022, reaching $729 million by 2022[7]. The lighting segment is expected to make a large contribution to economic growth due to the entry of large multi-national companies, decreasing LED prices, and industrial development of the Vietnamese market. Based on

[7] According to the report "Vietnam LEDs market - drivers, opportunities, trends & forecasts: 2015–2022"

the above, it is evident that Vietnam is preparing the shift from CFL to LED, which will be further driven by the need to comply with the requirement of the Minamata Convention on the disposal of CFL wastes.

Healthcare Mercury-containing Devices

Although mercury-containing devices in many hospitals have been gradually replaced by electronic devices, the use of mercury thermometers is still very common. Mercury thermometers are available in pharmacies all around the country, and are perceived as being more accurate compared to electronic thermometers. The awareness on the danger associated with mercury thermometers in case they break is low; several hospital and clinics are not equipped with mercury spill kits, and in case of replacement of mercury devices, a strategy for the collection and safe disposal of these devices is inexistent.

Air Quality Control

The baseline LEP 2014 and revised LEP 2020 regulate management of air quality at national and local levels. In 2021, the Government released a draft of the Decree that guides LEP 2020 with detailed regulations of targets, tasks, measures, and responsibility for air environmental protection at authority and stakeholder levels. In addition, the Prime Minister approved the National Action Plan on Air quality management up to 2020, vision 2025 under Decision No. 985a/QD-TTg dated from June 1st, 2016.

The Directive No. 03/CT-TTg, dated January 18th, 2021, continued to strengthen the control of air pollution. Further, the MONRE promulgated the Technical Guidance on building up the air quality management plan at the provincial level per the LEP 2020. These are useful regulatory tools for increasing the air pollution control and improvement air quality management in Vietnam.

III.2. Associated baseline projects

Private initiatives on Eco-Labeling. In Vietnam, per QCVN 01:2017/BCT on contents of formaldehyde and certain aromatic amines derived from azo colorants in textile products (MOIT issued under Circular No. 21/2017/TT-BCT dated October 23, 2017), several eco-labels (according to the list in Appendix III of this QCVN) are being applied[8]

Existing Green Funds initiative from state or private banks in Vietnam. A direct consultation with the key financial institutions has been carried out during the project preparation (Annex 16), and has provided evidence that a not only VEPF, but several banks (BIDV, Sacombank, VPBank) have already in place green credit projects, although these do not envisage privileged loans. VEPF is currently revising the "List of environmental protection activities eligible for preferential support" under Annex III of Decree No. 19/2015/ND-CP dated 14/02/2015, so that more initiatives can be considered eligible for Green Loans.

Action Plan on sustainable production and consumption. The Prime Minister recently ratified the 2021–2030 National Action Plan on Sustainable Production and Consumption (under Decision 889/QD-TTg dated from 24 June 2020), which is being implemented. The Prime Minister has assigned MONRE and MOIT to be the focal points to implement activities related of promotion of Eco-labeling and sustainable production, consumption, and exportation in the Plan. Therefore, activities in this project will directly provide support to MONRE and MOIT in meeting the requirements of the Plan.

Voluntary projects on the reduction of U-POP release in the air. Despite air pollution is one of the main environmental concerns in Vietnam, there are no information related to the compliance of industries with the obligations or preventing release of pollutants in the air. Some initiatives have, however, an indirect effect on the prevention of air pollution:

(a) In 2015, Vietnam Environment Administration (VEA) and Clean Air Asia finalized a cooperation plan which outlined priority activities to strengthen AQM in the country, the development of emission inventory guideline document.

(b) In 2015–2017, the co-benefit cooperation project between VEA and the Japan Ministry of Environment (MOEJ), researched for the methodology regarding the air emission inventory, pilot for thermal plants.

(c) In 2016, VEA and Clean Air Asia cooperated in the project Pollution Management and Environmental Health Partnership, which developed regional plans aimed at reaching national air quality standards and objectives, focusing initially in the larger Hanoi metropolitan area (Hanoi and its two satellite cities).

(d) Nestlé, through its Plastic Neutrality Roadmap initiative, has committed to remove from the environment an overall amount up to 25,000 tons of plastic waste by 2025. This includes the removal of non-recyclable plastic waste from plastic recycling village and their use as secondary material and fuel in cement kilns, with an estimate saving of CO_2 and PCDD/F.

(e) At the sub-national government level, Can Tho has been "the first city in the country to join the continuously growing Breathe Life Network. This is a network of cities, regions, and countries demonstrating their commitment to bring air quality to safe levels by 2030 and collaborating on the clean air solutions that will help achieve the 2030 target. Can Tho, the fourth largest city in Vietnam and the largest city in the Mekong Delta, has a comprehensive Clean Air Action Plan (CAAP) in place, which prioritizes the monitoring of air quality and reduction of its major sources of emission, particularly transportation and industry."[9]

[8] 1.Korean Eco-label, 2.Thai Green Label, 3.ECO-Safe of India, 4.OEKO-Tex 100, 5.EU-Label of Europe, 6.Green Mark of Taiwan, 7.Chinese Eco-label, 8.NORDIC Eco-Label, 9.Global Organic Textile Standard (GOST, 10.Dutch Eco-label, 11.Ecoliving of Australia, 12.Der Blaue Engel, Oeko-Tex® of Germany

[9] https://www.who.int/vietnam/news/detail/12-12-2019-who-commends-can-tho-s-commitment-to-tackle-air-pollution

III.3 The Proposed Alternative Scenario: Theory of Change (TOC)

The project intends to address the intentional or secondary contamination of POPs (PBDEs, PFOS, PFOA, HBCDD, SCCP) in plastic, foam, paint, chrome plating, incineration, leather, and other related sectors, with the general objective to protect human health and the environment. More specifically, through training, technical assistance, awareness raising, and the implementation of a high-leverage financing mechanism, the project intends to:

- Promote sustainable production and consumption through the expansion and application of Green Financing Mechanism and the use of eco-labeling on products by adding additional mechanisms for POPs and Mercury-free products and processes.
- Implement Eco-labeling programs (including EPR schemes) aimed at ensuring that the environmental costs associated so the manufacturing of plastic and polymers (and potentially other goods) are fully internalized, with specific reference to the use and release of POPs and other chemical of concerns, and waste management.
- Promote environmentally friendly design where the technical properties of POPs or other chemical of concerns are not anymore needed as they are replaced by intrinsic properties of the products or the materials.
- Speed up the replacement of specific mercury-containing products.
- Support industrial initiatives aimed at the production of POPs and mercury-free products with a circular economy approach taking care of the consumption of chemicals and resources throughout the full production chain.
- Support the installation of modern Air Pollution Control Systems (APCSs) for the reduction of mercury and U-POP emissions.

The general logic of the project is to provide the relevant stakeholders and partners with the needed technical and financial support so that they can address the root causes and barriers, which are currently hindering the improvement of the baseline, to achieve the desired results and global environmental benefits. To do that, a number of assumptions have been adopted. Furthermore, the project should ensure the compliance with gender mainstreaming criteria at any stage.

Stakeholders: The project intends to work with the following stakeholders and partners[10].

- The general public and consumers
- Entrepreneurs and workers in the manufacturing sector
- The government, and more specifically, MONRE (VEA, VEPF), MOIT, MOH and relevant agencies (General Department of Vietnam Customs - MOF, Police Department of Fire Prevention, Fighting and Rescue - MOPS)
- International donors and agencies, financial institutions, commercial banks
- NGOs
- Associations
- Recyclers.

Baseline situation: The baseline situation and the baseline projects – as already reported in detail in the chapter "III.1 Description of the baseline scenario " of this project document – can be summarized as follows:

- There is evidence that industrial POPs are still imported and used in Vietnam at a significant scale, although the awareness of enterprises and their willingness to disclose information about use of POPs in their processes is low.
- Medical devices using mercury (thermometers and sphygmomanometers) are still being used in hospitals and households; mercury-containing lamps are widespread and not disposed of properly when reaching their EOL.

[10] These stakeholders and partners are listed in detail in Annex 8 and in chapter IV on Results and Partnership.

- At the same time, most POPs are being regulated by the Government and their import and use will be restricted, although not completely. This could entail a significant risk for enterprises when the POPs and mercury regulation will be effectively enforced, as they are not ready to shift towards alternative processes or chemicals and could be forced to stop their production.
- Several industrial plants still release of mercury and PCDD/F in the atmosphere at a concentration higher than the internationally accepted BAT and BEP limits, while air pollution in Vietnam cities is severe.
- There are a number of Green Label criteria in Vietnam that assess and evaluate whether a product is environmentally friendly, but Eco-label regulations and Eco-labeled products are still limited.
- Green financing initiatives have been established by public (VEPF) and private financing institutions, however, none of them has explicitly supported the phasing out of POPs or mercury.

Risk/Barriers: The main barriers hindering the reduction of the use and release of POPs and mercury in the manufacturing and recycling sector in Vietnam are as listed below.

On the manufacturing side:

- Several micro and small enterprises do not have the technical and financial resources to implement environmentally safe measures in their manufacturing processes, including the selection of safe chemicals or the replacement of hazardous with less hazardous chemicals.
- Lack of adequate knowledge at both authority and industry levels on the content the industrial products that may contain POPs.
- Several mixtures used in industrial processes are often provided without the relevant documentation on chemical content.

At the regulatory level:

- The regulation concerning the threshold limits for new POPs in articles and products is still missing.
- Although significant gaps concerning the regulation of new POPs and mercury exist, the relevant legislation on chemical and waste is not properly enforced yet. There is a lack of technical guidelines and capacity for the implementation. E.g. Decision 16/2015/ND-CP of the Government stipulates list of discarded products to be collected, but no guiding system to show how to do that, such as collection points, collection mechanism and responsibilities of related stakeholders. Eventually, a large number of people were not aware of the existence of such regulation, i.e. awareness raising activities is not effective.
- There are no incentive or disincentive mechanisms in place to prevent the use and placing on the market of mercury containing articles like mercury thermometers or fluorescent lamps, which may be still easily purchased in shops.
- There are no quality standards (either voluntary or mandatory) or certification processes to promote the manufacturing of POP-free products (BFR-free plastic, HBCDD-free foams, SCCP-free paints, PFOS/CrVI-free plating, PFOS/PFOAS-free food containers or pans, etc.) with the result that some POP substances may still be contained in products.

On the side of the recycling of materials:

- The recycling procedures are mostly carried out through elementary processes in recycling villages, without any procedure to segregate contaminated plastic, resulting in the release of U-POPs in the environment and in the cross-contamination of plastic.
- There is a gap of communication between recyclers and manufacturers due to their different organizational features and due to lack of technical knowledge.
- There are no procedures or technologies in place to ensure that mercury containing waste materials are segregated and processed in an environmentally sound way.
- There is low awareness of the potential presence of POPs in some plastic, foam, paint, chrome plating, and polymer articles and the associated risk for the health and the environment.

GEF and co-financing inputs: Through the implementation of the project, inputs consisting in technical assistance, knowledge sharing, financial contribution (grants from the GEF and from Vietnamese institutions, in-kind co-financing), technology and equipment, legal assistance to update relevant regulations will be provided.

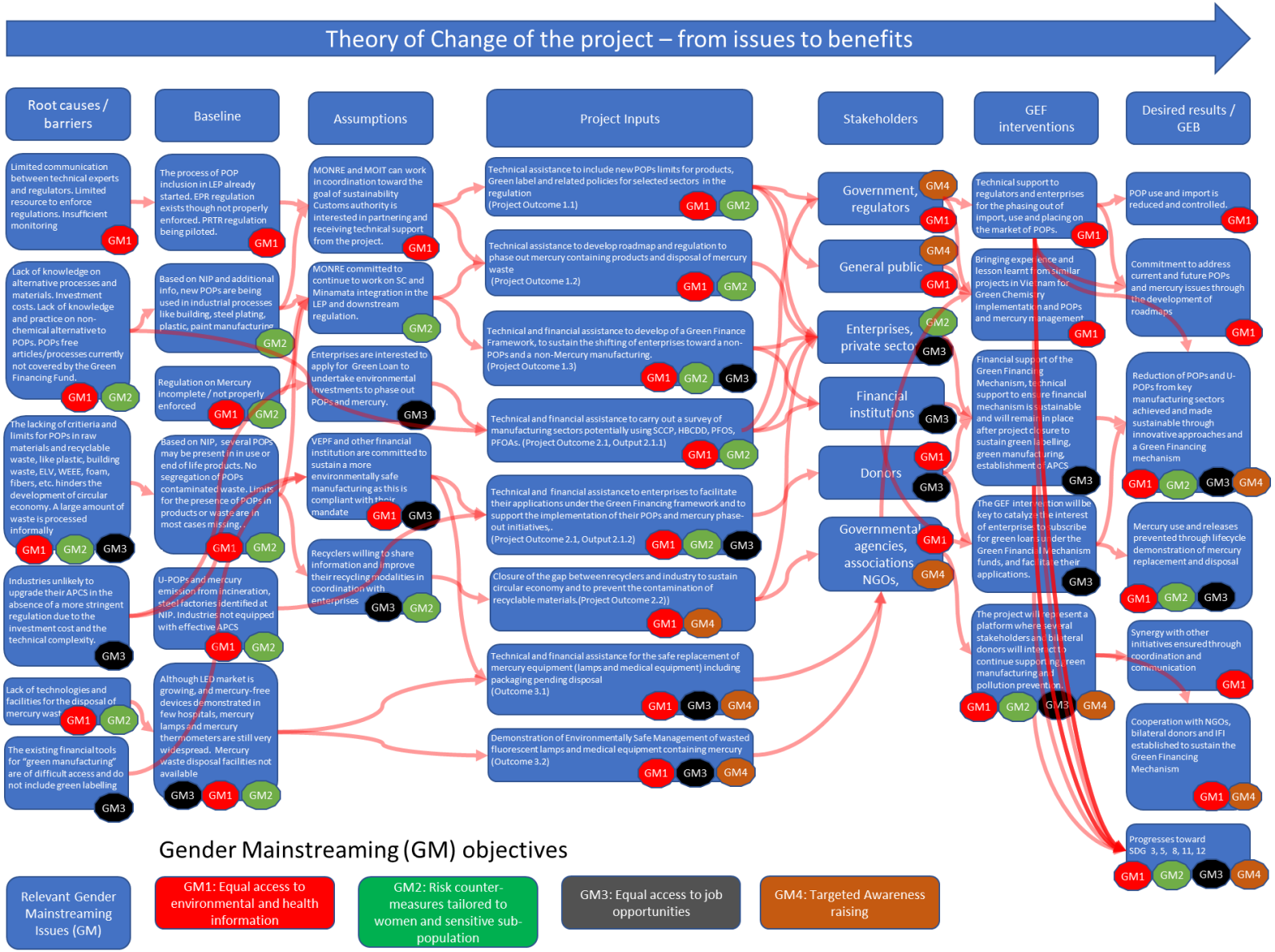
Assumptions. The project has been designed based on the following assumptions:

- As the project entails initiatives that will impact manufacturing enterprises, it is assumed that both MOIT and MONRE and their associated provincial departments can coordinate and work together so that the objectives related to the safeguarding of enterprises' business and protection of the environment and human health are simultaneously achieved.
- MONRE has already proved its significant and continuous commitment towards the implementation of the Stockholm Convention and MOIT has undertaken a significant effort towards the implementation of the Minamata Convention. There is no doubt that these efforts will be continued during and beyond project implementation.
- It is assumed that the Green Financing Mechanism will be designed and implemented in such a way that enterprises find the conditions attractive enough to dismiss – through conventional or innovative approaches – the use of POPs in their manufacturing process, or install APCS to reduce their mercury or U-POP emissions.
- The APCS technology for reducing U-POPs and mercury from industrial emission is readily available. Therefore, it is assumed that there would be no technical difficulties in achieving this target.
- Vietnam is already familiar with eco-label schemes; therefore, it is assumed that lessons learnt from existing schemes could facilitate the creation of a new scheme, which includes POPs.

Activities/Outputs: The project intends to address the existing barriers and to integrate the existing baseline projects through the implementation of an alternative scenario, which is based on a number of activities as summarized below:

- Technical assistance to include new POP limits for articles and products, Eco-Label and related policies for selected sectors in the regulation; and to develop roadmap and regulation to phase out mercury containing products and ensure the safe disposal of mercury waste.
- Technical and financial assistance to carry out a survey of manufacturing sectors potentially using SCCP, HBCDD, PFOS, PFOAs, and PBDEs.
- Technical and financial assistance to develop of a Green Financing Mechanism, to sustain the shifting of enterprises towards a non-POP and non-mercury manufacturing.
- Technical and financial assistance for enterprises to facilitate their applications under the Green Financing Mechanism and to support the implementation of their POP and mercury phase-out initiatives, as well as installing more efficient APCS devices, bringing experience and lessons learnt from similar projects in Vietnam for Green Chemistry implementation and POP and mercury management.
- Closure of the gap between recyclers and industry to sustain circular economy and to prevent the contamination of recyclable materials.
- Technical and financial assistance for the safe replacement of mercury equipment (lamps and medical equipment) including packaging pending disposal.
- Demonstration of environmentally safe management of defunct fluorescent lamps and medical equipment containing mercury.
- The project will represent a platform where several stakeholders and bilateral donors will interact to continue supporting green manufacturing and pollution prevention.

Figure 5: Theory of Change.



III.4. Consistency with National Priorities, including the Stockholm Convention

The project is consistent with the mandate of MONRE, MOIT, and MOH. It should be noticed that Vietnam Environmental Protection Fund (VEPF) is under the MONRE and as such, it is a permanent institution with the main role to facilitate investment in the environmental field, through technical assistance and competitive loans on eligible environmental projects.

The Government of Vietnam (GOV) signed the Stockholm Convention on May 23, 2001 and ratified the Convention on July 22, 2002. After the first National Implementation Plan (NIP) submitted in 2007[11], the reviewed and updated 2017 NIP, which addresses all the COP amendment including COP8, has been submitted to the Secretariat of the Stockholm Convention on September 26, 2018[12].

The project should be considered as a fundamental and necessary step towards the implementation of activities aimed at addressing the key priorities identified by the NIP updated in 2017, as listed below.

- Priority 1: Developing, supplementing, and enhancing the effectiveness of regulations, policies, and institutions to meet the new requirements of the Stockholm Convention.
- Priority 7: Reduction of use of materials, articles containing POP-BDEs, HBCDD, and PFOS in Vietnam and selection of sustainable alternatives.
- Priority 8: Pollution control and treatment of materials and wastes containing POP-BDEs, PFOS, HBB, HBCDD, HCBD, PCP.
- Priority 10: Conduct education, communication, awareness raising, and enhancing the involvement of individuals, organizations and community on risk related to exposure of POPs and other hazardous chemicals.
- Priority 12: Sound management of chemicals, materials, equipment, and wastes related to POPs and mercury generated from the health-care sector.

The project is still relevant for continuing to address the priorities identified in the NIP completed in 2007 as NIP update in 2017, with specific reference to:

- Priority 1: Development and Finalization of Policies, Legislation, and Institutions for POP Management.
- Priority 8: Assessment, Study, Promotion, Assistance, and Management on Application of Best Available Techniques and Best Environmental Practices to Reduce and Finally Eliminate the Unintentional Production of POPs from Production and Living Activities.
- Priority 12: Strengthening Capacity for Managing and Controlling the Production, Import–Export, Use and Transport of Prohibited Chemicals including POPs in Vietnam.
- Priority 13: Study and Development of Emission and Technological Standards Associated with POPs in Line with Development and Integration Needs.
- Priority 15: Assessment of POPs Management in the Whole Country.

Furthermore, the project is fully in line with the national strategies and plans, such as the ones listed below.

1) National Strategy on Environment Protection (NSEP) to 2020, with Vision to 2030
2) Vietnam Sustainable Development Resolution to 2030
3) Vietnam Green Growth Strategy (VGGS)
4) National Action Plan for the Implementation of the 2030 Sustainable Development Agenda
5) National Action Plan on Sustainable Production and Consumption (2021–2030)
6) National Action Plan on Implementation of Stockholm Convention to 2025, Vision to 2030
7) The project – in its components and outcomes related to the phasing out of mercury products, the improvement of the regulation on mercury emissions, and the improvement of air pollution control systems to reduce mercury emissions – is obviously in line with the Minamata Convention on Mercury, which has been signed by the Government on October 11, 2013.

[11] Decision No. 184/2006/QD-TTg dated August 10, 2006 of the Prime Minister.
[12] Decision No. 1598/2017/QD-TTg dated October 17, 2017 of the Prime Minister.

III.5 Alignment with GEF focal area

The project is fully aligned with the GEF7 Chemical and Waste Focal Area Strategy, Program 1 "Industrial Chemical Programs", as it seeks to eliminate or significantly reduce POPs substances or mercury. More specifically, the project envisages:

- The Environmentally sound waste management/disposal of mercury/mercury containing waste (Project component 3)
- The prevention of waste/products containing persistent organic pollutants from entering material recovery supply chains (project component 2)
- Elimination of the use of persistent organic pollutants and mercury in products (Including brominated flame retardants, PFOS and short chained paraffin) as well as the use of mercury in products through introduction of alternatives in the products with a preference to non-toxic chemicals (project components 2 and 3)
- Introduction and use of best available techniques and best environmental practices to minimize and ultimately eliminate releases of unintentionally produced POPs and mercury from major source categories included in both the Stockholm and Minamata Conventions including, but not limited to, cement manufacturing, coal fired power plants, various metallurgical processes, waste incineration; (project component 2)
- The project will also strengthen national legislation and regulatory capacity for meeting the Minamata and Stockholm convention obligations, with regard to persistent organic pollutants and mercury (project component 1)
- The project will also support sustainable material management initiatives, including circular economy, sound material-cycle society, and sustainable materials management approaches, promoting the adoption of improved production, consumption and environmentally sound disposal patterns (project component 2 and 3).
- When feasible, the project will establish and promote public-private partnerships for the different chains of waste collection and minimization, waste recycling, manufacturing, and will promote the adoption of voluntary certification in both the recycling and manufacturing sides (project component 1, 2 and 3).

III.6 Incremental cost reasoning

The incremental cost reasoning for the project is summarized as below:

Component 1 (Alternative products are incentivized through Ecolabeling programs, regulation and guidance)	
Baseline / Baseline projects and associated co-financing budget	**GEF alternative scenario and budget**
(a) The government is already undertaking significant efforts in the area of green financing with initiatives aimed at expanding the target reached by these policies by proper dissemination of technical and financial information. Moreover, VEPF is currently revising the "List of environmental protection activities eligible for preferential support" under Annex III of Decree No. 19/2015/ND-CP dated 14/02/2015, so that more initiatives can be considered eligible for Green Loans.	(a) The project will support the government in the establishment additional eligible categories for green loan for the targeted chemical industries so to foster POPs and Mercury-free products manufacturing (which currently are not differentiated in the financial products available) and facilitating the industries access to high leverage green financial products.
(b) Eco-labelling and Green Procurement baseline efforts were initially regulated, however POPs and mercury free products (except LED bulbs) are still not among the ones that can be considered as green-label products and that can therefore be eligible for financial supports from VEPF or other financial institutions.	(b) Eco-labelling criterion will be expanded to incorporate POPs and Mercury-free products as to reduce POPs direct (manufacturing of new) and secondary use (recycling of contaminated materials). This action will ensure that the Policies to reduce U-POP releases and to enhance circular economy are strengthened, and that the policy on mercury is developed and implemented to replace mercury products and to enhance the management of waste containing mercury.

(c) MONRE is currently working on the regulation related to the establishing limits for the use of new POPs in the manufacturing industry, and is also considering the option to apply for an extension on the use of specific POPs and Mercury products to allow enterprises better mechanisms and incentives to adapt to the SC and MC provisions. **Associated Co-financing:** **Vietnam Environment Administration:** 6,950,000 USD	(c) Without GEF support, the current trend toward the voluntary adoption of green-labelling scheme will be largely driven by market forces, not properly supported and monitored, and the replacement of mercury-devices with non-mercury devices, especially on the side of healthcare facilities, will proceed at the current pace, falling short from the SC and MC provisions and deadlines. **GEF grant requested for component 1:** USD 745,230
Component 2: Life cycle management of POPs and PTS containing products	
Baseline / Baseline projects and associated co-financing budget	**GEF alternative scenario and budget**
(a) The capacities of Vinachemia and of the Custom authority to identify POPs in the recent years depended on the establishment of dedicated databases and of specific codes for some POPs in the Harmonized Standard for import/Export. Currently these capacities are uneven as, for example, SCCP imported in the last years could be monitored, However, the import of POPs containing materials and mixtures is still not properly traced nor surveyed.	(a) The project will conduct surveys along the full value chain manufacturing sectors, to identify processes and materials, and will fill the knowledge and data gap concerning the substances (POPs and other chemical of concern, including POP precursors or candidate POPs) used in the manufacturing industry. This Component 2 will be completed by Component 1 (Review, amendment of existing, or creation of new legislation related to POPs and new POPs) and will provide support to ensure inclusion of provisions related to chemicals controlling mechanisms.
(b) The NIP has estimated relevant amounts PBDE-contaminated plastics is present in Vietnam (EEE/WEEE), and in the automotive and End-of-Life Vehicle (ELV) sector. And around 400 tons of HBCDD are still used in the manufacturing sector of new products (through the import of HBCDD beads). Currently only few enterprises are explicitly adopting actions aimed at reducing the use of POPs. It is also important to note are based on estimates rather than on surveys.	(b) The project will promote the shifting to a more responsible product design which will be mostly aimed at the manufacturing of articles and materials which, because of their intrinsic design, will have reduced or no need of chemicals to ensure specialized functions (like flame-retardancy or water repellence). This will result in a reduced environmental impact throughout the whole life cycle of these products and materials. Identification of green-label design criteria for material and products, as well as less chemically-intensive process will also be facilitated, and these new products will then have access loans from VEPF (Component 1).
(c) The large majority of the recycled plastic in Vietnam comes from informal recycling. Some recycling villages are processing large amounts of plastic, and in many cases, it is unlikely that this amount is entirely coming from the collection activities. Basically, there is no quality control in the processing of plastic from these informal centers. Due to lack of quality control, PBDEs and other pollutants contained in plastic remain in the plastics value chain cycle ended up being improperly disposed in the environment. **Associated Co-financing :** Vietnam Plastics Association (VPA): USD 3,500,000 Vietnam Corrosion Association (VICORRA): USD 3,000,000 Vinafoam Vietnam Co.LTD: USD 2,000,000. VEPF: USD 5,000,000	(c) Opportunities for recyclers and manufacturers to exchange their needs and requirements will be created and informal recyclers will be supported to shift towards a formal way of operation and to adopt better quality and safety standards. This will ensure that recyclers can access a higher quality market by taking part in take-back or collection schemes aimed at ensuring that the quality of the recycled material fulfils the needs of the industry. In terms of POP prevention, promoting up-cycling or horizontal recycling has the benefit of reducing the cross-contamination of recycled material. Up-cycling or horizontal recycling may also be achieved through the establishment of take-back schemes for specific products **GEF grant requested for component 2:** USD $2,069,070

Component 3: Mercury lifecycle management of mercury containing products	
Baseline / Baseline projects and associated co-financing budget	**GEF alternative scenario and budget**
(a) The use and commercial availability of mercury thermometers is still high, although – even due to the measures adopted to fight the Covid-19 pandemic with contactless devices. It is acknowledged that the use of non-mercury thermometers is being more accepted and slowly widespread, however, without the GEF support, the rate of substitution of mercury with non-mercury lamps would be mostly driven by market forces, whilst there would be no push toward the replacement of mercury thermometers in hospital and clinics;	(a) The project will fill the gaps in the disperse activities related reduction of mercury and U-POPs release in the environment by facilitating the replacement of mercury containing products (fluorescent lamps and thermometers) with non-mercury products using incentive programs; The phase-out of mercury-containing products will be coordinated and accelerated with provision of training, raising awareness, supporting the replacement of equipment containing mercury, and establishing Guidelines and Standards for alternative technologies and facilities for the safe disposal of mercury-containing equipment, these interventions will be sustained by EPR schemes and EOL management strategies and by training and awareness raising for healthcare facilities to accelerate the replacement of mercury thermometers;.
(b) Baseline regulation only establishes the maximum allowable amount of mercury in fluorescent lamps. The only mercury containing waste currently regulated are the HCW. The disposal of hazardous wastes, in general, and HCW containing mercury is carried out according to current provisions that defines clearly the responsibility of waste source owners for the collection, transport, and disposal of hazardous wastes. However, in practice, the classification, collection, storage, and treatment of medical waste containing mercury in health facilities is still inadequate due to lack of equipment and awareness by waste source owners. Moreover, the fact that there are no general regulations for the management of mercury containing waste has resulted in the persistence of improper segregation and disposal of such waste, with mercury entering the general environment and food chain. Without GEF support, is likely that end of life mercury-containing products will mostly be dumped/ dismantled in municipal waste, and no technology for the segregation of mercury from end of life equipment (lamps and thermometers) will be demonstrated.	(b) The project will provide technical assistance and unlock financial support for the development of plants for the environmentally safe disposal of mercury containing devices and for the design, financial support and instalment of air pollution control equipment. In addition, procedures and technologies for the proper recycling of mercury-containing equipment, along with the safe segregation of mercury from the recyclable components, will be demonstrated. A pilot equipment for the treatment of mercury waste will be established at one of the URENCO waste treatment facility. Requirements for the storage facilities will also be identified to minimize the risk. The release of mercury from on - site and off - site operations will be adequately managed and controlled by application of relevant Best Available Techniques (BATs) and Best Environmental Practices (BEPs), as well as observance of Environmental, Health, and Safety (EHS) guidelines.
Associated Co-financing: MONRE: USD 5,000,000 Vietnam Chemicals Agency – MOIT: USD 2,000,000 BMU-EU: USD 600:000 Vietnam Health Management Agency – MOH: 500,000 USD	**GEF grant requested for component 3:** USD 1,318,680

IV. RESULTS AND PARTNERSHIPS

IV.1 Results

Project Objective: *Protect human health, environment and promote sustainable production and consumption through the reduction of the use of POPs, new POPs and mercury and the release of POPs, U-POPs and mercury throughout the entire lifecycle in key industrial sectors supported by Eco-label system, Green Financing, and Procurement mechanisms*

The project is structured in three technical components and one management component, which includes project monitoring and evaluation and knowledge management.

Component 1: Promote sustainable production - consumption in key sectors through Eco-labeling, Green Financing, and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors.

The component intends to:

(a) support the development of secondary regulations to the Decree guiding the LEP 2020 with the intent to identify criteria for supporting POPs and mercury-free production processes and products, and to enhance the support for the establishment of APCSs.

(b) Expand the Eco-labeling criteria for alternatives to mercury products (lights, thermometers, sphygmomanometers) and POP-free alternative products for plastic, paint, foam, polymers, chrome plating, leather, incineration, and other sectors that will be developed and proposed for inclusion under the list of eligible projects to be funded with the Green Financing Mechanism.

(c) Simultaneously, develop and/or revise the regulations/procedures for loan mechanism, according to LEP 2020 and Decree guiding LEP 2020, included in Green Financing Mechanism.

Therefore, activities in Component 1 will provide support to MONRE and MOIT, MOH to strengthen the Plans and Operational Documents, as well as ensure compliance with gender mainstreaming criteria, to reduce POPs and Mercury releases/emissions and accelerate the phase-out of mercury and POPs in processes, products, and recycled materials.

Outcome 1.1. Environmental regulation upgraded to include new POPs; Eco-label and related policies on POPs and mercury lifecycle management developed and implemented[13] :

Under this outcome, the baseline Regulations relevant to new POPs will be updated to cover aspects related to restrictions i the use and imports of POPs not yet regulated (PFOAs and HBCDD); quality standards on concentration limits for additives and harmful chemicals; Eco-labeling criteria and certification systems for manufacturers, products, and recyclers. In addition, quality standards and Eco-labeling criteria, including concentration of POPs brominated flame retardants and plasticizers, POPs precursors and other substances of concern in products and processes, will be developed. This outcome will be achieved through the following outputs:

Output 1.1.1. Review, amendment of the existing or creation of new legislation related to POPs and new POPs in key sectors (e.g., plastic and polymers, metal plating, paint/solvents, etc.), to ensure inclusion of provisions to support, inter alia exemption register of import for new POPs; concentration limits for POP (BFR, HBCDD, SCCP, etc.) and other POPs/PTS in products and waste; Eco-labeling schemes developed and new EPR schemes supported.

The target sectors will be selected during the first year of project implementation and the following criterion will be applied:

(a) Sector that has confirmed use of POPs in the process (either based on data provided by the NIP, from surveys from ongoing projects, or from official sources of information); and
(b) Sector that has recognizable economic relevance (i.e. GDP share) in Vietnam.

[13] PIF's Outcome 1.1 and 1.2 were merged under Outcome 1.1 to align activities

Based on the above, the tentative sectors to be considered are: (i) plastic (including building foam); (ii) polymers, (iii) metal plating; (iv) paint/solvents; and (v) fire-fighting foam. Additional sectors may be considered at project implementation.

The existing legislation related to the intentional or unintentional use of POP chemicals manufacturing processes (plastic, polymers, hard-plating, paint) will be assessed. When necessary, specific restrictions will be proposed to limit the presence of specific chemicals in articles and products (PBDEs, SCCP, HBCDD, PFOS and PFOAs) considering also that restrictions to the use of PBDEs and PFOS are already established under the REACH regulation and the ROHS directive in Europe, which potentially affect Vietnamese exporters of plastic and polymers articles and products.

Under this output, the national technical regulation on thresholds for the presence of SCCP, PBDEs, HCBD, PFOS, PFOAs in articles and products will be developed and proposed. The current Eco-labelling criteria in place in Vietnam will be updated to include thresholds for POPs in the certification schemes, in line with existing international Ecolabelling schemes (like Oeko-tex 100).

Finally, new EPR schemes will be supported , and a better enforcement of the Decision No. 16/2015/QD-TTg (which regulates the collection after use of products such as vehicles, tires, electronic devices, oil, and batteries) will be also supported. The following activities will be undertaken to achieve this output:

- Activity 1.1.1.1. Develop and implement the secondary law/regulations related to POPs and Eco-labeling scheme; review and develop the national technical regulation on thresholds for POPs and Eco-labeling criteria for articles and products.
- Activity 1.1.1.2. Develop and implement provision for exemption register of POPs as substance or mixtures to be revised to ensure elimination or restriction of POPs once exemption period expires.
- Activity 1.1.1.3. Develop technical guidance for assessment of Eco-labeling criteria including POP limits and EPR following the Article 55 and 56 of the new Law on Environment Protection.
- Activity 1.1.1.4. Support and consult the manufacturers in terms of technology improvement to achieve the POPs limits and Eco-labeling criteria including EPR principles.
- Activity 1.1.1.5. Development of gender-specific sections related to risk management of POPs and mercury to be included in the relevant legal documents.

Output 1.1.2. Roadmap and sectorial plans developed for replacement of mercury thermometers and mercury containing lamps established.

This output intends to remove the barriers currently hindering the replacement of certain mercury products, and to enhance the legislation dealing with mercury in products, in waste, and release of mercury from industrial sources. The Activities under the Output will assess and upgrade existing legislation, develop of a roadmap for the phasing-out of mercury in products, and develop of regulation concerning the modality for mercury waste handling and disposal.

(a) A roadmap towards the complete replacement of fluorescent lamp import and manufacture will be drafted, including the following aspects:

   i. Deadlines for the progressive replacement of the manufacturing of fluorescent lamps.
   ii. Obligations for the manufacturers and intensive users.
   iii. Investment plans for clean-up of mercury contaminated area and disposal of mercury stockpiles.
   iv. Investment plans for the deployment of safe technologies for collection and recycling of fluorescent lamps.

(b) The Minamata Convention has also banned the production, import, and export of blood pressure monitors and clinical thermometers. The use of mercury thermometers is common in Vietnam. The roadmap for the replacement of mercury devices will include the following steps.

   i. Plan for nationwide awareness raising on the use of non-mercury clinical devices, the risk posed by mercury, emergency response, and disposal.

ii. Develop an inventory of production/storage of mercury thermometers.
iii. Set deadlines for the progressive replacement of the mercury thermometers (manufacture, import, and use).
iv. Monitor the plan to verify mercury contamination and presence of stockpile of phased-out mercury devices in hospitals, and investment plans for mercury clean-up and disposal.
v. Investment plan for the deployment of technologies for collection and recycling of mercury containing devices, with safe segregation and storage of mercury.

The following activities will be carried out under this output:

- Activity 1.1.2.1. Development of the sectorial plan for the replacement health-care mercury devices.
- Activity 1.1.2.2. Development of the sectorial plan for the replacement of mercury containing lamps.
- Activity 1.1.2.3. Development of the roadmap for the establishing of mercury disposal infrastructures.
- Activity 1.1.2.4. Develop a plan for cleaning mercury contaminated areas and unused mercury or mercury-containing equipment storages.
- Activity 1.1.2.5. Development of the gender mainstreaming section in the mercury roadmap, through consultation of female workers and gender experts.

Output 1.1.3. Review of the existing legislation related to mercury in products and mercury emission carried out, to help develop and/or strengthen, and ultimately enforce regulations concerning technical standards for mercury waste management.

Under this output, emission limits for the mercury emission from key industrial sources such as cement kilns, municipal waste incinerators, power plants, non-ferrous metal, iron and steel works will be reassessed, developed, and proposed. Draft regulation for the complete phasing out of mercury thermometers and sphygmomanometers will be also developed and proposed. The existing regulations on waste will be amended to include the following:

(a) classification of mercury containing waste;
(b) accepted collection and recycling methods for mercury containing waste, with safe segregation of mercury during collection / recycling operation;
(c) accepted disposal and long-term storage methods for mercury stockpiles; and
(d) licensing aspect for waste disposal service providers.

The following activities will be undertaken under this output:

- Activity 1.1.3.1. Drafting of secondary law/regulations related to mercury concentration limits in articles and products.
- Activity 1.1.3.2. Update national technical regulations related to mercury concentration limits in environment and waste.
  Activity 1.1.3.3. Update secondary law related to the treatment and disposal of waste to include provisions on mercury.
- Activity 1.1.3.4. Development of specific personal protective measures against mercury identified for women at workplace in the relevant legal documents, through consultation with women workers.

Outcome 1.2. Development of a Green Financing Mechanism to sustain the Green Finance Mechanism for shifting enterprises towards a non-POPs and a non-mercury manufacturing:

This outcome will focus on the development of the fund's internal regulations on green credit aligned to the profile of non-POPs and mercury-free projects that will become entitled to preferential loans with the lowest interest rate and longer loan period. Under this outcome, the policy proposal on green credit for commercial banks, and the financial support mechanisms for several selected typical enterprises, in accordance with the project's objectives, will be developed. Two outputs will , establish a green financing environment based on a Green Financing Mechanism and on Green Procurement initiatives:

Output 1.2.1. Green Financing *Mechanism designed, funded, and implemented to support private sector on getting incentives policy (e.g., tax, fee, credit fund, investment equity). Eco-label improved, funded, and properly communicated, building on national and other finance institutions (e.g., VEPF*).

A Green Financing Mechanism will be developed to:

(a) Support the quality-controlled conversion of production lines, towards less chemical-intensive products and materials, replacement of POPs with non-POPs/non-hazardous chemicals, management of obsolete POPs and mercury stocks.
(b) Support the private sector to get policy incentives (e.g., tax, fee, credit fund, investment equity) in the production of eco-friendly products carrying Eco-label.
(c) Speed up the process of replacing mercury products with non-mercury products.
(d) Establish synergies with EPR schemes.
(e) Support industries on investments related to the design and instalment of APCSs, to prevent release of mercury and U-POPs.
(f) Support industries on environmentally sound design of articles and materials that are less chemical-intensive and POP-free.

The project will assist national financial institutions, including the most prominent one, the VEPF, to expand their loan programs (e.g.: the scope of loan; what kinds of project can be eligible to access to the loan). For instance, currently, VEPF does not accept projects from industrial sectors that use POPs and Mercury, and the Mechanism is not capable of identifying and measuring how the incremental benefits of eliminating the use of these substances can be part of the investment decision.

These fundamental actions will update the loan programs´ scope by adding aspects concerning the managing /obsolete POPs and mercury stocks in their eligibility criteria when analyzing loan/financial requests.

Secondly, project will support the capacity building of these financial mechanism(s) and awareness raising program to inform the potential target beneficiaries, i.e. enterprises using POP and Mercury.

Project will also facilitate the Industries´ access to such financing schemes by supporting the private sector in preparing necessary documents, drafting required supporting Documents, Dossiers or Assessment required by financial institutions, as well as “de-codify” financial application procedures in order to inform companies on how to access them.

It is envisaged that one of the key modalities for the implementation of the Green Financing mechanism will be through the establishment of a Green Loan at a privileged interest rate, supported by VEPF and/or other financial entities. The role of the GEF project will be to provide technical support in the design and initial implementation of the projects submitted by enterprises under the Green Loan.

In summary, GEF incremental support to the Project will support:

- The Financial Mechanism(s) to broader their loaning programming by expanding the target industrial/economic sectors to be assisted;

- Provide technical guidance, hold meetings/workshops to develop financing eligibility criteria, technical guidance, review and appraisal of applications that can effectively incorporate the environmental benefits of reducing/eliminating the use of harmful chemicals (POPs and Hg).

- Providing guidance and support raising awareness of enterprises on how to access to the fund, reach out to potential companies (dealing with POP/Mercury) and helping them to formulate loan applications as well as administer the investment when the loan is granted.

The following activities will be undertaken to achieve this output:

- Activity 1.2.1.1. Develop regulations on Green Financing Mechanism to promote POP-free, mercury-free, and emission reduction projects and environmentally friendly production.
- Activity 1.2.1.2. Develop the eligibility criteria for POP-free, mercury-free, and emission reduction projects and environmentally friendly production.
- Activity 1.2.1.3. Develop the technical guidance for evaluation of POP-free, mercury-free, and emission reduction projects and environmentally friendly production.
- Activity 1.2.1.4. Technical support to the VEPF or other financial institution to process applications.
- Activity 1.2.1.5. Development of a specific section of the Green Financing dedicated to the facilitation of women entrepreneurship. Gender experts are consulted during the design, financing, and implementation of the Green Financing Mechanism.

Output 1.2.2. Green Procurement scheme designed and implemented at central and local levels.

Under this output, the following will be achieved:

(a) A procurement subsidization scheme will be created to support green procurement, application of mercury-free lighting, medical thermometers and sphygmomanometers, sound management of obsolete mercury containing devices and related capacity building and awareness activities in healthcare facilities.
(b) Rules for green procurement to be applied by MONRE and DONRE, and healthcare facilities (MOH, will be established to ensure that only POPs-free, mercury-free and sustainable products are procured. This could be connected to the Green Financing Mechanism to ensure a first channel of market access to local enterprises who decided to operate under the specific sustainability rules required for GFF. The Green procurement scheme may contain requirements related to the taking back of EOL equipment, as relevant, under EPR mechanism already existing or to be developed.
(c) The green procurement scheme for healthcare facilities will be developed in coordination with the piloted scheme under the GEF-funded project "*Strengthening Sustainability in the Health Sector in Developing Countries*".

The following activities will be undertaken to achieve this output:

- Activity 1.2.2.1. Design and pilot the Green procurement scheme for POP-free products in at least one selected sector.
- Activity 1.2.2.2. Design and pilot the Green procurement guidelines for mercury-free products in health-care facilities.
- Activity 1.2.2.3. Develop the draft Green procurement guidelines for MOH and health-care facilities.
- Activity 1.2.2.4. Develop the draft Green procurement guidelines for MONRE and DONRE.
- Activity 1.2.2.5. Development of Green procurement criteria, which include facilitation for women entrepreneurs.

Component 2: Lifecycle management of POPs and PTS containing products

Under this component, a better management of specific products and materials in all the stages of their lifecycle will be planned and demonstrated; gender sensitive approaches will be mainstreamed throughout the outputs in accordance to the Gender Action Plan (including by consultation with female workers and gender experts). With the purpose to reduce the amount of POPs and other chemicals of concern in materials and articles in use, the project will ensure that recycled materials (plastic, fibers) are POPs-free by improving and promoting horizontal recycling to prevent contamination of EOL material, as well as to segregate and safely dispose of POP-contaminated waste. A *scoped Environmental and Social Management Plans (ESMP)* will be prepared (during the first year of project implementation) to avoid and monitor any potential risk related to the demonstration activities co-financed by the Companies (and the Green Financing Mechanism) and that will be subject of oversight by the Project.

Outcome 2.1 Sustainable manufacture and design of plastic, polymers, paint, metal finishing, and other products improved to prevent the use of POPs and the release of POPs in the environment.

Output 2.1.1. Analysis of the manufacturing sectors for which the use of new POPs has been recently confirmed but not yet included in the NIP is carried out in order to strengthen baseline and select optimum sectors and enterprises for pilot activity to improve POPs management in the value chain.

In coordination with the relevant industrial sector associations (plastic, polymer, paint, metal plating, etc.) and with the support of MONRE and relevant Ministries, a survey will be carried out along the full value chain manufacturing sectors to identify processes and materials which may be affected by the presence or release of POPs and other substances of concern, with specific focus on PBDEs, PFOS, PFOAs, HCBDD, SCCP.

The purpose of this survey will be to achieve consensus on the list of POPs and other substances of concern that may present particular risk for the environment and the human health, and reach an agreement on initiatives and certification schemes aimed at reducing these substances in all the steps of the manufacturing process. This Output will also build up on the results achieved in the course of implementation of the GEF ID 9379 "Green Chemistry Project", with the more specific objective to develop a list of restricted substances, either in the processes or the final products, to be implemented through voluntary mechanisms (Eco-labeling) or as part of an amended regulation. As previous experiences demonstrated, questionnaire tools are not the most effective methods for carrying out these surveys, thus comprehensive approach will be adopted for data and information gathering:

(a) *Top-down design of the survey.* The survey target will be initially designed with the assistance of MONRE and relevant agencies. Sharing of information related to the processes and size of the industries, consumption of resources, condition of the surrounding environment will be achieved at this stage.
(b) *Interviews and site-visits with manufacturers operating in the international market.* International suppliers already adhering to voluntary eco-labeling or certification schemes will be contacted. Interviews with suppliers exporting to Japan, USA or Europe will be carried out to understand the mechanisms for compliance and verification in all the manufacturing stage, and the list of restricted substances or chemical products included in the certification scheme.
(c) *Interviews and site visits to SMEs and manufacturers.* Interviews and site visits to SMEs and manufacturers operating at the national level (not operating directly at the international level) to verify the substances used in their manufacturing processes along the value chain, and to assess the mass balance of chemicals.

The basic objective of the survey will be to identify key products and sections of the value chain where:

(d) the replacement of POPs and other substance of concerns is more effective and easy to be implemented;
(e) industrial processes that can be optimized through a more efficient use of resources and waste streams, including prevention of the contamination of waste with POPs residues, which may render those waste non-recyclable
(f) careful selection of POPs substitutes to avoid chemicals which may have POP-like hazard profiles or which are already being proposed for listing as new POPs under the Stockholm Convention.

The Annex 18 lists a number of industries or associations that can be potential partners of the project and which will be submitted through formal selection process during the first year of the project implementation. In addition, according to the Stakeholders Engagement Plan, a number of institutions with potential information on the use of POPs in the manufacturing processes will be again contacted during project implementation. These include Vinachemia, the Departments of Industry and Trade, the Departments of Construction Management Materials of MOC, the Leather and Shoes Research Institute, the Vietnam Fire and Rescue Police Department. The following activities will be carried out to achieve this output:

- Activity 2.1.1.1. Analysis of sectors using HBCD (XPS/EPS foam…).
- Activity 2.1.1.2. Analysis of sectors using SCCP (paint, plastic, leather products…).
- Activity 2.1.1.3. Analysis of sectors using brominated flame retardants/PBDEs (plastic…).
- Activity 2.1.1.4. Analysis of sectors using PFOS and PFOAs (metal plating, fire-fighting activities…).
- Activity 2.1.1.5. Review of the existing literature on new POPs to identify gender-specific issues related to risk-management in the enterprises and specific risk for female resulting from the exposure of POPs. Sex-disaggregated data on accident at workplace in the manufacturing industry with focus to exposure to chemicals.

Output 2.1.2. Alternative product and production process are designed to prevent the use of hazardous chemicals additives in general and consequently the use of POPs (e.g., BFR/PBDEs, HBCDD, PFOS, PFOAs, SCCP) in key sectors demonstrated.

To obtain the desired fire-retardant behavior in articles and products, the use of hazardous chemicals can be prevented through chemical replacement (POPs with non-POPs, or hazardous with non-hazardous chemicals), through material replacement (flammable materials with non-flammable materials, i.e., organic fibers instead of poly-urethane foam), function re-design (thermal efficiency with less heat release etc.).

Similarly, non-hazardous nanoscale materials, C_4 back-bone molecules instead of C_8, fluorine-free substances are now available options to prevent the use of traditional water-repellent chemicals like PFOS, PFAs or PFOAs. Complete replacement of PFOS or PFOAs is, however, difficult as no substance reaches its water repellence effectiveness.

In the case of chrome plating, the replacement of PFOS as mist suppressant has been extensively studied and is now technically possible except in a few cases where the specific requirements of the products still require the hard-chrome plating process; however, in most of the cases, the hard-chrome plating has been successfully replaced by other safer processes like zinc-flake plating or zinc-alloy plating with Cr^{3+} passivation, which do not require the use of PFOS. Thus, under this output, the project will establish a network of knowledge in Vietnam to actively identify solutions aimed at:

(a) Identifying non-POP processes or non-chemical alternatives, which do not require the use of hazardous additives due to the intrinsic characteristic of the process.
(b) Using less-flammable materials that do not need to be mixed or wrapped with flame retardants. Examples: mattresses made with organic cotton fabric and cotton batting instead of memory foam or PUF, which are intrinsically compliant with safety standard.
(c) Replacing POP substances or POP precursors with harmless substances in the specific field of flame-retardant and water repellence; non-POP plasticizers.
(d) Reducing the amount of flame-retardants or water repellence chemicals through optimization of the coating and mixing processes so that the required standards are achieved with reduced use of substance.
(e) Identifying circular design or engineering solutions aimed at reducing the need for water repellence or heat resistance, by displacement of components in the product, better heat dispersion, better energy efficiency, micro- and nano-scale design of materials, etc.: for instance, the use of LED instead of fluorescent lamps or incandescent lamps generates less heat and requires less flame-retardant protection, etc.

A specific category of “Eco-labeled products” will be identified so that their design, manufacturing, and marketing are possible under the green-financing mechanism developed with VEPF (complementing Output 1.2.3). Based on the experience achieved on similar projects (GEF ID 9379 “Green Chemistry” project in Vietnam), the following tasks will be undertaken to help those enterprises from undergoing loss of income or from missing market opportunities due to the replacement of POPs:

(a) The project will engage all stakeholders to identify win-win design or engineering solutions aimed at reducing the need for POPs whose uses will be restricted and finding affordable and effective alternatives to POPs that will be restricted or banned;
(b) The Project will also engage with the Government to see if additional support or conversion financing can be made available to such companies.

A roadmap for restriction of imports or restricting the use of certain POPs will be introduced through a clearly identified timeline, which is agreed by stakeholders. The following activities will be undertaken to achieve this output:

- Activity 2.1.2.1. Assist enterprises to design intervention on alternative product design for application under the Green incentive mechanism.
- Activity 2.1.2.2. Select companies that will participate in the demonstration activities, conduct appropriate Environmental and Social Impact Assessments (ESIA) in accordance to UNDP SES Policy, and support selected enterprises under the Green incentive mechanism.
- Activity 2.1.2.3. Assess the results achieved by the piloted enterprises, evaluate results and support the replication potential.

- Activity 2.1.2.4. Consult with female workers and gender experts from consumer associations in the design of substitute products, in line with the Gender Action Plan.

Pre-screening of Demonstration Sites:

During the PPG process, Industries and Enterprises location that can receive the demonstration (sub) projects were pre-screened (short listed) based on the criterion set below:

- All eligible companies are located in industrial (legal) areas (listed in Annex E);
- Locations were confirmed to host companies that use or release POP/Mercury in their process;
- Locations were confirmed to host companies which showed interest to provide co-finance/investment and be willing to carry on the proper technological changes for green and sustainable production.
- Locations were confirmed to host companies that in principle agree to subject to Environmental and Social Impact Assessment (ESIA) for so to assess the potential social and environmental impacts in their area of influence.
- Locations were confirmed to host companies that agree on follow the scoped Environmental and Social Management Plans (ESMP) and Targeted Spill Prevention and Management Plan at demonstration sites.

The Final selection and engagement will be carried out during the first six (6) months of the implementation phase, and the detailed cut-off/selection criteria will be defined before this process take place, however it is anticipated that the main guiding principles for the selection will be based on:

- Operate under the targeted industrial sectors aimed by the Project;
- Size of company and production output;
- Analysis of baseline emissions (larger GEB expected);
- Compliance with national Environmental and Entrepreneurial (tax, labor codes, etc.) Legislation;
- Financial health and baseline capacities to access the Green Finance Mechanism

Output 2.1.3 Design and implementation of modern Air Pollution Control Systems to prevent the release of mercury and U-POPs, suitable also for small enterprises, carried out.

The project will support industries willing to upgrade their APCSs by:

(a) Designing better APCS aimed at the reduction of the release of particulate matter, U-POPs, and mercury;
(b) Supporting companies in the preparation of Applications/Loan Request for the submission of the projects under the Green Financing Mechanism;
(c) Undertaking sampling and analysis of the concentration of U-POPs and mercury in flue gas before and after the implementation of the upgraded APCSs.

The APCSs will be included as "eligible" for the Green Financing Mechanism developed under Output 1.2.1. Hence, The Output 2.1.3 will achieve a reduction of emission of mercury and U-POPs in the environment through the establishment of APCS capable to reduce the concentration from an average 100 µg/Nm^3 for mercury and 6.93 ngTeq/Nm^3 for PCDD/F to 10 µg/Nm^3 for mercury and 0.1 ngTeq/Nm^3 for PCDD/F, for a number of plants representing a flue gas flow rate of up to 1,000,000 Nm^3/h. The above corresponds to avoided/reduced emissions of 648 kg of mercury/year and 2 gTeq/year for PCDD/F.

Based on the preliminary cost analysis carried out in the PPG phase (Annex 17), the technology to reduce PCDD/F emission through a treatment chain based on bag filter, cooling and scrubber columns, activated carbon filter may cost in the range of 6.6–7.8 USD/Nm^3/h. It is noted these equipment could not be fully funded through the GEF grant, therefore their procurement will be pipelined through application under the Green Incentive Mechanism. The following activities are envisaged.

- 2.1.3.1. Assist enterprises to design APCSs installation/retrofit to prevent release of mercury and U-POPs.

- 2.1.3.2. Select demonstration companies, conduct appropriate ESIA, and support the selected enterprises to apply for Loans under the Green incentive mechanism to install the emission control technologies/practices.
- 2.1.3.3. Assess, in comparison with the baseline, the application and results achieved under Output 2.1.3, by project-supported enterprises, after implementation and in view of replication.

Outcome 2.2 Closure of the gap between recyclers and industry to sustain circular economy and to prevent the contamination of recyclable materials.

Under this outcome, efforts will be undertaken to improve circular economy model by involving selected recycling and manufacturing firms. That will envisage the following outputs:

Output 2.2.1 Interaction, technical exchange, and commercial agreement between formal recyclers and industry promoted to identify and implement solutions for the horizontal and safe recycling of materials and the segregation and safe disposal of POP-contaminated materials.

Under this output, opportunities for formal recyclers and manufacturers to exchange their needs and requirements will be created. As the project cannot deal directly with informal recyclers – due to their lack of legal status that prohibit these to engage in hazardous waste management system added by that their operation is often carried out in an environmentally unsound way – the project will establish a communication network with the informal recycling stakeholders to promote their shifting toward formalization of their operation in order to adopt better quality and safety standards.

In one hand formal recyclers will be able access a higher quality market, by taking part in take-back or collection schemes aimed at ensuring that the quality of the recycled material fulfils the needs of the industry, as well as become eligible for Loans; and in the other hand, manufacturers could have access to recyclable resources to replace virgin materials with greater assurance of quality materials.

In terms of POPs prevention, promoting up-cycling or horizontal recycling has the benefit of reducing the cross-contamination of recycled material; for instance, plastic treated with flame retardant will be used for the same purpose without the need to add additional flame retardants in the mixture. Up-cycling or horizontal recycling may also be achieved through the establishment of take-back schemes for specific products.

Take-back schemes would require cooperation among different manufacturing industries and should be integrated as part of their EPR obligation as described in output 2.1.3. The advantages of the take-back scheme are multiple: (a) they increase the life of specific products; (b) separate good quality material (non-contaminated plastic for instance) from contaminated materials; and (c) ensure that EOL material is not abandoned or improperly disposed of, leading to potential release of U-POPs.

Compliance with the relevant rules related to environmental protection and worker rights (International Standards, National Laws and UNDP SES Policy) will be a requirement for the companies/cooperatives engaging in the activities under this output so to prevent the creation or consolidation of situations of inequality, discrimination or unlawfulness from the opportunities generated by the project. A Grievance/redress mechanism will also be created and will serve to address any issue that could be raised by the target stakeholders.

A scoped Environmental and Social Management Plans (ESMP) will be prepared to avoid and monitor any potential risk related to perception of (external) individual or cooperated stakeholders that work in the Municipal Solid Waste Management (MSWM) (not subject or in the area of influence the Project activities) so to avoid the perception of "loss of income" due to the work in the Hazardous Waste Management area.

This output will also include awareness-raising initiatives and training specifically tailored to inform and equip both formal and informal workers with risk management measures to be adopted when dealing with waste potentially contaminated by POPs, including the identification of waste material potentially contaminated by POPs, the proper use of PPE, norms related to the management of non-recyclable material to prevent open burning of waste that may generate U-POPs (dioxins).

Under this output, the following targets will be achieved:

(a) Ensuring effective technical exchange between recyclers and manufacturers, through the establishment of dedicated workshops where industry meet recyclers.
(b) Identification of most sustainable disposal options for the non-recyclable fraction of waste, including the definition of commercial agreements between industries and recyclers.
(c) Demonstration of material up-cycling through collection and reuse of excess material released by manufacturing enterprises, before this material enters the waste cycle.
(d) Design and piloting of a take-back scheme for specific products or product components (including plastic or polymers treated with flame retardants), which would entail: (i) characterization of the composition of the article component to be recycled; (ii) dismantling instruction; (iii) traceability of the product from the manufacturing stage to the consumer; (iv) incentivized collection of the article/product at their end of life, by the manufacturer or an authorized recycler; (v) dismantling on the basis of the dismantling instruction and re-introduction of the recyclable material with horizontal recycling or up-cycling.

The following activities will be undertaken to achieve this output:

- Activity 2.2.1.1. Analyze the recycling sector and EOL materials which may be affected by POPs contamination, or which may generate U-POPs during the recycling stage, including at least building materials, packaging, plastic, steel.
- Activity 2.2.1.2. Identify and assess the materials potentially containing POPs in the recycling sector and the current recycling modality.
- Activity 2.2.1.3. Carry the analytical determination of POPs in secondary material and in the environment of recycling facilities.
- Activity 2.2.1.4. Enhance information exchange among recyclers and manufacturers to identify the measures for POP contamination reduction and environmentally safe secondary materials.
- Activity 2.2.1.5. Implement the provisions of the Gender Action Plan (i.e. consult with female workers and gender experts in the development of interactions, technical exchanges, and commercial agreements between recyclers and industry).

Component 3: Mercury: lifecycle management of mercury-containing products:

This component will support the phase-out of mercury-containing products by providing training, raising awareness, supporting the replacement of equipment that contain mercury, and establishing technologies and facilities for the safe disposal of mercury-containing equipment. The Gender Action Plan will also be thoroughly implemented through the consultations with female workers and gender experts or female trainees and trainers in training events. A *scoped Environmental and Social Management Plans (ESMP)* will be prepared (during the first year of project implementation) to avoid and monitor any potential risk related to the demonstration activities co-financed by the Companies (and the Green Financing Mechanism) and that will be subject of oversight by the Project.

Outcome 3.1 Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management.

It is noted that some mercury-containing products are already being replaced by non-mercury products such as: fluorescent lamps by LED lights; dental mercury amalgams by composite amalgams; and mercury-containing thermometers by electronic thermometers.

However, mercury-containing products, particularly thermometers and sphygmomanometers are still greatly used in Vietnam as their replacement implies not only the finding of the most suitable alternatives, but also depend on sound and progressive replacement plan, sources of finance and a proper waste management plan. Therefore, this Component will promote and speed up the replacement of mercury products by non-mercury products and deploy BAT/BEP for the safe disposal and storage of mercury waste demonstrated.

Output 3.1.1. Risk management, technical guidance, and training materials developed for the sound management of mercury stockpiles, mercury waste and obsolete mercury-containing equipment, with specific reference to lamps and medical devices containing mercury.

Replacement of mercury products will be enhanced through awareness raising campaigns aimed at illustrating the risk associated with mercury exposure, the benefits characteristics of mercury alternatives, and the need for proper management of mercury waste with segregation of mercury.

The project will coordinate with the GEF ID 5555 project "*Local Development and promotion of LED technologies for advanced general lighting*" in which the collection and storage infrastructures for phased-out fluorescent lamps could be aligned. The project will also support the collection and safe storage of waste mercury and mercury amalgam stockpile found in fluorescent lamp manufacturing plants after their retrofit to LED lights production.

The following activities will be undertaken:

- Activity 3.1.1.1. Review of the management status of mercury equipment, products, and waste in hospitals, clinics, and fluorescent lamp producing companies.
- Activity 3.1.1.2. Develop technical guidance and training materials for the use and calibration of non-mercury medical devices to sustain the replacement of mercury thermometers.
- Activity 3.1.1.3. Develop technical guidance and training material for the replacement of fluorescent lamps in offices.
- Activity 3.1.1.4. Develop specific materials of the risk management, technical guidance on personal protective measures for nurses and doctors at hospital facilities and the safe management of replaced mercury devices, including emergency response.

Output 3.1.2. Capacities of institutions are strengthened to eliminate the use of mercury-containing products (e.g., mercury lamps, thermometers, and cosmetics); road map and plan for using of mercury-free devices developed and implemented.

The pilot replacement of mercury with non-mercury thermometers has been demonstrated with the support from the Global Project on Healthcare Waste (GEF ID Project 1802 "*Demonstrating and Promoting Best Techniques and Practices for Reducing Health-care Waste to Avoid Environmental Releases of Dioxins and Mercury*") though limited to two piloted hospitals (with limitations due to fact that the mercury related budget was only a minor part of the overall project budget) the project could still demonstrate positive experiences in terms of replacement methods and application of mercury-free devices in the healthcare sector.

However, many hospitals and clinics still use mercury-contained thermometers. Mercury thermometers are also commonly sold in pharmacies. Therefore, in compliance with the WHO guidelines on the replacement of mercury-containing devices[14], the project will promote the replacement of mercury thermometers with non-mercury thermometers through awareness-raising campaigns specific for hospitals and small clinics aiming to:

(a) explain the reliability of non-mercury thermometers;
(b) explain the procedures for using and calibrating non-mercury thermometers;
(c) provide guidance for handling emergency situations when a mercury thermometer (manometer) is broken during using; and
(d) explain the modalities to dispose of used mercury thermometers and the use of mercury spill kits, following the guidelines jointly developed by UNDP and WHO in other relevant projects.

In addition, a Risk Management Strategy on the sound management of mercury stockpiles and obsolete mercury-containing equipment/products will be developed making specific reference to mercury medical devices. These will be implemented with support from trainings for the use, calibration, and maintenance of different categories of non-mercury thermometers. Mercury Spill Prevention Plan will be developed and Spill Kits will be distributed, and technical guidelines for safe collection and disposal of mercury-containing waste will be developed.

The project will, during the first year of implementation, select hospitals (from a pre-screened list contained in Annex 19) or other healthcare facilities to engage in the phasing out activities of mercury thermometers. The project´s

[14] WHO, 2015: Developing national strategies for phasing out mercury-containing thermometers and sphygmomanometers in health care, including in the context of the Minamata Convention on Mercury: key considerations and step-by-step guidance. https://www.who.int/ipcs/assessment/public_health/WHOGuidanceReportonMercury2015.pdf

immediate replication activities will cover, at least, 50 hospital facilities across Vietnam replacing at least 10,000 mercury thermometers and other products (e.g., cosmetics), and demonstrate the safe (interim) storage facility and disposal of the mercury waste in conjunction with the phased-out of use of mercury thermometers.

The project will strictly coordinate with the UNDP-HCWH ongoing project "*Strengthening Sustainability in the Health Sector in Developing Countries*" in collaborating for the identification of risk management, technical guidance, and training materials for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury-containing lamps.

The project will also demonstrate the replacement by LED lamps is in the cultivation of dragon fruit. One of the measures to increase the productivity and economic efficiency of dragon fruit trees is to extend the lighting time, shorten the growth cycle, and stimulate the off-season flowering of dragon fruit trees. Dragon fruit is a long-day plant and through the day/night cycle it is necessary to accumulate a large enough amount of Pfr to flower, so artificial lightening with wavelengths of 660 nm and 730 nm is used to help dragon fruit trees to accumulate enough Pfr during the night for early flowering. The project will, therefore, propose the replacement of at least 5,000 compact light bulbs with 5,000 LED bulbs. This will include the activities for strengthening the capacities of stakeholders in the collection and transportation of damaged light bulbs as well as improve waste disposal practices. As LED light are more efficient than fluorescent lamp, this activity will also bring additional side benefits in terms of energy savings and, hence, GHG emissions reduction that will be assessed during the project implementation.

The following activities will be carried out under this output:

- Activity 3.1.2.1. Train at least 100 health-care and clinic facilities through the implementation of at least 4 Training for Trainers event and supervision of the overall training.
- Activity 3.1.2.2. Train at least 200 offices and 50 building management boards and through the implementation of at least 4 Training for Trainers event and supervision of the overall training.
- Activity 3.1.2.3. Deliver technical assistance for the replacement with non-mercury lights, and ensure environmentally sound collection of at least 20,000 fluorescent lamps in offices, high-rise apartment buildings and other intensive user of lamps in different areas (industrial facilities, urban area, agriculture, etc.).
- Activity 3.1.2.4. Deliver technical assistance for the replacement of mercury medical devices with non-mercury devices and their use, and ensure environmentally sound collection at least 10,000 mercury medical devices (thermometers and sphygmomanometers) in health-care facilities.
- Activity 3.1.2.5. Promote the participation of female trainers and trainees in training events related to the elimination of mercury-containing products.

Output 3.1.3. Technologies for the recycling of mercury-containing equipment with segregation and storage of mercury established

Procedures and technologies for the proper recycling of mercury-containing equipment, along with the safe segregation of mercury from the recyclable components, will be demonstrated. These will include using vacuum shredders for the segregation of mercury along with the recycling of glass and metals; safe storage for mercury waste before treatment and for segregated waste (including mercury) after treatment. A pilot equipment for the treatment of mercury-containing products will be established at one of the URENCO waste treatment facility (where no new land will be availed for this project (existing baseline structured will be used). The entire process (removal of mercury from containing products, packaging, transportation, temporary storage, treatment with mercury segregation, and final disposal / recycling of the recyclable materials) will be demonstrated.

The Terms of Reference (TOR) and Technical Specifications for the selection of the Interim Storage Facility for Mercury wastes will stress the pre-conditions and monitoring activities during technology implementation. Requirements for the storage facility will also be identified to minimize the risks in handling Mercury and its wastes. A Spill Prevention and Management Plan will be developed and implemented at demonstration sites for safe handling and disposal of chemicals and mercury-containing obsolete devices, as well as to cope with safely clean-up of accidental mercury releases. The release of mercury from on-site and off-site operations will be adequately managed and controlled by applying relevant Best Available Techniques (BATs) and Best Environmental Practices (BEPs), as well as observing the Environmental, Health, and Safety (EHS) guidelines.

An Environmental and Social Impact Assessment (ESIA) for the selected Industry/Company will be developed as to assess the potential social and environmental impacts in their area of influence. A scoped Environmental and Social Management Plans (ESMP) will be prepared to avoid and monitor any potential risks related to the interim storage location supported by the Project. It is envisaged that the pre-conditions for selecting the Mercury Interim Storage Facility will be:

(a) Formally established enterprises in cities, or with state-owned waste managers who are licensed and have many years of experience in the handling of hazardous waste, including mercury.
(b) Only companies with strong track records of success will be eligible.
(c) The project's financial and technical support will be subject to fulfilling the specific eligibility criteria that meet international and national standards on waste handling and destruction to ensure practice of highest performance standards.
(d) Evaluation of flood risks when locating and designing the mercury treatment and storage facilities to minimise the risk of inundation, and ensure that mercury treatment and storage facilities are designed for more intense/ violent storms, heavier flooding, etc., and develop rigorous guidance for climate-related risk management for such facilities.
(e) The facilities will have to organise practice runs to deal with extreme flooding and storm accidents.
(f) Identification of requirements for the treatment and storage facilities; fulfilment of the guidelines of Stockholm Convention and Minamata Convention with respect to risk management in case of flooding and storage will be a mandatory requirement.
(g) Training program on the operational and safeguards exercise for the staff involved in the work on the treatment and storage area will be delivered in advance of starting the actual site work and updated throughout the period of work on the site as required. The scope of the training would cover overall hazardous waste and contaminated site management with specific emphasis on the packaging, physical handling procedures, inventory control and record keeping, site monitoring, emergency response and overall safeguards related to EHS practices and procedures. The curriculum for the training will use all available international guidance materials.

The following activities will be carried out to achieve this output:

- Activity 3.1.3.1 Existing technology / services for the safe recycling of mercury, glass, metals, and plastic from fluorescent lamps and mercury thermometers improved and demonstrated, after ESIA is carried out, with the environmentally safe disposal of at least 20,000 fluorescent lamps and 10,000 mercury thermometers, including the trial tests.

Component 4: Knowledge management and Monitoring & Evaluation (M&E)

Component 4 of the project includes project monitoring and evaluation, and knowledge management. Under this component, the following outcomes will be carried out.

Outcome 4.1. Project management team established, lesson learnt, and knowledge generated by the project properly shared and communicated.

Output 4.1.1 Project inception and inception report carried out

The activities to be carried out under this output are part of the Monitoring and Evaluation plan include:

- Activity 4.1.1.1 Project inception workshop carried out
- Activity 4.1.1.2 Project inception report drafted and endorsed
- Activity 4.1.1.3 Detailed project workplan established

Output 4.1.2 Project steering committee and project management unit established

Under this output, the project management structure will be established, including the Gender Mainstreaming dedicated staff. The following activities will be carried out:

- Activity 4.1.2.1 Recruit and manage PMU staff

- Activity 4.1.2.2 Carry on Gender Mainstreaming coordination and supervision

Output 4.1.3 Knowledge management system including project website established

The prompt circulation of information generated by the project will ensure that project beneficiaries will achieve the maximum benefits from the project activities so that the project impact can be maximized. The project is expected generate the following information materials and tools:

a. *Information on POPs-free or less chemically intensive products and material.* Will be shared through training workshops and awareness-raising events, within a network of project partners (industries, certification bodies) and consumers through websites and apps with differentiated access.
b. *Information on the eligibility to financing programs established under the program*: Will be shared during training events to be organized at VEPF, within the project website and the VEPF website, with differentiated access.
c. *Information on mercury-free fluorescent lamps*: Will be shared during workshops and awareness-raising events on mercury, and within manufacturer product websites, the project website, mobile apps, and leaflets of retailer shops.
d. *Information and guideline on mercury thermometers, and disposal procedures for mercury thermometers*: Will be shared during training for trainers events, and to be summarized on panels and posters to be placed at health-care facilities, and in health-care facility websites where available. To be communicated with patients when admitted to the hospitals.
e. *Management of project documents and reports*. Under the project, a number of technical reports, evaluation reports, training materials, and scientific reports will be generated. Moreover, the project experts will have to have access to the same information generated by other projects. All the documentation generated by the project will be, therefore, categorized and uploaded in a website, with an access policy differentiated by users (administrators, project technical experts, project management units, general public, etc.). A blog under the website, or a project Facebook page, maintained by a dedicated person, will have the main function to collect information and initiatives generated by similar projects worldwide and to connect people from various projects, which will facilitate exchange of information.
f. *Findings, lessons Learnt, and strategies*: Will be shared among the stakeholders and will also collaborate with the GEF ID 10523. These two projects have quite different objectives – the 10523 project would be exclusively dealing with the textile sector, while this Project will cover a number of industrial sectors except textile. However, as both the projects will be implemented by the MONRE and MOIT, the exchange of information between the two projects, with specific reference to the development of new regulations and standards, and the assistance to enterprises concerning the access to environmental funds, will be greatly facilitated. This also include their KM components, sharing of best practices and knowledge gained in the country to ensure a wider dissemination than any of the individual agencies would achieve.

Under this Output, the Project will

- develop a Knowledge Management Strategy, including project website established, management of project knowledge products, findings, lessons learnt and strategies. These will be designed having in mind its wide applicability to other industrial sectors.
- Awareness and knowledge exchange/dissemination activities will be maximized to invite stakeholders from other industrial sectors.
- The Green Financing Mechanism can be further expanded to cover other industrial sectors: the IP will work with the stakeholders so further consideration can be given in terms of risk analysis and support to financial institutions for this gradual expansion.
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The following activities will be carried out under output 4.1.3:

- Activity 4.1.3.1 Establish a Knowledge Management Unit
- Activity 4.1.3.2. Create the Project website, social media pages and maintain these.

- Activity 4.1.3.3. Project documentation (internet pages, movies, leaflets, technical documentation) developed, collated, and made available
- Activity 4.1.3.4. Develop and implement awareness raising and communication strategies

Outcome 4.2 Project monitoring, evaluation and audit carried out in compliance with GEF, UNDP and GoV standards

The project will be monitored and evaluated following GEF Guidelines, as well as applicable UNDP Rules and Regulations for monitoring and oversight. The monitoring will include the development of the GEF Tracking Tools at different stages of project implementation; the analysis of project achievements against the objectively verifiable indicators through the preparation of Project implementation Reports (PIRs), Project annual workplans, Project reports, and technical reports.

There will be two evaluation exercises: mid-term review (MTR) and terminal evaluation (TE), which will be carried out by a team of independent evaluators assigned by the Implementing Agency. The project audit will be carried out regularly, as per UNDP Rules and Regulations. A project knowledge management system, where all the project documentation will be stored, will be implemented in a website with personalized access levels for the project partners. The detailed description of the activities to be carried out under this Component are reported in Section XI – Monitoring and Evaluation Plan.

Output 4.2.1. Project and its activities monitored and evaluated on a periodic basis in line with GEF, UNDP, and government requirements.

- Activity 4.2.1.1 Project audit as part of the project management activities
- Activity 4.2.1.2 Project mid-term and final review
- Activity 4.2.1.3 Periodic project reports (PIR, QPR, AWP, QWP drafted)

Output 4.2.2 Indicators established to facilitate successful project implementation and sound impact assessment.

a. Indicators will be categorized and uploaded in a website and accessible by users (administrators, project technical experts, project management units, public, etc.).
b. A blog under the website, or a project Facebook page, will be maintained by a dedicated person, to function as repository of information and initiatives generated by similar projects worldwide and to connect people from the various projects for exchange of information.
c. Findings, lessons, and strategies will be shared among the stakeholders of this project and the UNEP project on the development of a sustainable textile industry (GEF ID 10523) to share execution, monitoring and outreach share best practices and knowledge gained in the country to ensure a wider dissemination than any of the individual agencies would achieve.

The following activities will be carried out under Output 4.2.2:

- Activity 4.2.2.1. Establish project indicators as part of the project inception activities

IV.2 Partnerships

The project will establish/expand partnerships with the following institutions:

Partner	Relationship
United Nations Development Programme - UNDP	The GEF Implementing Agency (IA) responsible for the oversight of the project. Coordination with UNDP and the Vietnam Environmental Department under MONRE to exchange views and experiences related to key topics, issues on POPs importation, the implementation of Green Chemistry Principles in relevant industrial sectors and the Green Financing Mechanism and Procurement.
Ministry of Natural Resources and Environment - MONRE	Is the focal point of the Stockholm Convention in Viet Nam, and will act the national implementing partner (IP) / Executing Agency. It will have a key role in the execution of project activities as well as to induce the development of a green financing mechanism, through VEPF (subsidiary Organ), and amending and integrating the LEP with provisions related to the new industrial POPs.
MOIT and MOH	As Responsible Partners in project execution, will support the implementation of the mercury roadmap under Component 3 of this project. They will provide technical assistance and enforcement support on

	the restriction to import and export of POPs and POP-containing materials with the help of General Department of Vietnam Customs - MOF, Police Department of Fire Prevention, Fighting and Rescue – MOPS
VEPF and Financial Institutions	VEPF, Vietcombank, Sacombank, Techcombank, VP Bank and other financial intuitions will support the project in the establishment of the green financing loan. Additional financial institutions will be contacted in the course of project implementation.
Private sector and healthcare facilities	Vietnam Plastic Associations, Vietnam Erosion Metal Association, some health-care facilities were engaged during the project preparation and will continue during project implementation. Enterprises are the key actors that will ensure the shifting toward Green Chemistry implementation and POPs-free manufacturing, and will co-finance the associated intervention in their plants, including the installation of APCSs. A trustful and open relationship with manufacturing enterprises is key to the success of this project.
Research institutions, Academia	Will be connected with industries and the healthcare sector to provide information and coordination in implementing relevant activities and provide technical/policy consultation as well as awareness raising and environmental risk assessment of piloted sites.
NGOs, CSOs and especially women's led organizations.	A number of NGOs that were involved in the implementation of previous GEF projects will continue to collaborate with this Project. Cooperation with NGOs is a key aspect to ensure the proper dissemination of project results and to guarantee as many stakeholders are listened. These organizations will be actively involved in the implementation and monitoring of the project Gender Mainstreaming Plan

IV.3 Stakeholders engagement and South–South cooperation

The detailed Stakeholder Engagement Plan is included in Annex 8 of this project document and provides strategic guidance on the mechanisms for stakeholder engagement during project implementation, which may be further revised and enhanced during project implementation. The Stakeholder Engagement Plan is designed to ensure inclusive, effective, and efficient engagement of the key stakeholders throughout the lifecycle of this GEF-financed, UNDP-supported project. The project will work with the following category of stakeholders:

Table 3: Summary of Key Stakeholder Analysis

Stakeholder	Institutional Role & Functions	Role in the project
Ministry of Natural Resources and Environment (MONRE)	MONRE is a government entity of the national administration structure performing state management functions in the areas of land, water resources; mineral resources, geology; environment; hydrometeorology; climate change; surveying and mapping; management of the islands and the sea. MONRE is the focal point for the Stockholm Convention on POPs and in charge of issuing waste release and emission standards and regulations for industry sectors as well as monitoring the level of hazardous chemicals release to environment by industrial production and manufacturing.	MONRE will be accountable for the Government of Viet Nam for ensuring (1) the successful execution of the Project; (2) mobilization of all resources including the needed co-financing for project implementation; and (3) the coordination among all related ministries, agencies, provinces (if necessary) and stakeholders involved in project execution. MONRE is the focal point for the Stockholm Convention in Vietnam. MONRE is the main co-financing partner of the project.
Ministry of Industry and Trade (MOIT)	MOIT is the government entity of the national administration structure performing the function of state management on industry and commerce. With regard to Chemical Management, MOIT/VINACHEMIA is responsible for defining government policies, proposing legislative frameworks for management and use of chemicals in industrial production and manufacture as well as imported chemicals. MOIT/SDO is responsible for coordinate and monitor Green Growth Action Plan in Industrial Sectors and Sustainable Consumption and Production Action Plan, which is guiding nation direction for Green Chemistry application in industrial production and manufacture.	MOIT will be a member of Project Steering Committee (PSC). MOIT will be a Responsible Partner in charge of all the issues related to the registration and authorization of industrial chemicals. MOIT has specific roles concerning the implementation of project sections relevant to mercury, with the exception of the issues related to mercury in medical devices which is under the responsibility of MOH. MOIT is a key financing partner of the project.
Ministry of Health (MOH)	MOH is the government entity of the national administration structure responsible for the State management of healthcare sector, including household	MOH is a member of the project committee. MOH will supervise the activity related to the replacement of mercury devices (thermometers,

	chemicals, insecticides and disinfectant for domestic and medical use, cosmetics including their safety use; State management of food safety in food production facilities, business, etc. including food additives, etc.; Environmental protection in healthcare sector including medical waste. The Ministry of Health is also in charge of the response against the COVID-19 pandemic and therefore it establishes the guidelines and plans concerning the monitoring, prevention and vaccination of the COVID-19.	sphygmomanometers) as well as the compliance of project activities with the COVID-19 prevention rules in place. MOH will also be involved in identifying actions aimed at ensuring compliance with COVID-19 rules in the involved manufacturing facilities, and suggest investment aimed at ensuring the best protection of worker's health in the workplace. MOH is one of the key co-financing partner of the project.
Ministry of Science and Technology (MOST)	MOST is the government entity of the national administration structure responsible for state administration of science and technology activities, including technology transfer and import of new technology; development of science and technology potentials; intellectual property; quality control of national standards.	The ministry has 2 functions: one concerning the support on quality control for waste release standards, and the second concerning introduction of new technology/solution for the project (where required)
Ministry of Labor Invalids and Social Affairs (MOLISA)	MOLISA is the government entity of the national administration structure responsible for state administration on employment, occupational safety, social insurances and vocational training; social protection and prevention of social evils; child care and gender equality.	The ministry will be in charge of collaboration, provision of policy advices and monitoring activities related to the improvement of environment quality at workplace and mainstreaming of gender issue.
Viet Nam Environment Protection Fund (VEPF), managed by MONRE	VEPF is a state-owned financial institution under the MONRE responsible for financial support through soft loans provision for the implementation of programmes, projects, activities in environmental protection, natural resources and biodiversity conservation, and reduction of pollution and reduction of environmental risks.	**V**EPF is a member of Project Steering Committee (PSC). VEPF will be one of the financial entity supporting the Green Financing Mechanism for the enterprises applying solutions aimed at eliminating POPs and mercury from their processes and product, and will be in charge of assessing enterprise application to the fund based on VEPF criteria established in the course of project implementation. VEPF is one of the main co-financing partner of the project
Local Government Agencies at provinces (DOIT, DONRE and DOLISA)	These are the respective provincial level departments of MOIT, MONRE and MOLISA.	Local ministry departments will be involved in the activities conducted at provincial level (*when relevant*).
Sector Associations (Plastic Industry Association, VICORRA) and enterprises (VINAFOAM VIETNAM CO. LTD)	All the industrial associations aim at protecting rights and legal benefits of their members in compliance with the relevant Vietnamese legislation. The associations also examine and propose to the Government regarding issuances of policies and strategies for the development of their industrial sector.	The Associations will be key partners in facilitating the activities to be conducted in the respective industrial sector such as collating sectorial information, disseminating information related to the project, providing support to the assessment and implementing awareness raising activities, specially to trainings to enterprises in each sector, CSR initiatives by enterprises, Infor Tech exhibition, etc. They are also co-financing partner for the project.
Other private enterprises relevant to the sectors of EPS/XPS manufacturing and import, flame retardant additives.	Several companies have been consulted in the course of project preparation, including the ones which have already implemented Green Chemistry and POP reduction initiative in the previous Green Chemistry project. These are listed in Annex 9 and in Annex 8.	Role of private enterprises will be to participate in project activities including piloting of POPs and mercury reduction activities, U-POPs and mercury reduction, participation in training and survey, participation as stakeholders in the workshops related to the establishment of new legislation on POPs and mercury.
NGOs and CSOs (tentative list	All these organization have taken an active role in awareness raising and carrying out activities related to	NGOs will be consulted during all the key step of project implementation; some NGOs will be selected to carry out specific project activity,

included in Annex 8)	environmental aspects, waste management, circular economy, recycling, etc.	especially the ones requiring communication and awareness raising with potential project beneficiaries, and / or related to gender mainstreaming.

IV.4. Gender equality and Women's Empowerment

It is acknowledged that attention ought to be given to the connections between gender concerns and chemicals. Women, men and children differ in their physiological susceptibility to the effects of exposure to toxic chemicals. Furthermore, women are particularly vulnerable to the adverse impact of hazardous chemicals due to the structure of their reproductive systems. POPs, including PBDEs and U-POPs (dioxins), are particularly harmful due to their capacity to accumulate in body fats and in breast milk, thereby posing a significant risk for women and infants.

Usually, risk-based environmental standards and risk-based corrective actions, following a precautionary approach, are designed taking into account the highest risk for the most sensitive and exposed population categories; therefore environmental and toxicological limits take into account the specific issue of women and infants. Nevertheless, specific awareness-raising initiatives will be adopted to further reduce the risk of exposure of women and infants given their specific sensitivity.

A detailed gender analysis specific for the situation of Vietnam has been carried out during the project preparation stage. The main outcomes of the gender analysis are as listed below.

- There has been much progress on gender equality during the 10 years of implementation of the Law on Gender Equality. However, there are still many gender gaps for women, especially in terms of job opportunities and wages. According to the MOLISA report in 2020, female workers account for nearly half of the national labor force, but employment is not stable and unsustainable.
- According to the General Statistics Office, women account for 49.65% of the labor force, of which three sectors have a high concentration of female workers and are closely related to POPs and mercury such as Textile 75%; Leather and footwear 85%; Seafood processing 85%;)[15].
- In 2018, the Gender Inequality Index scored 0.314, making Vietnam the 68th out of 189 countries[16]
- Women are entering the workforce increasingly and largely in non-standard work sectors, including those related to POPs and mercury. For example, areas related to the production and use of plastics, polymers, metal plating, paint/solvents. The fact is that women participate in all these activities. However, the current regulations on pollution prevention and reduction are not strict. Policies on hazardous waste management in Vietnam are still incomplete.

Based on the above points, a Gender Action Plan has been developed and fully integrated in the project budget and in the project result framework (Annex 9). The Gender action plan includes:

- Availability of gender-specific training and awareness-raising initiatives.
- Initiatives and rules to ensure equal access to the job opportunities generated by the project.
- Equal access to the information generated by the project.
- Assessment of gender-specific chemical risk associated with POPs and PTS used and/or released by industrial activities and in consumer products.
- Specific health and safety rules for female employees in the waste collection and recycling industries.
- Gender mainstreaming in policy documents during review, amendment of existing, or creation of new legislation related to POPs and new POPs in key sectors

During project implementation, UN policies on equal opportunities will be considered with the purpose to ensure that the project supports women's capabilities and their enjoyment of rights, and women's equal and meaningful participation as actors, leaders and decision makers.

[15] https://moh.gov.vn/web/phong-chong-benh-nghe-nghiep/thong-tin-hoat-dong/-/asset_publisher/xjpQsFUZRw4q/content/cham-soc-suc-khoe-nu-cong-nhan-tai-cac-khu-cong-nghiep?inheritRedirect=false

[16] United Nations Development Programme. Human Development Indices. http://data.un.org/DocumentData.aspx?id=415

The budget for the GM action plan represents around 4.7% of the overall GEF grant budget for this project.

Table 4: Barriers to Gender Mainstreaming and Project Activities to address them

Barrier type	Barrier description	Female group affected	Project activity designed to address the barrier	Objective of the project activity
Gender mainstreaming in policy and regulatory documents	Gender mainstreaming entry point is missing in policy documents during review, amendment of existing, or creation of new legislation related to mercury, POPs and new POPs in key sectors	General population, workers exposed to POPs	1.1.1.5 Development of gender specific sections related to risk management of POPs and mercury to be included in the relevant legal documents.	A gender specific section for risk management of POPs and Mercury included in the relevant environmental regulation. At least one gender expert and women's union involved in the consultation process of legal document development.
		General population, workers exposed to mercury waste	1.2.1.5 Development of the gender mainstreaming section in the mercury roadmap, through consultation of female workers and gender experts	The mercury phase-out roadmap includes one section concerning specific risk-management for women and job opportunities. At least one gender expert is involved in the drafting of the roadmap.
		workers exposed to mercury waste	1.2.2.5 Development of specific personal protective measures against mercury identified for women at workplace in the relevant legal documents, through consultation with women workers,	specific personal protective measures against mercury identified for women at workplace in the relevant legal documents
Equal access to the job opportunities generated by the project.	Vietnamese women are mainly employed in low-income or vulnerable occupations, are more likely to be victims of underemployment or unemployment and have more precarious employment conditions.	Women entrepreneurs	1.3.1.6 Development of a specific section of the Green Financing dedicated to the facilitation of women entrepreneurships. Gender experts are consulted during the design, financing and implementation of the Green financing framework	Green financing includes facilitated access to loans to women entrepreneurs. 30% trainees are women in Green Financial training
		Women entrepreneurs	1.3.2.9 Development of Green procurement criteria which include facilitation for women entrepreneurs. Gender experts consulted during the design of the Green Procurement Plan	Specific Green procurement criteria including facilitations for women entrepreneurs.
Availability of gender-specific chemical risk assessment associated with POPs and PTS used and/or released by industrial activities and in consumer products.	Although risk assessment and management procedures are an inclusive approach based on the establishment of standards for the most sensitive population, when risk management in the workplace is not properly enforced, women are the most exposed to risk due to their intrinsic physiological characteristics.	Workers in the manufacturing sector	2.1.1.6 Review of the existing literature on new POPs to identify gender-specific issues related to risk-management in the enterprises and specific risk for female resulting from the exposure of POPs. Sex-disaggregated data on accident at workplace in the manufacturing industry with focus to exposure to chemicals.	One report on the identification gender-specific issues related to risk-management in the enterprises and specific risk for female resulting from the exposure of POPs. One report related to Sex-disaggregated data on accident at workplace in the manufacturing industry, with focus to exposure to chemicals.
		Workers in the manufacturing sector	2.1.2.6 Consultation female workers and gender experts from consumer association in the design of substitute products.	Consultation of female workers and gender expert carried out

Equal access to the information generated by the project. Availability of gender-specific training and awareness-raising initiatives. Availability specific health and safety rules for female employees in the waste collection and recycling industries.	Awareness of the differential effect of air pollution on women, children and men is virtually absent. Moreover, usually, the knowledge on the available technology and related costs related to air pollution prevention, including training, is managed by men workers.	General population	2.1.3.6 Gender-disaggregated assessment and awareness raising of the effect of air pollution on the population. Equal access to training ensured.	A report on the gender-disaggregated effect of industrial air pollution on the general population, with recommendation, carried out. At least 30% trainees on modern Air Pollution Control system are women
	Although women are very often involved in recycling activity, they have less opportunities to receive information related to the risk associated with waste recycling.	Workers in the waste management sector, including informal workers	2.2.1.5 Consultation of female workers and gender experts in the development process Interactions, technical exchanges and commercial agreements between recyclers and industry.	Consultation report on the gender issues in the recycling sector.
Availability of gender-specific training and awareness-raising initiatives.	Nurses are the ones at highest risk of getting in contact with mercury released by broken thermometers at hospitals however they have few opportunities to receive information related to the risk associated with the safe management of mercury waste.	Nurses and doctors	3.1.1.4. Development of specific materials of the risk management, technical guidance on personal protective measures for nurses and doctors at hospital facilities and the safe management of replaced mercury devices, including emergency response.	Training materials and technical guidance for personal protection for nurses and doctor to properly handle EOL mercury devices and mercury spillage.
	Training on technical matters are always mostly attended by men. This trend has been observed also in previously implemented project in Vietnam.	Nurses and doctors	3.1.2.5 Participation of female trainers and trainees in training event related to the elimination of mercury containing products.	At least 60% of the healthcare facility staff trained are female. At least 30% of the office personnel trained are female. At least 30% of the office personnel trained are female.
Equal access to the information generated by the project. Equal access to the job opportunities generated by the project.	The staff of projects implemented by UNDP in Vietnam has usually saw high women participation. Is therefore advisable to continue with this standard	Project staff	Indicator 18: Number of project staff appointed (F/M)	At least 50% staffs of the Project management institutions are women.
		Project staff. Project beneficiaries.	Target: Project management institutions established with an equal F/M ratio. Indicator 19: number of lessons and best practices learn and shared by the project management team.	Target: Both the Project Steering Committee and the Project Management Unit to report on the experience gathered for each of the 3 project technical components in international workshop including gender mainstreaming aspects.

IV.5 Risks

The Risk Assessment is included in Annex 6 of this project document (Atlas Risk Register), as well as the result of the Social and Environmental Screening Procedures - SESP (Annex 5).

The overall risk categorization for this project is determined to be Substantial. Therefore, a series of Risk Mitigation/Avoidance Mechanisms are being proposed in line with the UNDP SES Policy that will be either addressed by project design or through scoped Environmental and Social Management Plan (ESMP) / targeted Plans. These Plans will be completed during the first year of implementation and before undertaking any activity for which a specific risk has been identified.

Table 5 Risk assessment and mitigation measures

Risk Description	*Significance (Low, Moderate Substantial, High)*	*Mitigation measures*
Risk 1: Duty-bearers, and other relevant stakeholders do not have the capacity to meet their obligations in the project	**Moderate**	**This risk is being addressed/mitigated by Project Design. (Components 1 and 4)** (a) The project will deploy training to ensure that the relevant Governmental Officials are assisted. The training will focus on the improvement of knowledge, capacities and practical actions to enforce the enhanced regulatory framework related to green supply chains of chemicals industries, Ecolabel and environmentally sound management principles of Mercury and Mercury/POPs emissions control. The training will also allow the Officials to understand their new extended responsibilities arising from the improved institutional and regulatory frameworks being developed by the project in terms of new legislation, guidelines and mandatory standards. (b) & (c) Consultation meetings with Banks and financial institutions will held during the development of the project document to engage their participation. Training, capacity building, communication will be carried out. The project will support these stakeholders to develop the eligibility criteria for the application to the Green Financing mechanism and demonstration activities under Components 2 and 3 will provide practical experinces in the application of the Financing Mechanism. (d) During design phase, initial agreement has been already achieved with *the Vietnam Environmental Protection Fund (VEPF) and the Banks BIDV, SacomBank* for applications of resources to the Green Financing Mechanism. GEF grant will provide seed funding in the form of micro-grants to faciliate scale up and the Co-finance Letters will be attached to the Project submission and the realizaiton of the co-finance will be monitored under the Component 4 in several strages of the Prioject cycle (including, but not limited to: Annual PIRs, Mid-term review and Terminal Evaluation).
Risk 2: Adverse impacts on workers in the recycling sector who could not be included in the project activities	**Moderate**	**This risk is being addressed/mitigated:** - **Partially by Project design (Components 2 and 4)** - **Partially through scoped ESMP** - **Partially by the Stakeholders Engagement Plan developed** Waste Recycling Industries were pre-screened during design phase. While final selection and engagement (including due diligence and contractual arrangements) will be carried out during implementation phase, it is confirmed that no indigenous people work in the pre-selected industries, therefore Standard 6 is not triggered. Nevertheless, a **scoped Environmental and Social Management Plans (ESMP)** will be prepared to mitigate and monitor any potential risk related to continue to monitor any risk related to potential use of indigenous work force by the industries engaged through the Project. The component 2 of the project will support the work of Recycling Industries by establishing a network and marketplace with manufacturers that may use recycled materials. Promote interaction, technical exchange and commercial agreement between recyclers and industry will bring new opportunities to recyclers to improve and increase their wastes' collection/recycling/processing/treatment capacities. With improved capacities at Industry level, is likely the job opportunities may be created, which will benefit workers with increased job creation and sources of income (Outcome 2.2). Compliance with SES and National/International Rules and Standards on worker's safety was part of the risk mitigation strategy #6, specially: (a) Workers' rights and engagement in the project will be assured through their participation in the marketplace roundtables to prevent that the opportunities generated by the project will translate in the consolidation of existing situations of inequality, discrimination or unlawfulness. The Project Board will also assure the participation of the worker´s representative in the form of the Project Beneficiaries. Grievances/redress mechanism will also serve to address any issue that could be raised by the target stakeholders.

Risk Description	*Significance (Low, Moderate Substantial, High)*	*Mitigation measures*
		(b) A **scoped Environmental and Social Management Plans (ESMP)** will be prepared to avoid and monitor any potential risk related to perception of (external) individual or cooperated stakeholders that work in the Municipal Solid Waste Management (MSWM) (not subject or in the area of influence the Project activities) so to avoid the perception of "loss of income" due to the work in the Hazardous Waste Management area. Strong awareness and communication strategies will be put in place under Component 4 so to address to the MSWM workers in this regard.
Risk 3: Adverse economic impacts to small and medium sized industries and their workers due to banning of imports or restricting the use of certain chemicals used as baseline raw materials.	**Moderate**	**This risk is being mitigated by Project Design. (Components 1 and 2)** • Under the Component 1, the Green Financial Mechanism aims to mitigate the financial impact of the Convention´s implementation by mitigating the financial burden for the enterprises compared to the baseline. - A roadmap for banning of imports or restricting the use of certain chemicals will be introduced through a clearly identified timeline, which is agreed by stakeholders. • Under the Component 2 (Outcome 2.1). The project will engage all stakeholders to identify win-win design or engineering solutions aimed at reducing the need for chemicals whose uses will be restricted and finding affordable and effective alternatives for chemicals that will be banned; - A specific category of "eco-labelled products" will be identified so the design, manufacturing and placing on the market of products fulfilling the labelling requirements will be eligible under the green-financing mechanism that will be developed under the project. - The Project will also engage with the government and seek additional support or conversion financing can be made available to such companies. • During project implementation, Risk Assessment will be undertaken for the pollution control technologies application and the new production BAT/BEP used taking into consideration their impacts on workers. The industries will consult with trade unions or other workplace representatives to avoid or reduce redundancies, the method of selection and mitigating the effects, integrating outcomes into the final restructuring plan. This includes potentially training qualified existing staff on other roles or skills that may be needed at the industry. Where no viable alternatives are identified, a **Restructuring Plan** will be developed to reduce and mitigate adverse impacts of retrenchment on workers, including the following: - Ensuring that any collective dismissals are carried out in accordance with the provisions of national law and applicable collective agreements. - Ensuring that the criteria for selection for redundancy are objective, fair and transparent and aim to be gender-neutral; and implement a procedure which provides individuals with the right to challenge their selection. - Ensuring that all outstanding back pay, social security benefits and pension contributions and benefits are paid to those affected by retrenchment in a timely manner. - In the case of large-scale redundancies, provide UNDP with a copy of the restructuring plan, ahead of any dismissals.
Risk 4: Inadequate participation of women in consultations, policy decision making and design of modalities for capacity building in uptake of BAT/BEP in the targeted industries	**Moderate**	**This risk is being managed by a Targeted Plan developed and attached to the Project Document.** The Gender Action Plan (GAP) is addressing potential risks and included measures to mainstream gender in all project components, with specific focus on encouraging women representation in the following: • In line with the Risk Mitigation Strategy associated in Risk #2, women will be encouraged in the engagement with the project through their participation in the marketplace roundtables to prevent that the opportunities generated by the project will translate in the consolidation of existing situations of inequality, discrimination or unlawfulness. • Adequate inclusion of women employees in the project decision making process and the BAT/BEP selection processes;

Risk Description	*Significance (Low, Moderate Substantial, High)*	*Mitigation measures*
		• Training and supporting more women employees to management positions including being middle and senior managers; • Supporting all the women and men who could potentially lose their jobs to be appropriately relocated; • Making sure the project results dissemination materials be gender sensitive; • The project publicity targets proportionally toward relevant women and girls; and • Collection of sex-disaggregated data wherever relevant.
Risk 5: Risk of accidental release of hazardous substances during handling, treatment, transport between facilities, storage, disposal or testing of substances and wastes contained-chemicals.	**Moderate**	**This risk is being addressed/mitigated:** - **Partially by Project design** - **Partially by ESMP and additional Target Plans** For the Project Contractors/Service providers: the project will engage a number of service providers/contractors to support the operationalization of several activities. These will be engaged using procurement (tendering) processes against clear Terms of Reference and Technical Specifications as approved in the Procurement Plan. (a) Under Outcome 3.1, the project will ensure that qualified waste management companies will be recruited through public tendering process. Clear criteria will be set to ensure strong track records and compliance with relevant National and International regulations and standards for handling, treatment and disposal of hazardous waste. (b) The Contractors in charge of transportation, storage and handling of hazardous chemical must comply with Environmental Protection Law and Circular 36/2015/TT-BTNMT on hazardous waste management (applying for Environmental License and Workers certification and training). (c) Targeted **Spill Prevention and Management Plan** will be developed and implemented at sites for safe handling and disposal of chemicals and mercury-containing obsolete devices and safely cleanup of accidental mercury releases. For the Industries that will participate in BAT/BEP Demonstration Activities: The project will provide technical assistance and oversee the deployment of technologies for the recycling of mercury containing equipment with segregation and storage of mercury. The Industries/Companies will implement such technologies through using their co-finance (not part of Project Budget. (d) Eligible Industries and Enterprises were pre-screened during design phase. While final selection and engagement (including due diligence and contractual arrangements) will be carried out during implementation phase, it is confirmed that all eligible companies are located in industrial (legal) areas with no Heritage/Cultural Sites in these areas, therefore, Standard 4 is not triggered. (e) **Environmental and Social Impact Assessment (ESIA)** for each selected Industry/Company will be developed so to assess the potential social and environmental impacts in their area of influence. A **scoped Environmental and Social Management Plans (ESMP)** will be prepared to avoid and monitor any potential risk related to the demonstration activities co-financed by the Companies and that will be subject of oversight by the Project. (f) Targeted **Spill Prevention and Management Plan** will be developed and implemented at demonstration sites for safe handling and disposal of chemicals and mercury-containing obsolete devices and safely clean up of accidental mercury releases. For the Company(ies) that will operate mercury treatment facilities for fluorescent lightbulbs and mercury amalgam. The project will provide technical assistance for the operationalization and waste management strategy for the mercury treatment facilities, while capital investment for the establishment of the facility will be undertaken by the partner company. No new land will be availed for this project, existing baseline structured will be used. (g) Eligible Industries and Enterprises were pre-screened during design phase. While final selection and engagement (including due diligence and contractual arrangements) will be carried out during implementation phase, it is confirmed

Risk Description	*Significance (Low, Moderate Substantial, High)*	*Mitigation measures*
		that all eligible companies are located in industrial (legal) areas with no Heritage/Cultural Sites in these areas, therefore, Standard 4 is not triggered. (h) **Environmental and Social Impact Assessment (ESIA)** for each selected Industry/Company will be developed so to assess the potential social and environmental impacts in their area of influence. A **scoped Environmental and Social Management Plans (ESMP)** will be prepared to avoid and monitor any potential risk related to the demonstration activities co-financed by the Companies and that will be subject of oversight by the Project. (d) Targeted **Spill Prevention and Management Plan** will be developed and implemented at demonstration sites for safe handling and disposal of chemicals and mercury-containing obsolete devices and safely clean up of accidental mercury releases. (e) A **Risk Management Strategy** inclusive of technical guidance and training materials for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury lamps and medical devices, will be developed;
Risk 6: Risk of flooding at mercury treatment and storage facilities	**Moderate**	**This risk is being addressed/mitigated:** - **Partially by Project design** - **Partially by Target Plan** Eligible Location and Company were pre-screened during design phase. While final selection and engagement (including due diligence and contractual arrangements) will be carried out during implementation phase, it is confirmed that the company is located in industrial (legal) area with no Heritage/Cultural Sites in these areas, therefore, Standard 4 is not triggered. An **Environmental and Social Impact Assessment (ESIA)** for the selected Industry/Company will be developed so to assess the potential social and environmental impacts in their area of influence. A **scoped Environmental and Social Management Plans (ESMP)** will be prepared to avoid and monitor any potential risk related to the interim storage location sponsored by the Project. No new land will be availed for this project, existing baseline structured will be used. Therefore, Standard 5 is not triggered. The **ESIA** will also ensure that the interim storage facilities (Output 2.1.1, Output 3.1.1, Output 3.1.3) are referring to the Minamata Convention's Guidelines on the environmentally sound interim storage of mercury by confirming the following: - Site is appropriate and abides by local zoning requirements, Climate Risk assessment of the location will be carried out to consider the risk of flooding, and also incorporating flooding mitigation measures. - Facility is designed to facilitate the safe handling of containers. - Indoor air is vented outside, and where levels of mercury call for venting via activated carbon or other mercury capture systems, system is installed and operational. - Site is equipped with a fire protection system. - Emergency response plan in place and local fire department, where available, is sufficiently informed, trained, equipped and otherwise prepared to safely handle any fires at the facility. - Facility is constructed of non-combustible materials and non-combustible materials should be used for pallets, storage racks and other interior furnishings. - A drainage and collection system for discharged water exists enabling mercury monitoring from the site. - Floors of storage facilities are covered with mercury-resistant materials and have no cracks. - The facility is clearly marked with warning signs and secured to avoid theft and unauthorized access. Should any of these requirements not be met, then Project will support their introduction, including retrofitting of the storage facility.
Risk 7: Health and safety risk for the workers involved	**Moderate**	**This risk is being addressed/mitigated by Project Design.** **(Components 2, 3 and 4)**

Risk Description	*Significance (Low, Moderate Substantial, High)*	*Mitigation measures*
in the activities of handling, treatment, transport between facilities, storage, recycling, disposal or testing of substances and wastes contained-chemicals.		**This risk will be mitigated by additional ESIA/ESMP.** Additional avoidance measures in the engagement activities with the stakeholders under the Outcome 2.1 and 3.1 will be managed through the **ESMP.** The project will only engage with formally established and licensed enterprises, and will not carry out new construction. Prior to engage with any Company (Service Provider, Contract and/or Co-financier) the project will carry the appropriate **ESIAs** and prepare the **ESMP** in line with Risk Mitigation Strategies 2, 5 and 6 which will also consider that occupational health and safety measures are applied (through an **Occupational Risk Assessment**) <u>For activities related to handling, treatment, transport between facilities, storage, disposal or testing of wastes</u> (a) Implement modern Air Pollution Control Systems to prevent the release of mercury and U-POPs suitable also for small enterprises; (Output 2.1.3) (b) Implement Relevant international guidelines and BEP on operational safety procedures for hazardous chemicals waste handling, transport, storage and disposal in accordance with international practice will be adopted during the first and second year of implementation (Output 3.1.1); (c) Develop and deploy training program involves provision of the necessary operational and safeguards exercise to the staff that are to be directly involved in the work on the treatment and storage area, and will be delivered in advance of starting actual site work and be updated throughout the period of work on the site as required. The scope of the training would cover overall hazardous waste and contaminated site management with specific emphasis on the packaging, physical handling procedures, inventory control and record keeping, site monitoring, emergency response and overall safeguards - related EHS practices and procedures. The curriculum for the training will utilize the various international guidance materials available (Outputs 3.1.1, 3.1.2 and 3.1.3).; (d) Monitoring and evaluation will be conducted to ensure that enterprises and workers are conducting their work under safe conditions (Outcome 4.2, , and also technical supervision activities carried out under Output 2.1.2 – activities. 2.1.2.3 and 2.1.2.4 and 2.1.3 – activities. 2.1.3.3 and 2.1.3.4) <u>For activities related to handling and recycling wastes</u> (e) The project will include awareness raising initiatives and training specifically tailored to inform and equip recycling workers with the appropriated PPE as well as Best Practices in handling of waste. Risk Management Measures will be adopted when dealing with such kind of waste, including the identification of waste material potentially contaminated by POPs, the properly use of PPE, norms related to the management of non-recyclable material to prevent open burning of waste which may generate U-POPs (dioxins). <u>To avoid risk of engaging with minors in the targeted industries.</u> (f) The project will only engage with companies or legal/ofrmal institutions fully compliant to local laws: the Labor Law (2019), the Children's Law (2016) and all documents guiding the implementation clearly stipulate the employment conditions of workers of under aged children. (g) Accordingly, the project will not engate with any company/partner that use workers under 18 in anyactivities of producing, using or transporting chemicals (Labor Law, (Article 147). (h) The Project will only engage to companies that are licensed following the Circular 36/TT-BTMTMT on the area of hazadous waste management. (i) Except for awareness raising actions (which indeed will be also aimed at preventing child employment), the project will not conduct any direct activity with informal operators.
Risk 8: Increased GHG emissions or consumption of	**Low**	**This risk is being addressed/mitigated by Project Design.** **(Components 2, and 33)**

Risk Description	*Significance (Low, Moderate Substantial, High)*	*Mitigation measures*
raw materials, energy, water…		Based on experience on previous GEF project in Vietnam, energy and water consumption in production processes of chemicals companies were reduced. Therefore, POP reduction is usually accompanied by the savings of energy and resources. When selecting the processes and technologies for the transition of industries, the level of GHG emissions and use of raw materials of the considered alternatives will be assessed as the criteria to be evaluated for best environmental practice. The ESMP (under Risks 5 and 6) will also incorporate the relative aspects of Standards 8 triggered and incorporate SES requirements where applicable.
Risk 9: The COVID-19 Pandemic may inhibit the smooth implementation of this project, especially the sharing of the foreign experiences	**Low**	Vietnam Government at different levels has taken measures to prevent COVID-19, including recent widespread vaccination in the country. The last wave of COVID-19 during July – September 2021 provided lots of experience to the Vietnam Government and counterparts in coping with difficult situation, improving its resilience and agility to adapt to different context. The project plans to carry out continuous monitoring and assessment of the impact of COVID-19 on the progress of project implementation and undertake appropriate adaptive management. Project management and implementation supervision can be undertaken through various means such as online and telephone interactions, international experiences may be shared through web seminars.
Risk 10: Organizational structure changed at the IP (Vietnam Environment Administration)	**Low**	The new Vietnam Prime Minister introduce a new directive, in which the government is planning to reduce the number of government entities in ministries. This can result in the change of organizational structure in some ministries, agencies including Vietnam Environment Administration. Such any re-arrangement of structure could lead to delay in project implementation. UNDP will keep monitoring the process closely, and share this risk to Project Steering Committee led by the Vice Minister of MONRE, to ensure the smooth continuation of the project if the organizational structure changed happens.

IV.6. Climate Screening and Climate Risk Assessment

Vietnam has both a tropical climate zone and a temperate climate zone, with all the country experiencing the effects of the annual monsoon. Rainy seasons correspond to monsoon circulations, which bring heavy rainfall in the north and south from May to October, and in the central regions from September to January. In the northern regions, average temperatures range from 22°C–27.5°C in summer to 15°C–20°C in winter, while the southern areas have a narrower range of 28°C–29°C in summer to 26°C–27°C in winter. Vietnam's climate is also impacted by the El Niño Southern Oscillation (ENSO), which influences monsoonal circulation, and drives complex shifts in rainfall and temperature patterns which vary spatially at a sub-national level. El Niño has also been shown to influence sea-level, drought incidence and even disease incidence.[17]

Vietnam is a country prone to climate change effects, sea level rise, and extreme weather events. The country has issued and implemented a National Strategy and National Action Plan to Respond to Climate Change. Vietnam demonstrates dedication to combating climate change through a range of national policies and concrete adaptation measures. In 2011, the National Climate Change Strategy was issued, outlining the objectives for 2016–2050. In 2012, the National Green Growth Strategy was approved, which includes mitigation targets and measures. In 2013, the Law on Natural Disaster Prevention and Control was enacted, aiming to address diverse natural hazards that affect the country, which are primarily climate related. Additionally, the 2014 Law on Environment includes a full chapter on climate change. Vietnam ratified the Paris Agreement on November 3, 2016 and the associated Nationally Determined Contribution (World Bank, 2019).

The surveys carried during the Project Design Phase (PPG) identified that Mercury treatment and storage facilities are mostly located in the suburban areas of big cities such as Hanoi, Ho Chi Minh city, and delta areas far from the sea, where the potential impacts of sea level rise and other extreme weather events are expected to be not as severe

[17] Country Climate Risk Profile, The World Bank (2019)

as in other parts of the country and many climate change adaptation solutions have been implemented. This will help reduce the risk of flooding of mercury treatment and storage facilities. As mitigation measures, flood risks will be considered when locating and designing the mercury treatment and storage facilities to minimize the risk of inundation; new mercury treatment and storage facilities will be designed to withstand the most intense and violent storms, heavier flooding, etc., and rigorous guidance for climate-related risk management for such facilities will be developed. Emergency drills to be ready with extreme flooding and storm incidents will also be undertaken by the project.

No new land allocation and construction of new infrastructures will be pursued/promoted by the Project. The project will mainly work by promoting POPs-free technologies, processes, and materials, and by improving the environmental performance of existing baseline plants. The resilience of these plants to possible effects of the climate change will be considered as selection criteria during the first year of the project implementation. For instance, the project would not invest in area prone to flooding. Nevertheless, extreme weather conditions are more frequent in the last year and may potentially affect any place in Vietnam. Technology and materials developed under the project to replace POPs and minimize the use or generation of POPs will also be assessed in terms of potential increase or decrease of energy consumption and release of GHGs throughout their entire lifecycle.

Energy Consumption and GHG emission and increase use of raw materials: As the project intends to replace 20,000 compact or tube fluorescent lamps with LED lamps, it will also directly reduce the energy consumption as LED are from 33% to 40% more efficient than CFL[18]. Each replaced lamp (considering an average luminosity of 1200 lumen) will allow for a saving of around 7.5W/hr, which, considering a lifespan of not less than 50,000 hrs, means a total energy saving of around 7.5W x 50,000 hrs = 375 KW hr or 1350 MJ for each lamp installed over its entire lifespan. This will be reflect in the reduction of GHG emission, based on the carbon intensity of the electricity consumption in Vietnam, in which GHG emissions reduction data will be collected during the project implementation.

IV.7 Global Environmental Benefits

The project will prevent the use of POPs in manufacturing sectors (plastics, polymers, paint, etc.), through establishing a green-labeling mechanism to be supported with under VEPF and other financial mechanism. Activities aimed at promoting less-chemically intensive design for plastic and product will also ensure that not only the use of current POPs is limited, but also the future use of POPs precursors and POPs-like compounds in general. The prevention of the use and release of POPs will therefore go beyond the direct impact of the project. On the side of mercury, the project will speed-up the substitution from mercury toward non-mercury products (fluorescent lamps and mercury thermometers) and will also prevent the release of mercury and U-POPs in the environment, by supporting the design and installation of air pollution control system in industrial facilities and the demonstration of ESM of mercury waste.

The following targets for project direct impact can be anticipated:

- Reduction of the release of mercury in the environment through shifting from mercury products vs. non-mercury products: At least 20,000 fluorescent lamps and 10,000 thermometers will be collected and processed to segregate mercury;
- Direct or indirect reduction of new POPs, through the replacement of the use of SCCP and PFOS (either through safe chemicals or POPs-free processes and products), for an estimated amount of 8 tons of SCCP and 2 tons of PFOs;
- Safe segregation and disposal of plastic and polymer articles containing potentially contaminated by POPs (c-PBDE, HBCD, PFOAs), or through the indirect reduction obtained through chemical substitution or product and material design: at least 500 tons of material with a concentration of BFR or PFOAs in the order of 5%; (25 tons of new POPs totally);
- Avoided emission of mercury and U-POPs in the environment through the establishment of APCS capable to reduce the concentration of mercury from an average 100µg/Nm for mercury and 6.93 ngTeq/Nm for PCDD/F (based on the average analytical result for incinerators based on the surveys carried out under the Viet Nam POPS and Sound Harmful Chemicals Management Project) to 10µg/Nm for mercury and 0.1

[18] https://www.viribright.com/lumen-output-comparing-led-vs-cfl-vs-incandescent-wattage/

ngTeq/Nm for PCDD/F for a number of plant representing a flue gas flow rate of up to 1,000,000 Nm /hr . (648 kg of mercury/year and 2 gTeq/year for PCDD/F.

- GHG emissions reduction to be assessed during the project implementation as direct result of the replacement of 20,000 fluorescent lamps with 20,000 LED lamps.

IV-8. Innovativeness, Sustainability and Potential for Scaling Up

Innovativeness.

The project intends to pursue an innovative approach for the replacement of POPs in the relevant manufacturing industrial sector, based not only on just chemical replacement, but also considering alternative designs and processes. An example of innovativeness has been already demonstrated in the GEF ID 9379 Project "*Application of Green Chemistry in Vietnam to Support Green Growth and Reduction in the Use and Release of POPs/Harmful Chemicals*", where two plants have changed their process to replace POPs with non-POPs. In the paint sector, whilst in one case the replacement of POPs (SCCP) with non-POPs (MCCP) followed quite a classical chemical replacement modality, in another case a completely new paint product, which is POP- and solvent-free, has been developed, so the project will:

(a) For the steel-plating industry, two completely new lines free of POPs (PFOS) and Cr^{6+} will replace the old process based on PFOS, out of which one is (Zinc flake coating) is a zero-wastewater process. This approach will promote a mindset shifting from conventional, chemical-based solutions to achieve desired properties of materials, to a more holistic approach based on a smarter selection of materials and design, to reduce the need for special properties and hence special chemicals.

(b) The project will demonstrate additional technologies for the replacement of HBCDD in the XPS/EPS foam, the replacement of PFOS/PFOAs and SCCP in other industrial sectors, as well as the implementation of APCSs for medium-scale plants, which, although consolidated technologies, may be considered quite innovative technologies in Vietnam.

(c) The project intends to demonstrate small-scale, low-cost mercury waste vacuum shredders to be used for extracting mercury from specific waste (lamps, thermometers) and ensure the recycling of material like glass, plastic, and metal after segregation.

(d) In relation to PBDE-contaminated plastics, to ensure that recycled plastic will be free of POP BFRs, a mix of procedures, ranging from the early identification of the origin of the plastic waste, preliminary classification based on the density, XRF testing will be developed for ensuring that plastic waste contaminated by BFR are segregated without affecting the recycling cost too much. All the above processes are highly innovative, although already available commercially, and have a high potential to be scaled up because they can either generate value (through a better quality of the recycled material) or minimize the cost for environmental treatment.

(e) Finally, on technological aspects, the project intends to pursue innovative strategies in at least additional two sectors: the Eco-labeling scheme and the financial incentive mechanism.

In regards to *Eco-labeling*, the project will foster the approach of the green-labeling of products and materials (Oeko-Tex, brand-specific, Vietnam Ecolabeling) in Vietnam. Although Eco-labeling concept is not new, it is still an innovative approach in Viet Nam. To this end, and with the aim to prevent the use of POPs in plastic, foam, and polymer articles, the project will conduct a survey to verify the list of chemicals used by plastics and polymers industry (in addition to POPs) on which there may be agreement for restriction or limitation in accordance with existing green-labeling schemes.

The *financing scheme*, although already existing – though incipient – in the baseline project, will be re-assessed and proposed as a blend that merges the classic financial schemes. The innovation here consists mainly in the fact that the eligibility criteria to access the competitive loan include compliance with the Stockholm Convention and the project objectives. The challenge will be to identify criterion, which at the same time could represent a reduced solvability risk (through the reduced liability achieved through the elimination of hazardous chemicals from the process) and a benefit for the enterprises – through reduced interest rates, facilitated applications, or reduce warranty requirements.

Sustainability.

The Eco-labeling scheme and the green financing mechanism will be designed and implemented will assure the long-term sustainability of the project after its completion. To be more specific, while a limited demonstration of POPs replacement will be undertaken within project timeframe, the Eco-labeling, green procurement, and green financing mechanism are all initiatives that will be launched within project duration, will be internalized by Governmental and Financial Institutions, and will be continued as routine environmental tools after the project.

Hence, Eco-labeling, green procurement, and green financing should not be intended as project-limited intervention, but rather as systemic change with long term reach.

Potential for scaling up.

The project is designed in a manner where all Components are integrated and interlinked so to assure that demonstration of POPs elimination from the manufacturing process, the extension of Eco-labeling to more products, the instalment of APCS for the abatement of U-POPs and mercury are linked to the new criterion for the launch of the Green Financial Mechanism directed to chemical and healthcare industries/sectors.

The establishment of a financing mechanism supported by VEPF and possibly other institutions that will join during the project implementation has exactly the purpose to ensure the scaling up of project initiatives, which cannot be ensured only with the limited grant provided by the project.

The knowledge management interventions of the project will be designed to ensure the future scaling up of project initiatives, as it will envisage shared network of knowledge among manufacturers, industries, and designers on the design and manufacturing criteria, which may be intrinsically less chemical-intensive, for specific categories of products, product components, and materials.

V. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): SDG 3(Good Health and Wellbeing); SDG5 (Gender Equality); SDG9 (Industry, Innovation and Infrastructure); SDG12 (Responsible Production and Consumption); SDG13 (Climate Action)				
This project will contribute to the following country outcome (UNDAF/CPD, RPD, GPD): One Plan Focus Area 2**: ensuring climate resilience and environmental sustainability** Outcome 2.2: Sustainable management of natural resources and the environment. By 2021, Viet Nam has enhanced sustainable management of natural capital, biodiversity and ecosystem services and improved the quality of the environment, while contributing to the implementation of multilateral environmental agreements.				
	Objective and Outcome Indicators (no more than a total of 21 indicators)	Baseline[19]	Mid-term Target[20]	End of Project Target
Project Objective: The objective of the project is to protect human health, environment and promote sustainable production and consumption through the reduction of the use of POPs, new POPs and mercury and the release of POPs, U-POPs and mercury throughout the entire lifecycle in key industrial sectors supported by Ecolabel system, Green Financing and Procurement mechanisms	**Mandatory** Indicator 1 (GEF Core Indicator 11): # direct project beneficiaries disaggregated by gender (individual people) Number of people (F/M) participating in training and awareness raising activities, benefitting from green financial incentives, or from project-related job opportunities. Target: 2,000/1,500	0	600/400	2,000/1,500
	Mandatory Indicator 2 (GEF Core Indicator 11): # indirect project beneficiaries disaggregated by gender (individual people) Number of people (F/M) benefitting from reduced exposure to mercury, POPs or U-POPs. Target: 800,000/800,000	0	0/0	800,000/800,000
	Mandatory Indicator 3 (GEF Core Indicator 9)**:** Direct or indirect reduction of new POPs: target 35 tons	2.74 tons of PFOS and SCCP reduced through Green Chemistry Project[21].	New POPs reduced: 10	New POPs reduced: 35 t
	Mandatory Indicator 4 (GEF Core Indicator 9)**:** Mercury release reduced. Target: 648 kg of mercury emission avoided, 10,000 thermometers and 20,000 mercury lamps replaced	Mercury release reduced:0	Mercury release reduced: 2500 Th and 5000 mercury lamps. 162 kg Hg avoided.	Mercury release reduced: 10000 Th and 20,000 mercury lamps. 648 kg of mercury emission avoided.

[19] Baseline, mid-term, and end of project target levels must be expressed in the same neutral unit of analysis as the corresponding indicator. Baseline is the current/original status or condition and need to be quantified. The baseline must be established before the project document is submitted to the GEF for final approval. The baseline values will be used to measure the success of the project through implementation monitoring and evaluation.

[20] Target is the change in the baseline value that will be achieved by the mid-term review and then again by the terminal evaluation.

[21] Green chemistry Project. GEF ID 9379, tittle "Application of Green Chemistry in Viet Nam to support green growth and reduction in the use and release of POPs/harmful chemicals"

	Mandatory Indicator 5 (GEF Core Indicator 9): U-POPs releases reduced. Target: 2 g Teq/yr	U-POPs release reduced: 0	U-POPs releases reduced: 0	U-POPs releases reduced: 2 g Teq/yr
Project component 1	**Promote sustainable production - consumption in key sectors through Ecolabeling, Green Financing and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors**			
Project Outcome[22] 1.1 Environmental regulation upgraded to include new POPs; Ecolabel and related policies on POPs and mercury lifecycle management developed and implemented. (Note: Outcome 1.1 and 1.2 merged together to fulfil UNDP template requirements)	**Indicator 6**: Number of environmental regulation upgraded/enacted. Target: one environmental regulation concerning new POPs drafted and enacted; One environmental regulation concerning ecolabel drafted and enacted	Environmental regulation related to new POPs are missing / incomplete. Environmental regulation related to the phasing out of mercury missing/incomplete. Environmental regulation on eco-labelling does not include POPs and mercury.	Environmental regulations on ecolabel drafted and enacted; environmental regulation on new POPs drafted.	One environmental regulation concerning new POPs drafted and enacted; One environmental regulation concerning ecolabel drafted and enacted.
	Indicator 7: Number of policies on POPs and mercury lifecycle drafted and enacted.	A policy on the lifecycle of POP-containing articles and on mercury-containing articles is currently missing.	One policy on the lifecycle of POP-containing products, and one policy on the lifecycle management of mercury-containing products drafted.	One policy on the lifecycle of POP-containing products, and one policy on the lifecycle management of mercury-containing products enacted.
Outputs to achieve Outcome 1.1	1.1.1 Review, amendment of existing, or creation of new legislation related to POPs and new POPs in key sectors (e.g., plastic and polymers,, metal plating, paint/solvents, etc.), to ensure inclusion of provisions to support, *inter alia*, prohibition of import for new POPs; concentration limits for POP brominated flame retardants, HBCDD, SCCP and other POPs/PTS in products and waste; development of Eco-labelling schemes; New EPR schemes supported. 1.1.2 Roadmap and sectorial plans for replacement of mercury thermometers and mercury-containing lamps established. 1.1.3. Review of the existing legislation related to mercury in products and mercury emission carried out, to help develop, strengthen, and ultimately enforce regulations concerning technical standards for mercury waste management.			
Outcome 1.2 Development of a Green Financing Mechanism to sustain the Green Financing Mechanism for shifting enterprises towards a non-POP and a non-mercury manufacturing 2 indicators maximum	**Indicator 8***:* Green financing mechanism is in place Target: a green financing mechanism with a fund size of 5,000,000 USD fully subscribed	A green financing mechanism is in place however, it doesn't include POPs or mercury	Green financing mechanism designed, approved and subscribed for at least 1 million US dollar.	Green financing mechanism fully subscribed (5million US dollars)
	Indicator 9*:* Eco-label system and green procurement are in place	Eco-label systems do exist in several sectors; however, they do not	Eco-label system including requirements for POPs and mercury	Eco-label system including requirements for POPs and mercury content developed

[22] Outcomes are medium term results that the project makes a contribution towards, and that are designed to help achieve the longer-term objective. Achievement of outcomes will be influenced both by project outputs and additional factors that may be outside the direct control of the project.

	Target: Eco-label system including requirements for POPs and mercury content developed and approved for at least 10 product categories, with at least 5 industries certified. Green procurement policy developed, approved and implemented with at least 100,000 USD of green products purchased.	include requirements on mercury or POPs concentration. A green procurement system is missing	content developed for at least 10 product categories. Green procurement policy developed, approved.	and approved for at least 10 product categories, with at least 5 industries certified. Green procurement policy developed, approved and implemented with at least 100,000 USD of green products purchased.
Outputs to achieve Outcome 1.2	1.2.1 Green Financing Mechanism designed, funded and implemented to support private sector on getting incentives policy (e.g., tax, fee, credit fund, investment equity). Eco-label improved, funded and properly communicated, building on national and other finance institutions (e.g., the Viet Nam Environment Protection Fund (VEPF)) 1.2.2 Green Procurement scheme designed and implemented for MONRE, some DONREs and health-care facilities (MOH)			
Project component 2	**Life cycle management of POPs and PTS containing products**			
Outcome 2.1 Sustainable manufacture and design of plastic, polymers, polymers, paint, metal finishing and other products improved to prevent the use of POP and the release of POP and mercury in the environment. 2 indicators maximum	**Indicator 10**. Number of key sectors where alternative product design is demonstrated Target: A knowledge network established among manufacturing sectors with at least 2 sectors to be selected based on the result of the survey.	Alternative design finalized at the reduction of POPs or mercury has been first demonstrated in electroplating and paint companies under Green Chemistry Project.	Key sectors selected	Alternative product design demonstrated in at least 2 industrial sectors of the network
	Indicator 11: Number of air pollution control systems designed and installed at industrial facilities. Target: air pollution control systems designed and installed for an overall amount of 1×10^6 Nm^3/h of flue gas treated.	In most cases SMEs and small-mid scale incinerators make use of simple air pollution treatment systems not suitable for the reduction of POPs	Air pollution control systems designed and financed by private industry with support of Green Financing for an overall amount of 1×10^6 Nm^3/h of flue gas treated	Air pollution control systems procured and installed for an overall amount of 1×10^6 Nm^3/h of flue gas treated
Outputs to achieve Outcome 2.1	2.1.1 Analysis of the manufacturing sectors for which the use of new POPs has been recently confirmed but not yet included in the NIP carried out, in order to strengthen baseline and select optimum sectors and enterprises for pilot activity to improve POPs management in the value chain. 2.1.2 Alternative product design to prevent the use of hazardous chemicals additives in general and consequently the use of POPs (e.g., BFR, PBDE, HBCD, PFOS/PFOAs, SCCP) in key sectors demonstrated. 2.1.3 Design and implementation of modern Air Pollution Control Systems to prevent the release of mercury and U-POPs suitable also for small enterprises carried out			
Outcome 2.2 Closure of the gap between recyclers and industry to sustain circular economy and to prevent	**Indicator 12**: Number of demonstrations of reuse, up-cycling, recycling or waste-to-energy established Target: at least one demonstration carried out for reuse, upcycling, recycling or waste to energy of products and materials.	Although the recycling of some materials is common in Vietnam, the recycling operations are often not environmentally	At least one demonstration designed for the reuse, upcycling, recycling or waste to	At least one demonstration carried out for the reuse, upcycling, recycling or waste to energy of products and materials.

the contamination of recyclable materials. 2 indicators maximum		sound. The concept of upcycling is basically unknown in Vietnam.	energy of products and materials.	
	Indicator 13: Number of take-back schemes designed and piloted for product or product components. Target: at least one take-back scheme demonstrated entailing prevention of POPs or mercury in the manufacturing chain or their release in the environment	In Vietnam, except for the case of water bottle, take-back scheme is uncommon.	At least one take-back scheme designed entailing the phase out or the release prevention of POPs and mercury in the environment	At least one take-back scheme piloted entailing the phase out or the release prevention of POPs and mercury in the environment
Outputs to achieve Outcome 2.2	2.2.1 Interaction, technical exchange and commercial agreements between recyclers and industry promoted to identify and implement solutions for the horizontal and safe recycling of materials and for the segregation and safe disposal of POP-contaminated materials.			
Project component 3	**Lifecycle management of mercury-containing products**			
Outcome 3.1 Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management. 2 indicators maximum	**Indicator 14**: Number of medical devices containing mercury replaced with non-mercury devices Target: at least 10,000 mercury-containing thermometers replaced with non-mercury thermometers	Although the number of mercury thermometers replaced in hospitals is increasing, these equipment are still very common in many hospitals in Vietnam.	At least 5000 mercury-containing thermometers replaced with non-mercury thermometers	At least 10,000 mercury-containing thermometers replaced with non- mercury thermometers
	Indicator 15: Number of mercury-containing lamps replaced with mercury-free lamps Target: at least 20,000 mercury-containing lamps replaced with mercury-free lamps	Fluorescent lamps are being replaced by LED lamps in Vietnam but the replacement rate is still low and faces market constraints.	At least 10,000 mercury-containing lamps replaced with non-mercury lamps	At least 20,000 mercury-containing lamps replaced with non-mercury lamps
Outputs to achieve Outcome 3.1	3.1.1. Risk management, technical guidance and training materials developed for the sound management of mercury stockpiles, mercury waste and obsolete mercury-containing equipment, with specific reference to lamps and medical devices containing mercury. 3.1.2. Capacities of institutions are strengthened to eliminate use of mercury containing products (eg. Mercury lamps, thermometers and cosmetics); road map and plan for using of mercury-free devices developed and implemented. 3.1.3 Technologies for the recycling of mercury containing equipment with segregation and storage of mercury established.			
Outcome 3.1 Environmentally sound management of End-of-Life mercury-containing products established	**Indicator 16**: Number of technical guidance made available and training on mercury performed. Target: at least 1 set of technical guidance and 10 training packages delivered in Training of Trainers events for health-care facilities.	Limited training on mercury devices carried out in the course of previous GEF projects.	Training needs assessed Technical guidance compliant with WHO guidelines and training package prepared At least 4 training carried out	The remaining 6 training carried out for a total of 10.
	Indicator 17: Number of facilities for the recycling and disposal of mercury-containing devices and waste established	A dedicated facility for the safe storage and management of EOL	A site for the establishment of the facility is selected.	Equipment for mercury waste storage and treatment

	Target: at least one facility for the storage and disposal of mercury-containing devices established	mercury-containing equipment and lamp is missing.	Design of the facility, including technical specification and technical bidding carried out.	procured, tested and operational in one site.
Outputs to achieve Outcome 3.1	3.1.1. Risk Management Strategy, technical guidance and training materials developed for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury lamps and medical devices. 3.1.2. Capacities of institutions are strengthened to eliminate use of mercury containing products (e.g., Mercury lamps, thermometers and cosmetics) in medical facilities; road map and plan for using of mercury-free devices developed and implemented (20,000 mercury thermometers replaced)			
Project component 4	**Knowledge management and M&E**			
Outcome 4.1 Project management team established, lesson learnt and knowledge generated by the project properly shared and communicated. 2 indicators maximum	**Indicator 18**: Number of project staff appointed (F/M) Target: Project management institutions established with an equal F/M ratio.	Not applicable	All the project staff required for the PMU and the PSC is appointed within 3 months from project start, with a proportion F/M not smaller than 1.	Additional project staff recruited if needed by the project, with a proportion F/M not smaller than 1.
	Indicator 19: Number of lessons learned and best practices shared by the project management team. Target: Both the Project Steering Committee and the Project Management Unit to report on the experience gathered for each of the 3 project technical components in international workshop including gender mainstreaming aspects.	Not applicable	Procedures for the acquisition and exchange of information and knowledge generated by the project established. At least one knowledge sharing workshop involving UN/GEF projects on eco-labelling, green chemistry and green financing held where lessons learnt for each project component are shared.	At least one further knowledge sharing workshop (for a project total of 2) involving UN/GEF projects on eco-labeling, green chemistry and green financing held where lesson learnt for each project component are shared and proposal for follow up activities discussed. 10 knowledge products or lessons learnt produced and published.
Outputs to achieve Outcome 4.1	4.1.1 Project inception and inception report carried out 4.1.2 Project steering committee and project management unit established 4.1.3 Knowledge management system including project website established			
Outcome 4.2 Project monitoring, evaluation and audit carried out in compliance with GEF, UNDP and GoV standards	**Indicator 20**: Number of evaluation and audit completed and properly reflected in project management. Target: one mid-term review, one terminal evaluation completed.	Not applicable	Mid-term review completed and management responses elaborated and approved.	Terminal evaluation completed and management responses evaluated and approved.

	One financial audit carried out yearly		Two financial audits completed	Further two financial audits completed (total of 4)
	Indicator 21: Number of management report approved. Target: at least one PIR per year drafted and approved. Annual and Quarterly Project reports drafted and approved; Annual Project Workplan drafted and approved; Final project report drafted and approved.	Not applicable	One inception report, Two PIRs Two Annual Project Workplan Eight quarterly project reports	Inception report Two additional PIRs (total of four) Two additional Annual Project Workplan (total of four) Eight additional quarterly project reports (total of 16) Final project report
Outputs to achieve Outcome 4.2	4.2.1. Project and its activities monitored and evaluated on a periodic basis in line with GEF, UNDP and government requirements. 4.2.2 Indicators established to facilitate successful project implementation and sound impact assessment.			

VI. MONITORING AND EVALUATION (M&E) PLAN

The project results, corresponding indicators, and mid-term and end-of-project targets in the project results framework will be monitored annually and evaluated periodically during project implementation. If baseline data for some of the results indicators are not yet available, they will be collected during the first year of project implementation. The Monitoring Plan details the roles, responsibilities, and frequency of monitoring project results.

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. The UNDP Country Office is responsible for ensuring full compliance with all UNDP project monitoring, quality assurance, risk management, and evaluation requirements. Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the GEF Monitoring Policy and the GEF Evaluation Policy and other relevant GEF policies[23]. The costed M&E plan included below, and the Monitoring plan, will guide the GEF-specific M&E activities to be undertaken by this project.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point (OFP) and national/regional institutes assigned to undertake project monitoring. The GEF OFP will strive to ensure consistency in the approach taken to the GEF specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved, for example, by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF agencies.

Additional GEF monitoring and reporting requirements:

Inception Workshop and Report: A project inception workshop will be held within 60 days of project CEO endorsement, with the aim to:

a. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
b. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
c. Review the results framework and monitoring plan.
d. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
e. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
f. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
g. Plan and schedule Project Steering Committee meetings and finalize the first-year annual work plan.
h. Formally launch the Project.

GEF Project Implementation Report (PIR):

The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. The PIR submitted to the GEF will be shared with the PSC. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

[23] See https://www.thegef.org/gef/policies_guidelines

GEF Core Indicators:

The GEF Core indicators included as Annex 12 will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent ground truthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF website.

Independent Mid-term Review (MTR):

The terms of reference, the review process and the final MTR report will follow the standard templates and guidance for GEF-financed projects available on the UNDP Evaluation Resource Center (ERC).

The evaluation will be 'independent, impartial, and rigorous. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by July 2024. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report's completion.

Terminal Evaluation (TE):

An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the UNDP Evaluation Resource Center.

The evaluation will be 'independent, impartial and rigorous. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by May 2026. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report's completion.

Final Report:

The project's terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the PSC during an end-of-project review meeting to discuss lessons learned and opportunities for scaling up.

Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information**:** To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[24] and the GEF policy on public involvement[25].

[24] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/
[25] See https://www.thegef.org/gef/policies_guidelines

Monitoring and Evaluation Plan and Budget: This M&E plan and budget provides a breakdown of costs for M&E activities to be led by the Project Management Unit during project implementation. These costs are included in Component 4 of the Results Framework and TBWP.		
GEF M&E requirements	**Indicative costs (US$)**	**Time frame**
Inception Workshop	10,000	Within 60 days of CEO endorsement of this project.
Inception Report	None[26]	Within 90 days of CEO endorsement of this project.
M&E of GEF core indicators and project results framework	43,530	Annually and at mid-point and closure.
GEF Project Implementation Report (PIR)	None[27]	Annually typically between June and August
Monitoring of Gender Action Plan	18,000	Ongoing.
Supervision missions	None	Annually
Independent Mid-term Review (MTR)	39,726	By July 2024
Independent Terminal Evaluation (TE)	48,554	By May 2026
TOTAL indicative COST	**159,810**	

[26] The cost is included in the cost for the Project manager as this will be done by he/she
[27] The cost is included in the cost for the Project manager as this will be done by he/she

VII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

The project will be implemented following UNDP's National Implementation Modality (Full NIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of Vietnam, the Vietnam Government's regulations for ODA project/program management (Decree 56/2020/NĐ-CP), and the Joint Harmonized Project/Program Management Guidelines of the UN and Government of Vietnam.

Implementing Partner (IP): The Implementing Partner for this project is the **Ministry of Natural Resource and Environment (MONRE) of Vietnam.**

The Implementing Partner (IP) is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document. The IP is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.

The Implementing Partner is responsible for executing this project. Specific tasks include:

- Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.
- Overseeing the management of project risks as included in this project document and new risks that may emerge during project implementation.
- Procurement of goods and services, including human resources.
- Financial management, including overseeing financial expenditures against project budgets.
- Approving and signing the multiyear workplan.
- Approving and signing the combined delivery report at the end of the year; and,
- Signing the financial report or the funding authorization and certificate of expenditures.

The MONRE is also acting as the Governing Body of the project, as regulated by the Decree 56/2020/ND-CP. The Governing Body will:

(i) decide the organizational structure of the project management apparatus, including the Project Steering Committee, Project Management Unit;
(ii) formulate and approve the 5-year plan for implementation of the project;
(iii) approve the overall plan for project implementation; compile and approve annual plans for project execution;
(iv) conduct the procurement process;
(v) organize the supervision and assessment of the project progress, ensure punctuality, quality, and achievement of set targets;
(vi) bear the additional costs incurred because of human errors, wastefulness, corruption, and misconducts in management and use of ODA under its management in accordance with regulations of law on public investment; and
(vii) perform other duties and entitlements in accordance with law, specific international treaty or agreement on ODA.

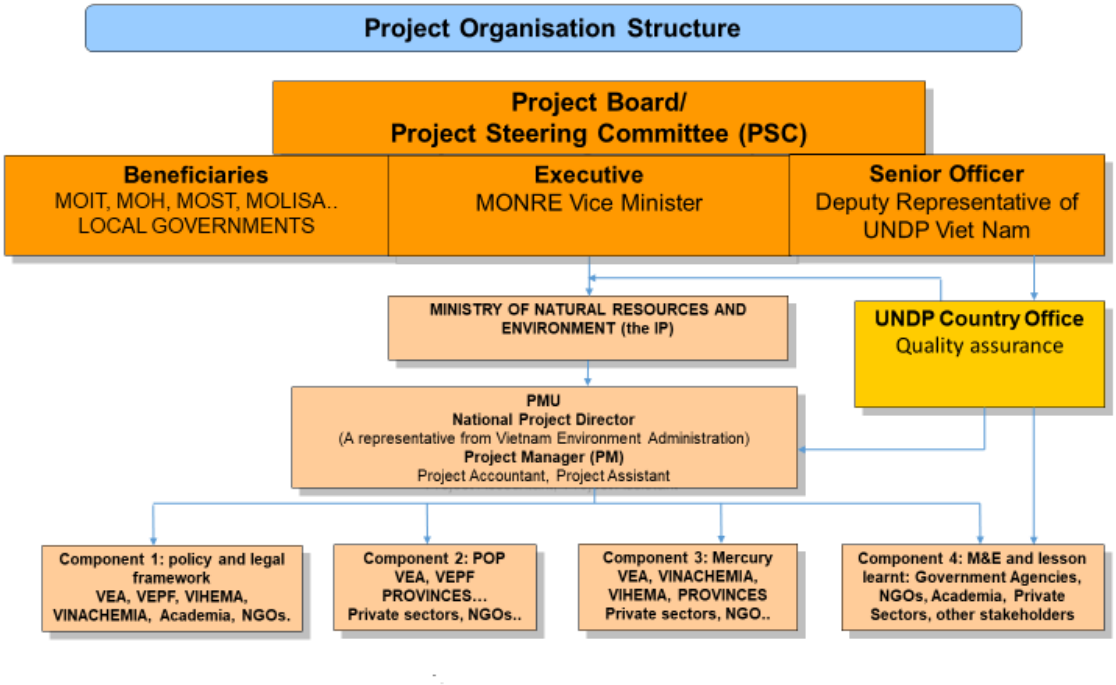
The Project Steering Committee (PSC) will be established and its composition must include the following roles:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible mitigation and management actions to address specific risks;
- Agree on project manager's tolerances as required, within the parameters set by UNDP-GEF, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded;
- Advise on major and minor amendments to the project within the parameters set by UNDP-GEF;
- Ensure coordination between various donor and government-funded projects and programmes;
- Ensure coordination with various government agencies and their participation in project activities;
- Track and monitor co-financing for this project;
- Review the project progress, assess performance, and appraise the Annual Work Plan for the following year;
- Appraise the annual project implementation report, including the quality assessment rating report;
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
- Review combined delivery reports prior to certification by the implementing partner;
- Provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Address project-level grievances;
- Approve the project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses;
- Review the final project report package during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

The Project Steering Committee is responsible for taking corrective action as needed to ensure the project achieves the desired results. In order to ensure UNDP's ultimate accountability, Project Steering Committee decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.

In case consensus cannot be reached within the Board, the UNDP Resident Representative (or their designate) will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.

PSC decisions should be made in accordance with standards that shall ensure management for development results, best value for money, fairness, integrity, transparency, and effective international competition. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager.



Second line of defense:

- Regional Bureau oversees RR and Country Office compliance at portfolio level.
- BPPS NCE RTA oversees technical quality assurance and GEF compliance. BPPS NCE PTA oversees RTA function.
- UNDP GEF Executive Coordinator and Regional Bureau Deputy Director can revoke DOA/cancel/suspend project or provide enhanced oversight.

The UNDP Resident Representative assumes full responsibility and accountability for oversight and quality assurance of this Project and ensures its timely implementation in compliance with the GEF-specific requirements and UNDP's Programme and Operations Policies and Procedures (POPP), its Financial Regulations and Rules and Internal Control Framework. A representative of the UNDP Country Office will assume the assurance role and will present assurance findings to the Project Board, and therefore attends Project Board meetings as a non-voting member.

The composition of the Project Board must include the following roles:

a. *Project Executive*: Is an individual who represents ownership of the project and chairs the Project Board. The Executive is normally the national counterpart for nationally implemented projects. The Project Executive is the Vice-Minister of MONRE.

b. *Beneficiary Representative(s):* Institutions, Individuals or Groups representing the interests of those who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. The Beneficiary representatives are: Ministry of Industry and Trade (MOIT), Ministry of Health (MOH), Ministry of Planning and Investment (MPI), Ministry of Finance (MOF), representatives from targeted industrial sectors as key beneficiaries and representatives from NGOs.

Development Partner(s): Individuals or groups representing the interests of the parties concerned that provide funding and/or technical expertise to the project. The Development Partner(s) is/UNDP.

Project Assurance: UNDP performs the quality assurance and supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures

appropriate project management milestones are managed and completed, and conflict of interest issues are monitored and addressed.

UNDP is accountable to the GEF for the implementation of this project. This includes oversight of project execution to ensure that the project is being carried out in accordance with agreed standards and provisions. UNDP is responsible for delivering GEF project cycle management services comprising project approval and start-up, project supervision and oversight, and project completion and evaluation. UNDP provides a three – tier oversight services involving the UNDP Country Offices and UNDP at regional (UNDP/NCE RTA) and headquarters (UNDP/NCE PTA) levels. Project assurance is totally independent from project execution.

Project Management Unit (PMU): The PMU established by the IP consists of core members including the National Project Director and the Chief Accountant in charge, being a leader and official of Vietnam Environment Administration (VEA), which is a body supporting MONRE directly for environmental area. Also (a) National Project Deputy Director(s), and a National Project Coordinator can be nominated by the IP, and other members from key agencies will be involved in the PMU. A National Project Team consisting of a National Project Manager (NPM), Project Accountant, and Project Assistant-cum-Interpreter is recruited to provide assistance to the PMU on daily implementation and monitoring of the project interventions. The PMU shall perform the tasks:

(i) formulate and submit overall plan and annual plans for the project implementation;
(j) prepare and carry out the actual project implementation;
(k) carry out activities related to bidding, contract management;
(l) budget management, perform financial and asset management of the project;
(m) monitor and assess the implementation of the project activities;
(n) prepare the acceptance and transfer of the results of the project after completion, finish audit works, transfer assets of the project, prepare the terminal report and financial statement of the project, follow regulations on project close-out as per UNDP-GEF procedures;
(o) perform other tasks given by the IP within the framework of the project.

The PMU will be responsible for mobilization of human resources, co-financing, planning, and execution of project activities while providing mechanisms and technical inputs necessary to integrate the results of various activities, will ensure satisfactory performance of the project members and contractors, and will provide official reports to the PSC as needed.

Positions under PMU are as follow (Detailed TORs for all key positions and committees is provided in Annex 7):

a) The **National Project Director (NPD)** is accountable to MONRE and UNDP for the use of project resources and to deliver on outcomes, responsible for overall management and implementation of the project interventions. He/she will head the PMU and will be accountable to MONRE for the use of project resources and to deliver on outcomes. The NPD will manage the implementation of all project activities and will work closely with all partner institutions to link the project with complementary national programs and initiatives. The NPD is accountable to MONRE and the PSC for the quality, timeliness, and effectiveness of the project intervention implementation, as well as for the use of resources. The NPD will be technically supported by contracted national and international consultants and service providers. Recruitment of specialist services for the project will be done by the NPD, in consultation with UNDP and MONRE. The NPD will not be paid by the project but will represent a government in kind contribution to the project.

b) **National Project Deputy Directors (NPDDs):** NPDDs will be assigned responsibility to support the NPD in technical aspects of the project, provide direct guidance to project management unit to achieve project results/targets. The NPDDs will not be paid by the project but will represent a government in-kind contribution to the project.

c) **National Project Coordinators (NPCs):** NPCs will be assigned to be in-charge to support PMU to supervise NPO, ensure the project implementation in accordance with government regulations. The NPC will not be paid by the project but will represent a government in-kind contribution to the project.

d) **National Project Team:** will assist the PMU in the project execution and monitoring on a day-to-day basis. The NPT will function until the finalization of the Terminal Evaluation and corresponding financial completion of the project. The National Project Team consists of:

    a. One National Project Manager (NPM),

    b. One Project Assistant-cum-Interpreter, and

    c. One Project Accountant will be recruited by the NPD. These three main positions will be covered by the Project.

VIII. FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is *USD 33,150,050.* This is financed through a GEF grant of *USD* 4,600,050 administered by UNDP, plus a co-financing contribution from various private and public institutions of 28,550,000 USD

Confirmed Co-financing: The actual realization of project co-financing will be monitored during the *mid-term review* and terminal evaluation process and will be reported to the GEF. Note that all project activities included in the project results framework that will be delivered by co-financing partners (even if the funds do not pass through UNDP accounts) must comply with UNDP's social and environmental standards. Co-financing will be used for the following project activities/outputs:

Co-financing source	Type of Cofinancing	Amount (USD)	Planned Co-financing Activities/Outputs	Risks	Risk mitigation measures
VIETNAM PLASTICS ASSOCIATION (VPA)	In kind	300,000	With 400 members carrying out import, export, production and business activities in the plastic industry/field related to POPs and harmful chemicals, committed to provide co-financing related to infrastructure, equipment investment to environment protection and reducing emission of POPs and other harmful chemicals during project implementation.	Companies under the association not interested in partnership with the project.	Work closely with the VPA at the beginning of the project implementation to select most suitable companies
	Grant	3,200,000			
VIETNAM CORROSION ASSOCIATION (VICORRA)	In kind	200,000	With 62 members carrying out export, import, production and business related to anti-corrosion and protection of metals, committed to provide co-financing related to infrastructure, equipment investment related to the reduction of environmental pollution and emission of POPs and other chemicals during project implementation.	Companies under the association not interested in partnership with the project.	Work closely with the VICORRA at the beginning of the project implementation to select most suitable companies
	Grant	2,800,000			
VINAFOAM VIETNAM CO.LTD	In kind	100,000	In order to reduce use and emission of POPs and harmful chemicals and better enforce regulations on environmental protection, committed to contribute total co-financing of the project through infrastructures and equipment.	Low involvement of /coordination with the company hinders the use of co-financing	The project team will monitor every year co-financing to the project
	Grant	1,900,000			
Viet Environment Protection fund	Loan	5,000,000	Committed to providing Green Credit through concessional lending to investment projects on concentrated wastewater treatment of industrial parks, industrial clusters, and solid waste treatment nationwide (which may include a number of investment projects within the framework of the POP/Project Project). if compliant with loan conditions under current regulations).	Low interest of enterprises to apply for green finance	Project to conduct awareness raising and technical assistance to facilitate the application of enterprises
Vietnam Environment Administration (VEA) – MONRE	Public investment	11,750,000	To support activities of the project and more specifically: to reduce the use and emission of POPs and harmful chemicals and enforce well regulations on environmental protection. Implementing Partner of the project	Change in organizational structure of VEA	Project team and UNDP will monitor co-financing and ensure transition to relevant agency.
Vietnam Environment Administration (VEA) – MONRE	In kind	200,000			
Vietnam Chemicals Agency - MOIT	In-kind	200,000	To support activities of the project and more specifically: To support green growth and reduction in the use and release of POPs / harmful chemicals; Participating to implement the related activities of the project	Low involvement of / coordination with the company hinders the use of co-financing	Project to ensure coordination with all Co-financing partners through the PSC
	Public investment	1,800,000			
Vietnam Health Management Agency - MOH	In-kind	50,000	Reduction in the use and release of POPs / harmful chemicals Participating to implement the related activities of the project	Low involvement of / coordination with the company hinders the use of co-financing	Project to ensure coordination with all Co-financing partners through the PSC
	Public investment	450,000			

UNDP	In-kind	600,000	Accelerating Private Sector Engagement in Climate Resilient and Low Emission Investment Opportunities in Viet Nam's NDC UNDP/MONRE. Reduction of intensive use of mercury contained lamps in agriculture.	No risk as the Project has just started	N/A.
Total		**28,550,000**			

Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board. Should the following deviations occur, the Project Manager/CTA and UNDP Country Office will seek the approval of the BPPS/GEF team to ensure accurate reporting to the GEF:

- a) Budget re-allocations among components in the project budget with amounts involving 10% of the total project grant or more;
- b) Introduction of new budget items that exceed 5% of original GEF allocation.

Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

Project extensions: The UNDP Resident Representative and the UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and only if the following conditions are met: one extension only for a project for a maximum of six months; the project management costs during the extension period must remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the UNDP Country Office oversight costs in excess of the CO's Agency fee specified in the DOA during the extension period must be covered by non-GEF resources.

Audit: The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies. Audit cycle and process must be discussed during the Inception workshop. If the Implementing Partner is an UN Agency, the project will be audited according to that Agencies applicable audit policies.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. All costs incurred to close the project must be included in the project closure budget and reported as final project commitments presented to the Project Board during the final project review. The only costs a project may incur following the final project review are those included in the project closure budget.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. **Operational closure must happen at the end date calculated by the approved duration after the Project Document signature or at the revised operational closure date as approved in the project extension. Any expected activity after the operational date requires project extension approval.**. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

Transfer or disposal of assets: In consultation with the Implementing Partner and other parties of the project, UNDP is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project. In

all cases of transfer, a transfer document must be prepared and kept on file[28]. The transfer should be done before Project Management Unit complete their assignments.

Financial completion (closure): The project will be financially closed when the following conditions have been met: a) the project is operationally completed or has been cancelled; b) the Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

The project will be financially completed **within 6 months of operational closure or after the date of cancellation**. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the BPPS/GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the BPPS/GEF Directorate in New York. No action is required by the UNDP Country Office on the actual refund from UNDP project to the GEF Trustee.

28 See https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=defaul t.

IX. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Atlas Award ID:	00128574	Atlas Project ID:	00122537
Atlas Proposal or Award Title:	Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel		
Atlas Business Unit	VNM10		
Atlas Primary Output Project Title	Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel		
UNDP-GEF PIMS No.	6491		
Implementing Partner	Ministry of Natural Resources and the Environment (MONRE)		

Atlas Activity (GEF Component) as Implementing Agent	**Atlas Implementing Agent**	**Atlas Fund ID**	**Donor Name**	**Atlas Budgetary Account Code[3]**	**ATLAS Budget Account Description[3]**	**Amount Year 1 (USD)**	**Amount Year 2 (USD)**	**Amount Year 3 (USD)**	**Amount Year 4 (USD)**	**Total (USD)**	***See Budget Note:***
Component 1: Promote sustainable production - consumption in key sectors through Ecolabeling, Green Financing and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors.	MONRE	62000	GEF	71200	International consultant	$43,420	$97,890	$54,210	$21,580	**$217,100**	1
	MONRE	62000	GEF	71300	Local Consultant	$54,440	$129,720	$65,640	$22,400	**$272,200**	2
	MONRE	62000	GEF	71800	Contractual Services – Imp Partner	$4,800	$7,200	$7,200	$4,800	**$24,000**	3
	MONRE	62000	GEF	71600	Travel	$14,696	$32,106	$18,690	$7,988	**$73,480**	4
	MONRE	62000	GEF	72100	Contractual Services-companies	$17,200	$43,200	$20,000	$5,600	**$86,000**	5
	MONRE	62000	GEF	74200	Audio Visual&Print Prod Costs	$4,080	$10,080	$4,800	$1,440	**$20,400**	6
	MONRE	62000	GEF	75700	Training, Workshops and Conferences	$4,320	$32,060	$15,670	$0	**$52,050**	7
Total for Component 1						**$142,956**	**$352,256**	**$186,210**	**$63,808**	**$745,230**	
Component 2: Life cycle management of POPs and PTS containing products.	MONRE	62000	GEF	71200	International consultant	$7,670	$111,734	$150,703	$102,343	**$372,450**	8
	MONRE	62000	GEF	71300	Local Consultant	$4,400	$95,700	$128,150	$84,750	**$313,000**	9
	MONRE	62000	GEF	71800	Contractual Services – Imp Partner	$3,000	$3,000	$3,000	$3,000	**$12,000**	10
	MONRE	62000	GEF	71600	Travel	$1,648	$22,422	$28,660	$22,010	**$74,740**	11
	MONRE	62000	GEF	72100	Contractual Services-companies	$0	$355,074	$473,432	$355,074	**$1,183,580**	12
	MONRE	62000	GEF	74200	Audio Visual&Print Prod Costs	$2,400	$23,400	$29,400	$22,800	**$78,000**	13
	MONRE	62000	GEF	75700	Training, Workshops and Conferences	$0	$18,910	$16,390	$0	**$35,300**	14
Total for Component 2						**$19,118**	**$630,240**	**$829,735**	**$589,977**	**$2,069,070**	
Component 3: Mercury lifecycle management of mercury containing products	MONRE	62000	GEF	71200	International consultant	$7,020	$26,910	$25,610	$26,910	**$86,450**	15
	MONRE	62000	GEF	71300	Local Consultant	$13,600	$48,000	$44,000	$44,400	**$150,000**	16
	MONRE	62000	GEF	71800	Contractual Services – Imp Partner	$2,380	$7,140	$7,140	$7,140	**$23,800**	17
	MONRE	62000	GEF	71600	Travel	$1,260	$4,284	$4,284	$4,452	**$14,280**	18
	MONRE	62000	GEF	72100	Contractual Services-companies	$63,000	$303,000	$303,000	$341,000	**$1,010,000**	19
	MONRE	62000	GEF	74200	Audio Visual&Print Prod Costs	$1,200	$3,600	$3,600	$3,600	**$12,000**	20
	MONRE	62000	GEF	75700	Training, Workshops and Conferences	$720	$8,445	$5,205	$7,780	**$22,150**	21
Total for Component 3						**$89,180**	**$401,379**	**$392,839**	**$435,282**	**$1,318,680**	

Atlas Activity (GEF Component) as Implementing Agent	Atlas Implementing Agent	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code[3]	ATLAS Budget Account Description[3]	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)	*See Budget Note:*
Component 4: Monitoring and Evaluation.	UNDP	62000	GEF	71200	International consultant	$0	$26,000	$0	$26,000	**$52,000**	22
	UNDP	62000	GEF	71300	Local Consultant	$0	$12,000	$0	$12,000	**$24,000**	23
	UNDP	62000	GEF	71600	Travel	$0	$6,140	$0	$6,140	**$12,280**	24
	MONRE	62000	GEF	71200	International consultant	$3,086	$3,088	$3,088	$3,088	**$12,350**	25
	MONRE	62000	GEF	71300	Local Consultant	$8,875	$8,875	$8,875	$8,875	**$35,500**	26
	MONRE	62000	GEF	71600	Travel	$420	$420	$420	$420	**$1,680**	27
	MONRE	62000	GEF	75700	Training, Workshops and Conferences	$13,000	$3,000	$3,000	$3,000	**$22,000**	28
					Sub-total M&E	**$25,381**	**$59,523**	**$15,383**	**$59,523**	**$159,810**	
	MONRE	62000	GEF	71200	International consultant	$3,250	$3,250	$3,250	$3,250	**$13,000**	29
	MONRE	62000	GEF	71300	Local Consultant	$9,750	$9,750	$9,750	$9,750	**$39,000**	30
	MONRE	62000	GEF	71600	Travel	$2,585	$2,585	$2,585	$2,585	**$10,340**	31
	MONRE	62000	GEF	72100	Contractual Services-companies	$6,474	$6,472	$6,472	$6,472	**$25,890**	32
					Sub-total KM	**$22,059**	**$22,057**	**$22,057**	**$22,057**	**$88,230**	
Total for Component 4						**$47,440**	**$81,580**	**$37,440**	**$81,580**	**$248,040**	
Project management cost	UNDP	62000	GEF	74100	Professional services	$2,000	$2,000	$2,000	$2,000	**$8,000**	33
	MONRE	62000	GEF	71800	Contractual Services – Imp Partner	$47,988	$47,988	$47,988	$47,988	**$191,952**	34
	MONRE	62000	GEF	72200	Equipment and furniture	$4,500	$1,000	$1,000	$1,000	**$7,500**	35
	MONRE	62000	GEF	72500	Supplies	$1,920	$1,920	$1,920	$1,818	**$7,578**	36
	MONRE	62000	GEF	74500	Miscellaneous Expenses	$1,000	$1,000	$1,000	$1,000	**$4,000**	37
Total for Project Management						**$57,408**	**$53,908**	**$53,908**	**$53,806**	**$219,030**	
PROJECT TOTAL						**$356,102**	**$1,519,363**	**$1,500,132**	**$1,224,453**	**$4,600,050**	

Summary of Funds:

	Amount Year1	Amount Year 2	Amount Year 3	Amount Year 4	Total
GEF	$356,102	$1,519,363	$1,500,132	$1,224,453	4,600,050
Various co-financiers (grant & in-kind)	7,137,500	7,137,500	7,137,500	7,137,500	28,550,000
TOTAL	7,493,602	8,656,863	8,637,632	8,361,953	33,150,050

Budget notes:

Budget Note No.	Budget Account Description	Description of cost items
Component 1: Promote sustainable production - consumption in key sectors through Ecolabeling, Green Financing and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors.		
1	International consultant	International consultants providing technical assistance and expertise on the following topics: (Total: **217,100 USD** = 334 days at rate $650/day – approximately) Regulation and POPs, POP and eco-labeling, POP and EPR, gender specific risk management of POPs and mercury included in the relevant environmental regulation, mercury in healthcare equipment mercury in lighting equipment, mercury disposal technologies, regulation and industrial emission limits, regulation and mercury, POP and mercury waste disposal, green financing, POP and mercury, green financing mechanism in public and private institutions, new POPs in manufacturing and industrial emissions, green financing implementation in public and private institutions, on lending programs for women enterprises, green procurement in public institutions, green procurement in healthcare facilities, green procurement in health facilities, criteria for gender mainstreaming in gender procurement
2	Local Consultant	Local Consultants providing technical assistance and expertise or undertaking the following topic: (Total: **272,200 USD** = 1361 days at rate $200/day – approximately) Regulation and POPs; POP and eco-labeling; POP limits and relevant obligation in EPR; a gender specific section for risk management of POPs and Mercury included in the relevant environmental regulation; mercury in healthcare facilities; alternative to mercury lamps; mercury disposal technologies; alternative to mercury in products; environmental law; waste regulation, disposal technologies and mercury; green financing, POPs and mercury in products; implementation of incentive mechanisms; technical aspects of POPs, mercury and procurement; management of environmental incentives; the criteria for facilitating access to green loan to women enterprises; Green procurement guidelines for MONRE; Green procurement guidelines for healthcare facilities; the implementation of Green procurement in hospitals; criteria to include gender balance at enterprises as a green procurement requirement.
3	Contractual Services - Imp Partner	Contractual Services - Imp Partner to assist on the implementation of green procurement in ministries. (**24,000USD**)
4	Travel	Travel costs (**73,480 USD**) in relation to implementation, monitoring and supervision undertaken by consultant, project management and technical staff to communes for facilitating of project activities. Costs include tickets and DSA - 74 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 220 USD/day. (31,080 USD) - 8 International Travels estimated as one round flight at 2000 usd plus 15 days with a DSA of 220 USD/day for each travel package. (42,400 USD)
5	Contractual Services-companies	Provision of contractual services for below list **(86,000 USD**) - Preparing draft regulations related to POPs and Eco-labelling scheme; review and develop the national technical regulation on thresholds for POPs and Eco-labelling criteria for articles and products for an overall amount of 16,800 USD - Developing and implementation provision for exemption register of POPs as substance or mixtures to be revised to ensure elimination or restriction of POPs once exemption period expire for an overall amount of 11,200 USD - Working on POP and eco-labeling for an overall amount of 10,000 USD - Drafting of secondary law/regulations related to mercury concentration limits in articles and products for an overall amount of 10,000 USD - Updating secondary law related to the treatment and disposal of waste to include provisions on mercury for an overall amount of 10,000 USD - Developing the eligibility criteria and the technical guidances for evaluation of POPs-free, Mercury-free and emission reduction projects and Environmentally friendly production for an overall amount of 16,000 USD - Preparing draft on Green procurement guidelines for MONRE for an overall amount of 12,000 USD
6	Audio Visual&Print Prod Costs	Translation services (**20,400 USD**)
7	Training, Workshops and Conferences	Provision of consultancy services (**52,050 USD**) for the organization of 7 workshops as bellow list: • One small workshop on the draft law on new POPs for an overall amount of 1,800 USD. • One international workshop on the achievements related to regulation on new POPs and EPR for an overall amount of 14,950 USD • Two consultation workshops on gender specific personal protection and risk management measures against exposure to mercury for an overall amount of 3,600 USD. • One international workshop on the launching of the Green Financing mechanism in Vietnam for an overall amount of 14,950 USD • One national level workshop on to introduce the achievement of the piloting related to Green procurement for an overall amount of 14,950 USD. • One consultation workshop on green procurement and women entrepreneurships for an overall amount of 1,800 USD

Budget Note No.	Budget Account Description	Description of cost items
Component 2: Life cycle management of POPs and PTS containing products.		
8	International consultant	International consultants to work on activities related to Component 2 such as: (Total: **372,450 USD** = 573 days at the estimated daily rate 650 USD/day) - technical assistance and sharing knowledge on use of SCCP in industrial processes, POP BFR in industrial processes, PFOS and PFOAs in industrial processes - international experience on sex-disaggregated data on accident at workplace in the manufacturing industry, with focus to exposure to chemicals. - etc.
9	Local Consultant	Local consultants providing technical assistance and expertise (Total: **313,000 USD** = 1565 days at the estimated daily rate 200 USD/day)
10	Contractual Services - Imp Partner	Contractual Services - Imp Partner to provide technical assistance and expertise on Review of the existing literature on new POPs to identify gender-specific issues related to risk-management in the enterprises and specific risk for female resulting from the exposure of POPs (**12,000 USD**)
11	Travel	Travel costs (**74,740 USD**) in relation to implementation, monitoring and supervision undertaken by consultant, project management and technical staff to communes for facilitating of project activities. Costs include tickets and DSA - 77 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 220 USD/day. (32,340 USD) - 8 International Travels estimated as one round flight at 2000 usd plus 15 days with a DSA of 220 USD/day for each travel package. (42,400 USD)
12	Contractual Services-companies	Provision of contractual services (**1,183,580 USD**): - Analytical laboratory to carry out POP analysis in products for overall amount of $50,000 - To supply and install industrial equipment and provide technical assistance on the change of manufacturing process for an overall amount of $527,510 - To supply and install air pollution control systems for an overall amount of $606,070
13	Audio Visual&Print Prod Costs	Translation services (**78,000 USD**)
14	Training, Workshops and Conferences	Provision of consultancy services (**35,300 USD**) for the organization of 5 workshops: • An international kick-off event on the launching of financial mechanism on POPs and mercury free design to enterprises, including design and implementation of APCS (output 2.1.3) for an overall amount of 14,950 USD. • An international event on the selection of industries awarded under the GF or their project on POPs avoidance or release reduction for an overall amount of 14,950 USD • Two consultation workshops on gender specific aspects related to POPs in manufacturing processes and products for an overall amount of 3,600 USD • One consultation workshop among female workers and gender experts in the gap closure between recyclers and manufacturing industry for an overall amount of 1,800 USD.
Component 3: Mercury lifecycle management of mercury containing products		
15	International consultant	International consultants providing technical assistance and expertise on the following topics: (133 days at 650 USD a day, total cost **86,450 USD**) - To assist enterprises on the design of their APCS to reduce POP and mercury - To assist in the selection of enterprises to be awarded for APCS piloting and assist on the implementation of their projects - To provide training on analysis of POP in laboratory and with portable equipment
16	Local Consultant	Local consultants providing technical assistance and expertise (Total: **150,000 USD** = 750 days at the estimated daily rate 200 USD/day)
17	Contractual Services - Imp Partner	Contractual Services - Imp Partner providing technical assistance and expertise on the review of the status of mercury equipment in Vietnam (**23,800 USD**)
18	Travel	Travel costs in relation to implementation, monitoring and supervision undertaken by Consultant, project management and technical staff to communes for facilitating of project activities. Costs include tickets and DSA for 34 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 220 USD/day (**14,280 USD**)

Budget Note No.	Budget Account Description	Description of cost items
19	Contractual Services-companies	Services-companies (**1,010,000 USD**) • to arrange and carry out 4 training events for trainers for representatives of 100 healthcare facilities for an overall amount of 40,000 USD. • to arrange and carry out 4 training for trainers for representatives of 200 offices for an overall amount of 40,000 USD. • to Replace 20,000 fluorescent lamp with LED and package replaced lamp pending disposal for an overall amount of 300,000 USD • to Replace 10,000 mercury thermometer with electronic thermometer and package the replaced thermometers pending disposal for an overall amount of 250,000 USD • to supply, install and demonstrate an equipment for the treatment of mercury containing waste and one to package and transport mercury waste to the disposal facility for an overall amount of 380,000 USD.
20	Audio Visual&Print Prod Costs	Translation services (**12,000 USD**)
21	Training, Workshops and Conferences	Training, Workshops and Conferences (**22,150 USD**) • Two training events on gender specific aspects related to risk prevention in waste management enterprises for an overall amount of 3,600 USD. • Two consultation workshops on gender specific aspects related to the elimination of POPs equipment and products in healthcare facilities and offices. for an overall amount of 3,600 USD. • An international workshop on to summarize work, achievement and lesson learnt on the mercury component of the project for an overall amount of 14,950 USD.
Component 4: Monitoring and Evaluation.		
22	International consultant	The International consultant for independent Mid-term review and terminal evaluation will conduct the external MTR and terminal evaluation of the project and contribute to the project final report (total - 80 days at rate 650USD/days, total cost **52,000 USD**) - undertaking mid term review (40 days) - undertaking terminal evaluation (40 days)
23	Local Consultant	National consultant for MTR and terminal evaluation will support and contribute to the external MTR and terminal evaluation of the project. (120 days at rate 200USD/days, total cost **24,000 USD**) - undertaking mid term review (60 days) - undertaking terminal evaluation (60 days)
24	Travel	Travel costs (**12,280 USD**) in relation to Monitoring and Evaluation undertaken by Individual Consultant: - 4 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 220 USD/day. (1,680 USD) - 2 International Travels estimated as one round flight at 2000 usd plus 15 days with a DSA of 220 USD/day for each travel package (10,600 USD)
25	International consultant	International consultants providing technical assistance, sharing knowledge on project indicator development, project detailed WP … (19 days at 650 USD a day, total cost **12,350 USD**)
26	Local Consultant	Local consultants providing technical assistance and expertise (177.5 days at rate 200 USD/day, total cost **35,500 USD**): - providing national knowledge and assistance for Indicators establishment to facilitate successful project implementation and sound impact assessment - preparation of detailed project workplan and Result Framework established coordination and supervision of Gender Mainstreaming related activities in project implementation
27	Travel	4 National Travels in relation to Monitoring and Evaluation undertaken by Individual Consultant (estimated each as one round flight at 200 USD plus one day accommodation at 220 USD/day. (**1,680 USD**)
28	Training, Workshops and Conferences	Training, Workshops and Conferences (**22,000 USD**) • Inception workshop on the project with participation of other countries representatives involved in Green Chemistry for an overall amount of 10,000 USD • Meetings of the steering committee for an overall amount of USD 12,000 (3,000 per year)
29	International consultant	International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics: - knowledge and preparing materials on POP and mercury related topic to be shared on the website - preparing material and holding presentations on green financing, POP and mercury (20 days at 650 USD a day, total cost **13,000 USD**)

Budget Note No.	Budget Account Description	Description of cost items
30	Local Consultant	Local consultants providing technical assistance and expertise (195 days at rate 200 USD/day, total cost **39,000 USD**) - working on development and creation and implementation of the Knowledge Sharing Platform - sharing knowledge and preparing materials on POP and mercury related topic to be shared on the website preparing and holding presentations on green financing, POP and mercury
31	Travel	Travel costs (**10,340 USD**) in relation to Knowledge management system, Awareness raising and communication events - 12 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 220 USD/day. (5,040 USD) - 01 International Travels estimated as one round flight at 2000 usd plus 15 days with a DSA of 220 USD/day for each travel package (5,300 USD)
32	Contractual Services-companies	A firm to establish a project website, project database, publication and broadcasting of project materials to establish and maintain for an overall amount of **25,890 USD**
Project management cost		
33	Professional services	Professional services to carry out financial audit /Assurance activities of the project (**8,000 USD**)
34	Contractual Services – Imp Partner	Salary cost (**191,952 USD**) for - Project Management staff for 4 years (1,909 USD a month for 48 months, total cost 91,632 USD) - Project accountant for 4 years (1,110 USD a month for 48 months, total cost 53,280 USD) - Project Assistant/procurement for 4 years (980 USD a month for 48 months, total cost 47,040 USD)
35	Equipment and furniture	Consisting of 3 sets of office equipment and Annual facilities and operating cost (**7,500 USD**)
36	Supplies	Office supplies, annual facilities and operating cost for project office which includes: stationeries, office supplies, utilities and other running costs (**7,578 USD**)
37	Miscellaneous Expenses	Misc cost related to stationery, sundry, et. **(4,000 USD**)

X. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Vietnam and UNDP, signed on 21 March 1978. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by the Vietnam Ministry of Natural Resource and the Environment (MONRE) ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XI. RISK MANAGEMENT

1. Consistent with the Article III of the Standard Basic Assistance Agreement (SBAA), the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:
   a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
   b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan.

2. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document.

3. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml.

4. The Implementing Partner acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the Implementing Partner, and each of its responsible parties, their respective sub-recipients and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.
   a) In the implementation of the activities under this Project Document, the Implementing Partner, and each of its sub-parties referred to above, shall comply with the standards of conduct set forth in the Secretary General's Bulletin ST/SGB/2003/13 of 9 October 2003, concerning "Special measures for protection from sexual exploitation and sexual abuse" ("SEA").
   b) Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, the Implementing Partner, and each of its sub-parties referred to above, shall not engage in any form of sexual harassment ("SH"). SH is defined as any unwelcome conduct of a sexual nature that might

reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment.

5. (a) In the performance of the activities under this Project Document, the Implementing Partner shall (with respect to its own activities), and shall require from its sub-parties referred to in paragraph 4 (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, the Implementing Partner will and will require that such sub-parties will take all appropriate measures to:
   (i) Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;
   (ii) Offer employees and associated personnel training on prevention and response to SH and SEA, where the Implementing Partner and its sub-parties referred to in paragraph 4 have not put in place its own training regarding the prevention of SH and SEA, the Implementing Partner and its sub-parties may use the training material available at UNDP;
   (iii) Report and monitor allegations of SH and SEA of which the Implementing Partner and its sub-parties referred to in paragraph 4 have been informed or have otherwise become aware, and status thereof;
   (iv) Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and
   (v) Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. The Implementing Partner shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties referred to in paragraph 4 with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the Implementing Partner shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.

   (b) The Implementing Partner shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the Implementing Partner, and each of its sub-parties referred to in paragraph 4, to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.

6. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

7. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

8. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

9. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

10. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

11. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes in accordance with UNDP's regulations, rules, policies and procedures. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.

12. The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

    Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

13. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail the Implementing Partner's obligations under this Project Document.

    Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

    Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

14. Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.

15. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

16. The Implementing Partner shall ensure that all of its obligations set forth under this section entitled “Risk Management” are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled “Risk Management Standard Clauses” are included, *mutatis mutandis*, in all sub-contracts or sub-agreements entered into further to this Project Document.

XII. MANDATORY ANNEXES

1. GEF Budget Template (available from BPPS NCE-VF)
2. Project Map and geospatial coordinates of the project area
3. Multiyear Workplan
4. Monitoring Plan
5. Social and Environmental Screening Procedure (SESP)
6. UNDP Atlas Risk Register
7. Overview of technical consultancies/subcontracts
8. Stakeholder Engagement Plan
9. Gender Analysis and Gender Action Plan
10. Procurement Plan – for first year of implementation especially
11. Letter of financial commitments
12. GEF Core indicators
13. GEF Taxonomy
14. Partners Capacity Assessment Tool and HACT assessment
15. UNDP Project Quality Assurance Report (to be completed in UNDP online corporate planning system)

Other Annexes

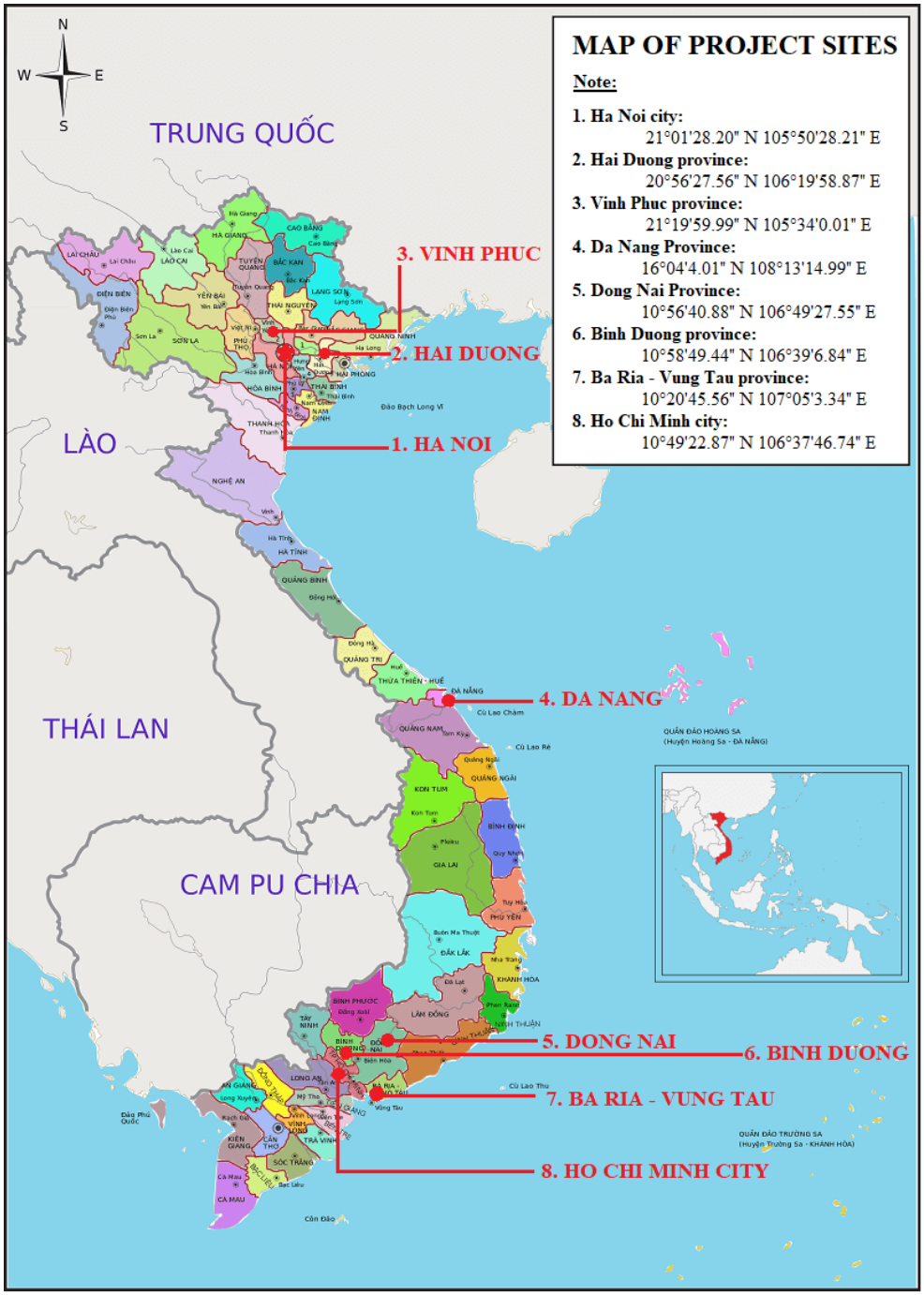
16. Green Financing in Vietnam
17. Cost of air pollution treatment technology for small enterprises in Vietnam
18. Preliminary list of industries for the survey
19. Tentative list of hospitals for the demonstration of non-mercury thermometers.

Annex 1: GEF Budget Template

To be provided by MPSU (NCE HQ) after TBWP clearance.

Annex 2: Project map and Geospatial Coordinates of project sites

Any maps included in this project document must conform to maps accepted by the UN Cartographic Unit (see https://www.un.org/Depts/Cartographic/english/htmain.htm)



These eight project sites (as shown in in above map) have been screened by the PPG team and Vietnam Environment Administration (overall area of influence) as these are existing industrial zones or industrial parks and are the areas short listed for the project interventions (in which companies' selection will take place during implementation).

These eight (8) locations have significant potential related to the use of POPs and mercury in industrial processes. During the implementation phase, the demonstration companies will be identified and, by each location, will be possible to discriminate the interventions promoted by the project.

Annex 3: Multi Year Work Plan

			Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1: Promote sustainable production - consumption in key sectors through Ecolabeling, Green Financing and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors.	1.1 Environmental regulation upgraded to include new POPs; Ecolabel and related policies on POPs and mercury lifecycle management developed and implemented. (Note: original PIF's Outcome 1.1 and 1.2 merged together to fulfil UNDP template requirements)	Output 1.1.1 Review, amendment of existing, or creation of new legislation related to POPs …																
		Output 1.1.2 Roadmap and sectorial plans developed for replacement of mercury thermometers and mercury containing lamps established																
		Output 1.1.3. Review of the existing legislation related to mercury																
	Outcome 1.2. Development of a Green Financing Mechanism, to sustain the shifting of enterprises toward a non-POPs and a non-Mercury manufacturing	Output 1.2.1 Green Financing Mechanism designed, funded and implemented																
		Output 1.2.2 Green Procurement scheme designed and implemented																
Component 2: Life cycle management of POPs and PTS containing products.	Outcome 2.1 Sustainable manufacture and design of plastic, polymers, paint, metal finishing and other products	2.1.1. Analysis of the manufacturing sectors for which the use of new POPs has been recently confirmed																
		2.1.2 Alternative product design to prevent the use of hazardous chemicals																

			Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	improved to prevent the use of POP and the release of POP in the environment.	2.1.3 Design and implementation of modern Air Pollution Control Systems																
	Outcome 2.2 Closure of the gap between recyclers and industry to sustain circular economy and to prevent the contamination of recyclable materials.	2.2.1 Interaction, technical exchange and commercial agreement between recyclers and industry																
Component 3: Mercury lifecycle management of mercury containing products	Outcome 3.1 Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management.	3.1.1. Risk management, technical guidance and training materials developed																
		3.1.2. Capacities of institutions are strengthened to eliminate use of mercury containing products																
		3.1.3 Technologies for the recycling of mercury containing equipment with segregation and storage of mercury established																
Component 4. Monitoring and Evaluation	Outcome 4.1 Project management team established, lesson learnt and knowledge generated by the project properly	4.1.1 Project inception and inception report carried out																
		4.1.2 Project steering committee and project management unit established																

			Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	shared and communicated.	4.1.3 Knowledge management system including project website established																
	Outcome 4.2 Project monitoring, evaluation and audit carried out in compliance with GEF, UNDP and GoV standards	4.2.1. Project and its activities monitored and evaluated on a periodic basis in line with GEF, UNDP and government requirements.																
		4.2.2 Indicators established to facilitate successful project implementation and sound impact assessment.																

Annex 4: Monitoring Plan

This Monitoring Plan and the M&E Plan and Budget in Section VI of this project document will both guide monitoring and evaluation at the project level for the duration of project implementation.

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods[29]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
Project objective from the results framework	**Indicator 1** Number of people (F/M) participating in training and awareness raising activities, benefitting from green financial incentives, or from project-related job opportunities.	2,000/1,500	An average of 10 staff for each firm benefitting from incentive, assuming at least 20 firms; 10 training of trainers involving at least 10 trainees and a total audience of not less than 1000 medical staff; an average proportion F/M of 50/50	The data for enterprises will be gathered through the application process and dedicated surveys. Pre and post training tests will be carried out. Training report and attendance sheet with test scores	Annually and after every event. Reported in DO tab of the GEF PIR	Project Management Unit	workshop report National statistics report	Risk: training participant and firm applying to incentives below the expectations. Assumptions: target value are reasonable estimate: 20 firms successfully applying to incentives and 10 healthcare facilities training can be achieved within project timeline with a good planning.
	Indicator 2 Number of people (F/M) benefitting from reduced exposure to mercury, POPs or U-POPs .	800,000/800,000	See detailed explanation in Global Environmental Benefits chapter	Counting non-mercury equipment purchased and replaced; analysis of projects submitted by enterprises and verification of their performance through sampling and analysis or mass-balance estimation, exposure models to calculate number of persons impacted.	Yearly	Project Management Unit, Consultant / Experts--	Technical reports, analytical reports, proof of purchase of non-mercury equipment, dispersion modelling	The reduction of POPs and mercury usage and release are reasonable, however there is an obvious risk that in case the expected reduction won't be achieved, this will also result in reduced benefit for the population. The assumption of people exposure (see GEB chapter for details) are preliminary and will be better detailed in the course of project implementation.

[29] Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods[29]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	Indicator 3 Direct or indirect reduction of new POPs:	35 tons	See detailed explanation in Global Environmental Benefits chapter	Mass balance analysis of manufacturing processes, proof of purchase of chemicals,	Each 6 months after the first 2 years	Project Management Unit, Consultant / Experts--	Technical reports, analytical reports, enterprise's applications for incentives	The reduction of POPs is reasonable but would require a significant effort from enterprises in providing accurate and transparent information and committing for the phase out of POPs. The risk of data inaccuracy or incompleteness does exist but it is assumed that with the proper assistance and communication this can be partially addressed.
	Indicator 4 Mercury releases reduced.	648 kg of mercury emission avoided, 10,000 thermometers and 20,000 mercury lamps replaced	See detailed explanation in Global Environmental Benefits chapter	Proof of purchase of non-mercury equipment + reports providing certification of proper replacement and disposal. Design and testing results of APCS installed.	Each 6 months after the first 2 years	Project Management Unit, Consultants / Experts	Technical reports, analytical reports, random surveys,	It is assumed that the number of thermometers and mercury lamp can be achieved with a moderate but well-planned effort. There are no significant risks on this target. Proper management of the replaced equipment has to be ensured.
	Indicator 5 U-POPs releases reduced.	2gTeq/yr	See detailed explanation in Global Environmental Benefits chapter	Design and testing results of APCS installed.	Each 6 months after the first 2 years	Project Management Unit, Consultants / Experts	Technical reports, analytical reports, random surveys,	The APCS technology for reducing U-POPs from industrial emission is readily available therefore it is assumed there would be no technical difficulties in achieving this target. The risk associated with the cost of the technology has to be monitored during project implementation as this could affect the amount of co-financing needed from the side of enterprises.

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods[29]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
Project Outcome 1	Indicator 6 number of environmental regulation upgraded / enacted.	2 New regulations	One environmental regulation concerning new POPs drafted an enacted; One environmental regulation one environmental regulation concerning ecolabel drafted and enacted	Meeting minutes, technical and legal report on the new regulations proposed, official governmental acts including publications on national bulletins	yearly	Project Management Unit, Consultants / Experts	Meeting and workshop minutes, technical reports	In previous projects Vietnam has been successful in endorsing environmental regulations within the project duration. The targets are in line with the national policies therefore it is assumed that these will be achieved. The risk of late approval of the regulation (after project closure) however does exist but would not preclude the project to achieve its technical targets.
	Indicator 7 Number of policies on POPs and mercury lifecycle drafted and enacted	2 Policies / Roadmaps	One policy on the lifecycle of POPs containing products, one policy on the lifecycle management of mercury containing products drafted an enacted.	Meeting minutes, technical and legal report on the new policies proposed, official governmental acts including publications on national bulletins	Yearly	Project Management Unit, Consultants / Experts	Meeting and workshop minutes, technical reports	The targets are in line with the national policies therefore it is assumed that these will be achieved, The risk of late approval of the policies is minimal as the approval of a policy/roadmap is an internal ministerial act.
Project Outcome 2	**Indicator 8** Size of green financing mechanism in place	5,000,000	One green financing mechanism with a fund size of 5,000,000 USD fully subscribed	The financial reports of the financing institution will be examined with reference to budget interest rate and eligibility criteria. Applications submitted and approved will be also verified	Each six months after the first year	Project Management Unit, Financing institutions Consultants / Experts	Financial report of the financing institutions. Technical and financial sections of the approved applications	It is assumed that the financing benefits, the new regulatory framework and the assistance provided by the project. will be effective in assisting and motivating enterprises to apply for incentives. The risk of financing budget not completely subscribed will be minimized through continuous communication of the technical and financial benefits and technical assistance to the applicants.

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods[29]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	Indicator 9 Number of ecolabel system and green procurement in place	One ecolabel system One green procurement system	One Ecolabel system including requirements for POPs and mercury content developed and approved for at least 10 product categories, with at least 5 industries certified. One Green procurement policy developed, approved and implemented with at least 100,000 USD of green products purchased.	Meeting minutes, technical and legal report on the new ecolabel and green procurement system proposed, official governmental acts including publications on national bulletins	Yearly	Project Management Unit, Financing institutions Consultants / Experts	Meeting and workshop minutes, draft and final version of the ecolabel and green procurement rules,	Vietnam is already familiar with ecolabel schemes therefore it is assumed that lesson learnt from existing schemes could facilitate the creation of a new scheme which include POPs. The green procurement scheme will be initially piloted through implementation in DONREs and MONRE. Involvement of stakeholders in the designing of such schemes will minimize the risk of their reduced effectiveness or competitiveness
Project Outcome 3	Indicator 10 Number of manufacturing sectors joining the knowledge network	One knowledge network joined by at least 2 sectors	A knowledge network established among manufacturing sectors with at least 2 sectors to be selected based on the result of a survey.	Survey report aimed at the selection of sectors to join the knowledge network will be established. Workshop and meeting minutes will be assessed. Materials shared through the knowledge network and web-based tools will be verified and assessed.	Yearly	Project Management Unit, Communication experts, UNDP CO	Technical report, meeting and workshop minutes, web-based materials	There are no significant risks associated to the achievement of this indicator. It is assumed that involvement of stakeholders as well as national and international experts will ensure good quality of this outcome

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods[29]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	Indicator 11 Number of air pollution control systems designed and installed at industrial facilities.	$1x10^6$ Nm^3/h capacity of installed system	Air pollution control systems designed and installed for an overall amount of $1×10^6$ Nm^3/h of flue gas treated.	Design and testing results of APCS installed.	Each 6 months after the first 2 years	Project Management Unit, Consultants / Experts	Technical reports, analytical reports, site surveys.	The APCS technology for reducing U-POPs and mercury from industrial emission is readily available therefore it is assumed there would be no technical difficulties in achieving this target. The risk associated with the cost of the technology has to be monitored during project implementation as this could affect the amount of co-financing needed from the side of enterprises.
Project Outcome 4	**Indicator 12** Number of implementations of reuse, up-cycling, recycling established	Total of 4 full size implementations (MAYBE THIS TARGET IS TOO LOW TO ACHIEVE THE DESIRED TARGET)	At least four implementation carried out for reuse, upcycling, recycling of products or materials.	Implementation plans will be assessed. Survey will be carried out at implementation sites. Mass balance, operational, technical and analytical report to verify the amount of POP/mercury prevented will be carried out.	Yearly	Project Management Unit, Consultants / Experts	Technical reports, analytical reports, site surveys.	It is assumed that through technical support and green financing the number of full size implementations will exceed the target. The risk of selecting low-impact cases has to be prevented through a careful examination of the application with the support of national and international experts.
	Indicator 13 Number of take back schemes designed and piloted for product or product components.	One take back scheme	At least one take back scheme demonstrated entailing prevention of POPs or mercury in the manufacturing chain or their release in the environment	The implementation plan of take back schemes will be assessed including mass balance of POP and Mercury. site surveys will be carried out	Yearly	Project Management Unit, Consultants / Experts	Technical reports, analytical reports, site surveys.	Demonstration of a new take-back scheme is an innovative activity to prevent POPs in the supply chain. The risk of implementing a low-impact scheme will be prevented through extended exchange with relevant enterprises and other stakeholders. Principles for designing and selecting a take

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods[29]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
								back scheme to be established at an early stage.
Project Outcome 5	**Indicator 14** Number of medical devices containing mercury replaced with non-mercury devices	10,000	At least 10,000 Mercury containing thermometers replaced with non- Mercury thermometers	The assessment will entail proof of purchase, evidence of replacement, evidence of environmentally sound disposal	Each six months after the first 2 years	Project Management Unit, Consultants / Experts	The assessment will entail proof of purchase, evidence of replacement, evidence of environmentally sound disposal	It is assumed that the procurement of the equipment will be completed without major issues. The risk related to the missed replacement or improper disposal of the replaced devices, has to prevented by ensuring that the beneficiaries are committed to replace mercury devices and to cooperate with the project on the ESM disposal of the EOL mercury equipment.
	Indicator 15 Number of Mercury containing lamps replaced with no Mercury lamps	20,000 led lamps	At least 20,000 Mercury containing lamps replaced with non-Mercury lamps	The assessment will entail proof of purchase, evidence of replacement, evidence of environmentally sound disposal	Each six months after the first 2 years	Project Management Unit, Consultants / Experts	The assessment will entail proof of purchase, evidence of replacement, evidence of environmentally sound disposal	It is assumed that the procurement of the non mercury lamps will be completed without major issues. The risk related to the missed replacement or improper disposal of the replaced devices, has to prevented by ensuring that the beneficiaries are committed to replace mercury lamps and to coordinate with the project on the ESM disposal of the EOL mercury equipment.
Project Outcome 6	**Indicator 16** Number of technical guidance made available and training on mercury performed.	1 set of technical guidance 10 ToT delivered	At least 1 set of technical guidance and 10 training package delivered in Training of Trainers events for healthcare facilities involving at 10 ToT events with 20 trainers trained, and	Participation in workshops, verification of the technical guidance	Yearly	Project Management Unit, Consultants / Experts	Training materials, pre and post training tests, training reports, training attendance sheets, copy of	UNDP has a significant experience in carrying out training on mercury aspects, therefore it is assumed that the target will be achieved without major issues. The risk of low quality training is also prevented through the

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods[29]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
			subsequently at least 1000 trainees from 10 facilities.				training certificates	technical assistance provided by UNDP sector experts.
	Indicator 17 Number of facilities for the recycling and disposal of Mercury containing devices and waste established	One facility	At least one facility for the storage and disposal of mercury containing devices established	Assessment of the Preliminary and final design of the facility. Participation in workshops and meeting. Technical reports and site survey minutes	Yearly	Project Management Unit, Consultants / Experts	Preliminary and final design of the facility. Bidding documents Site Survey reports	The technologies for the safe storage of mercury and the recycling of mercury containing devices are commercially available therefore no procurement risk is expected. Risk of delay due to potential NIMBY effect to be prevented by a proper awareness raising campaign
Project Outcome 7	**Indicator 18** Number of project staff appointed (F/M)	PMU Staff PSC members NC IC	Project management institutions established with an equal F/M ratio.	Verification of TORs, contracts and compliance with gender balance criteria	At inception and then Yearly	UNDP CO GM expert Evaluation experts Implementing Partner	TORs, contracts, GM criteria	Different staff may be required at different stage of project implementation. Risk of imbalanced gender selection of staff to be prevented by involving GM experts in the selection.
	Indicator 19 Number of lessons and best practices learn and shared by the project management team	At least 3 lesson learnt and 3 best practices identified and shared.	Both the Project Steering Committee and the Project Management Unit to report on the experience gathered for each of the 3 project technical components in international workshop including gender mainstreaming aspects.	PIRs, PPRs, technical reports, workshop and meeting minutes, interviews.	Mid term and end of project	Project Management Unit, Project Steering Committee, UNDP CO, technical and evaluation experts	PIRs, PPRs, technical reports, workshop and meeting minutes, interviews.	No specific risk envisaged for the achievement of this target. It is assumed that the involvement of project technical and management staff will allow for the identification of meaningful examples
Project Outcome 8	**Indicator 20** Number of evaluation and audit completed and properly	1+1+4	One mid term review, one terminal evaluation completed.	Assessment of the MTR and TER to be integrated in the management responses. UNDP	Yearly, mid term and end of project	UNDP HQ Project Steering committee	MTR TER Audit reports	No specific risk envisaged for achieving this task, due to the familiarity of the implementing partner and UNDP CO on this procedure. It is assumed that the

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods[29]	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	reflected in project management.		One financial audit carried out yearly	evaluation unit to assess quality of MTR and TER.				selection of experienced auditors and evaluators will allow for the preparation of high quality reports
	Indicator 21 Number of management report approved.	1 IR 4 PIRs 4 PPRs 4 PW 1 TPR	At least one PIR per year drafted and approved. Annual Project reports drafted and approved Annual Project Workplan drafted and approved Final project report drafted and approved	All the management report to be stored in an online project repository for the continuous consultation by technical and management staff. All the technical report to be left open to comments for at least 2 months.11	At inception Yearly At completion	Project Management Unit UNDP CO	Inception report Project Implementation reports Project Progress Reports Project Workplans Project Terminal reports	No specific risk envisaged for achieving this task, due to the familiarity of the implementing partner and UNDP CO on this procedure. To ensure high quality of the deliverable, both management staff and technical expert need to be involved in the drafting and review of the reports.
Add indicators included in gender action plan, stakeholder engagement plan or other monitoring plans as needed.								

Annex 5: UNDP Social and Environmental Screening Procedure (SESP)

Attached as a separate file

Annex 6: UNDP Risk Register

Risk Description	*Impact and Likelihood (1-5)*	*Significance (Low, Moderate Substantial, High)*	*Risk Category*	*Description of assessment and management measures for risks rated as Moderate, Substantial or High*	*Risk owner*
Risk 1: Duty-bearers, and other relevant stakeholders do not have the capacity to meet their obligations in the project	I = 4 L = 2	**Moderate**	Social Human Rights: P4, P5	**This risk is being addressed/mitigated by Project Design.** **(Components 1 and 4)** (c) The project will deploy training to ensure that the relevant Governmental Officials are assisted. The training will focus on the improvement of knowledge, capacities and practical actions to enforce the enhanced regulatory framework related to green supply chains of chemicals industries, Ecolabel and environmentally sound management principles of Mercury and Mercury/POPs emissions control. The training will also allow the Officials to understand their new extended responsibilities arising from the improved institutional and regulatory frameworks being developed by the project in terms of new legislation, guidelines and mandatory standards. (d) & (c) Consultation meetings with Banks and financial institutions will held during the development of the project document to engage their participation. Training, capacity building, communication will be carried out. The project will support these stakeholders to develop the eligibility criteria for the application to the Green Financing mechanism and demonstration activities under Components 2 and 3 will provide practical experinces in the application of the Financing Mechanism. • (e) During design phase, initial agreement was achieve with the Commitment has been already achieved with *the Vietnam Environmental Protection Fund (VEPF) and the Banks BIDV, SacomBank* for applications of resources to the Green Financing Mechanism. GEF grant will provide seed funding in the form of micro-grants to faciliate scale up and the Co-finance Letters will be attached to the Project submission and the realizaiton of the co-finance will be monitored under the Component 4 in several strages of the Prioject cycle (including, but not limited to: Annual PIRs, Mid-term review and Terminal Evaluation).	MONRE /MOIT
Risk 2: Adverse impacts on workers in the recycling sector who could not be included in the project activities	I = 4 L = 2	**Moderate**	Health and Environment Human Rights: P5 Accountability: P13, P14	**This risk is being addressed/mitigated by Project Design.** **(Components 1 and 4)** (e) The project will deploy training to ensure that the relevant Governmental Officials are assisted. The training will focus on the improvement of knowledge, capacities and practical actions to enforce the enhanced regulatory framework related to green supply chains of chemicals industries, Ecolabel and environmentally sound management principles of Mercury and Mercury/POPs emissions control. The	MONRE

			Standard 7: Labour and Working Conditions: 7.5	training will also allow the Officials to understand their new extended responsibilities arising from the improved institutional and regulatory frameworks being developed by the project in terms of new legislation, guidelines and mandatory standards. (f) & (c) Consultation meetings with Banks and financial institutions will held during the development of the project document to engage their participation. Training, capacity building, communication will be carried out. The project will support these stakeholders to develop the eligibility criteria for the application to the Green Financing mechanism and demonstration activities under Components 2 and 3 will provide practical experinces in the application of the Financing Mechanism. • (f) During design phase, initial agreement was achieve with the Commitment has been already achieved with *the Vietnam Environmental Protection Fund (VEPF) and the Banks BIDV, SacomBank* for applications of resources to the Green Financing Mechanism. GEF grant will provide seed funding in the form of micro-grants to faciliate scale up and the Co-finance Letters will be attached to the Project submission and the realizaiton of the co-finance will be monitored under the Component 4 in several strages of the Prioject cycle (including, but not limited to: Annual PIRs, Mid-term review and Terminal Evaluation). -	
Risk 3: Adverse economic impacts to small and medium sized industries and their workers due to banning of imports or restricting the use of certain chemicals used as baseline raw materials	I = 3 L = 2	**Moderate**	**Environmental** Accountability: P13, P14 - Standard 5; 5.2. Standard 8: Pollution Prevention and Resource Efficiency: 8.1; 8.2; and 8.3	**This risk is being mitigated by Project Design. (Components 1 and 2)** • Under the Component 1, the Green Financial Mechanism aims to mitigate the financial impact of the Convention´s implementation by mitigating the financial burden for the enterprises compared to the baseline. - A roadmap for banning of imports or restricting the use of certain chemicals will be introduced through a clearly identified timeline, which is agreed by stakeholders. • • Under the Component 2 (Outcome 2.1). The project will engage all stakeholders to identify win-win design or engineering solutions aimed at reducing the need for chemicals whose uses will be restricted and finding affordable and effective alternatives for chemicals that will be banned; - A specific category of “eco-labelled products” will be identified so the design, manufacturing and placing on the market of products fulfilling the labelling requirements will be eligible under the green-financing mechanism that will be developed under the project. - The Project will also engage with the government and seek additional support or conversion financing can be made available to such companies. • During project implementation, Risk Assessment will be undertaken for the pollution control technologies application and the new production BAT/BEP used taking into consideration their impacts on workers. The industries will consult with trade unions or other workplace representatives to avoid or reduce redundancies, the method of selection and mitigating the effects, integrating outcomes into the final restructuring plan. This includes potentially training qualified existing staff on other roles or skills that may be needed at the industry. Where no viable alternatives are identified,	MONRE / MOIT

				a **Restructuring Plan** will be developed to reduce and mitigate adverse impacts of retrenchment on workers, including the following: - Ensuring that any collective dismissals are carried out in accordance with the provisions of national law and applicable collective agreements. - Ensuring that the criteria for selection for redundancy are objective, fair and transparent and aim to be gender-neutral; and implement a procedure which provides individuals with the right to challenge their selection. - Ensuring that all outstanding back pay, social security benefits and pension contributions and benefits are paid to those affected by retrenchment in a timely manner. - In the case of large-scale redundancies, provide UNDP with a copy of the restructuring plan, ahead of any dismissals.	
Risk 4: Inadequate participation of women in consultations, policy decision making and design of modalities for capacity building in uptake of BAT/BEP in the targeted industries	I = 4 L = 2	**Moderate**	**Social** Gender Equality and Women's Empowerment; P.10,	**This risk is being managed by a Targeted Plan developed and attached to the Project Document.** The Gender Action Plan (GAP) is addressing potential risks and included measures to mainstream gender in all project components, with specific focus on encouraging women representation in the following: • In line with the Risk Mitigation Strategy associated in Risk #2, women will be encouraged in the engagement with the project through their participation in the marketplace roundtables to prevent that the opportunities generated by the project will translate in the consolidation of existing situations of inequality, discrimination or unlawfulness. • Adequate inclusion of women employees in the project decision making process and the BAT/BEP selection processes; • Training and supporting more women employees to management positions including being middle and senior managers; • Supporting all the women and men who could potentially lose their jobs to be appropriately relocated; • Making sure the project results dissemination materials be gender sensitive; • The project publicity targets proportionally toward relevant women and girls; and - Collection of sex-disaggregated data wherever relevant.	MONRE
Risk 5: Risk of accidental release of hazardous substances during handling, treatment, transport between facilities, storage, disposal or testing of substances and wastes contained-chemicals.	I = 4 L = 2	**Moderate**	**Related to risks:** Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management; 1.1, 1.7, 1.14 Standard 3: Community Health, Safety	**This risk is being addressed/mitigated:** - **Partially by Project design** - **Partially by ESMP and additional Target Plans** <u>For the Project Contractors/Service providers</u>: the project will engage a number of service providers/contractors to support the operationalization of several activities. These will be engaged using procurement (tendering) processes against clear Terms of Reference and Technical Specifications as approved in the Procurement Plan. (p) Under Outcome 3.1, the project will ensure that qualified waste management companies will be recruited through public tendering process. Clear criteria will be set to ensure strong track records and compliance with relevant National and International regulations and standards for handling, treatment and disposal of hazardous waste.	MONRE

			and Security: 3.1, 3.4, 3.5 Standard 7: Labor and Working Conditions; 7.6 Standard 8: Pollution Prevention and Resource Efficiency; 8.1, 8.2 and 8.3	(q) The Contractors in charge of transportation, storage and handling of hazardous chemical must comply with Environmental Protection Law and Circular 36/2015/TT-BTNMT on hazardous waste management (applying for Environmental License and Workers certification and training). (r) Targeted **Spill Prevention and Management Plan** will be developed and implemented at sites for safe handling and disposal of chemicals and mercury-containing obsolete devices and safely cleanup of accidental mercury releases. For the Industries that will participate in BAT/BEP Demonstration Activities: The project will provide technical assistance and oversee the deployment of technologies for the recycling of mercury containing equipment with segregation and storage of mercury. The Industries/Companies will implement such technologies through using their co-finance (not part of Project Budget. (s) Eligible Industries and Enterprises were pre-screened during design phase. While final selection and engagement (including due diligence and contractual arrangements) will be carried out during implementation phase, it is confirmed that all eligible companies are located in industrial (legal) areas with no Heritage/Cultural Sites in these areas, therefore, Standard 4 is not triggered. (t) **Environmental and Social Impact Assessment (ESIA)** for each selected Industry/Company will be developed so to assess the potential social and environmental impacts in their area of influence. A **scoped Environmental and Social Management Plans (ESMP)** will be prepared to avoid and monitor any potential risk related to the demonstration activities co-financed by the Companies and that will be subject of oversight by the Project. (u) Targeted **Spill Prevention and Management Plan** will be developed and implemented at demonstration sites for safe handling and disposal of chemicals and mercury-containing obsolete devices and safely clean up of accidental mercury releases. • For the Company(ies) that will operate mercury treatment facilities for fluorescent lightbulbs and mercury amalgam. The project will provide technical assistance for the operationalization and waste management strategy for the mercury treatment facilities, while capital investment for the establishment of the facility will be undertaken by the partner company. No new land will be availed for this project, existing baseline structured will be used. (v) Eligible Industries and Enterprises were pre-screened during design phase. While final selection and engagement (including due diligence and contractual arrangements) will be carried out during implementation phase, it is confirmed that all eligible companies are located in industrial (legal) areas with no Heritage/Cultural Sites in these areas, therefore, Standard 4 is not triggered. (w) **Environmental and Social Impact Assessment (ESIA)** for each selected Industry/Company will be developed so to assess the potential social and environmental impacts in their area of influence. A **scoped Environmental and Social Management Plans (ESMP)** will be prepared to avoid and monitor any potential risk related to the demonstration activities co-financed by the Companies and that will be subject of oversight by the Project. (f) Targeted **Spill Prevention and Management Plan** will be developed and implemented at demonstration sites for safe handling and disposal of chemicals and mercury-containing obsolete devices and safely clean up of accidental mercury releases.	

				(g) A **Risk Management Strategy** inclusive of technical guidance and training materials for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury lamps and medical devices, will be developed; -	
Risk 6: Risk of flooding at mercury treatment and storage facilities	I = 4 L = 2	**Moderate**	**Health** Standard 2: Climate Change and Disaster Risks, 2.2	**This risk is being addressed/mitigated:** - **Partially by Project design** - **Partially by Target Plan** Eligible Location and Company were pre-screened during design phase. While final selection and engagement (including due diligence and contractual arrangements) will be carried out during implementation phase, it is confirmed that the company is located in industrial (legal) area with no Heritage/Cultural Sites in these areas, therefore, Standard 4 is not triggered. An **Environmental and Social Impact Assessment (ESIA)** for the selected Industry/Company will be developed so to assess the potential social and environmental impacts in their area of influence. A **scoped Environmental and Social Management Plans (ESMP)** will be prepared to avoid and monitor any potential risk related to the interim storage location sponsored by the Project. No new land will be availed for this project, existing baseline structured will be used. Therefore, Standard 5 is not triggered. The **ESIA** will also ensure that the interim storage facilities (Output 2.1.1, Output 3.1.1, Output 3.1.3) are referring to the Minamata Convention's Guidelines on the environmentally sound interim storage of mercury by confirming the following: - Site is appropriate and abides by local zoning requirements, Climate Risk assessment of the location will be carried out to consider the risk of flooding, and also incorporating flooding mitigation measures. - Facility is designed to facilitate the safe handling of containers. - Indoor air is vented outside, and where levels of mercury call for venting via activated carbon or other mercury capture systems, system is installed and operational. - Site is equipped with a fire protection system. - Emergency response plan in place and local fire department, where available, is sufficiently informed, trained, equipped and otherwise prepared to safely handle any fires at the facility. - Facility is constructed of non-combustible materials and non-combustible materials should be used for pallets, storage racks and other interior furnishings. - A drainage and collection system for discharged water exists enabling mercury monitoring from the site. - Floors of storage facilities are covered with mercury-resistant materials and have no cracks. - The facility is clearly marked with warning signs and secured to avoid theft and unauthorized access.	MOH / DOH MONRE

				Should any of these requirements not be met, then Project will support their introduction, including retrofitting of the storage facility. -	
Risk 7: Health and safety risk for the workers involved in the activities of handling, treatment, transport between facilities, storage, recycling, disposal or testing of substances and wastes contained-chemicals	I = 4 L = 1	**Moderate**	**Health** - Standard 3: Community Health, Safety and Security, - Standard 7: Labour and Working Conditions,	**This risk is being addressed/mitigated by Project Design.** **(Components 2, 3 and 4)** **This risk will ne mitigated by additional ESIA/ESMP.** The project will only engage with formally established and licensed enterprises, and will not carry out new construction. Prior to engage with any Company (Service Provider, Contract and/or Co-financier) the project will carry the appropriate **ESIAs** and prepare the **ESMP** in line with Risk Mitigation Strategies 2, 5 and 6 which will also consider that occupational health and safety measures are applied (through an **Occupational Risk Assessment**) <u>For activities related to handling, treatment, transport between facilities, storage, disposal or testing of wastes</u> (j) Implement modern Air Pollution Control Systems to prevent the release of mercury and U-POPs suitable also for small enterprises; (Output 2.1.3) (k) Implement Relevant international guidelines and BEP on operational safety procedures for hazardous chemicals waste handling, transport, storage and disposal in accordance with international practice will be adopted during the first and second year of implementation (Output 3.1.1); (l) Develop and deploy training program involves provision of the necessary operational and safeguards exercise to the staff that are to be directly involved in the work on the treatment and storage area, and will be delivered in advance of starting actual site work and be updated throughout the period of work on the site as required. The scope of the training would cover overall hazardous waste and contaminated site management with specific emphasis on the packaging, physical handling procedures, inventory control and record keeping, site monitoring, emergency response and overall safeguards - related EHS practices and procedures. The curriculum for the training will utilize the various international guidance materials available (Outputs 3.1.1, 3.1.2 and 3.1.3).; (m) Monitoring and evaluation will be conducted to ensure that enterprises and workers are conducting their work under safe conditions (Outcome 4.2, , and also technical supervision activities carried out under Output 2.1.2 – activities. 2.1.2.3 and 2.1.2.4 and 2.1.3 – activities. 2.1.3.3 and 2.1.3.4) <u>For activities related to handling and recycling wastes</u> (n) The project will include awareness raising initiatives and training specifically tailored to inform and equip recycling workers with the appropriated PPE as well as Best Practices in handling of	MOH / MONRE

				waste. Risk Management Measures will be adopted when dealing with such kind of waste, including the identification of waste material potentially contaminated by POPs, the properly use of PPE, norms related to the management of non-recyclable material to prevent open burning of waste which may generate U-POPs (dioxins). <u>To avoid risk of engaging with minors in the targeted industries.</u> (o) The project will only engage with companies or legal/ofrmal institutions fully compliant to local laws: the Labor Law (2019), the Children's Law (2016) and all documents guiding the implementation clearly stipulate the employment conditions of workers of under aged children. (p) Accordingly, the project will not engate with any company/partner that use workers under 18 in anyactivities of producing, using or transporting chemicals (Labor Law, (Article 147). (q) The Project will only engage to companies that are licensed following the Circular 36/TT-BTMTMT on the area of hazadous waste management. (r) Except for awareness raising actions (which indeed will be also aimed at preventing child employment), the project will not conduct any direct activity with informal operators. • Additional avoidance measures in the engagement activities with the stakeholders under the Outcome 2.1 and 3.1 will be managed through the **ESMP.** -	
Risk 8: Participation of minors in hazardous activities	I = 4 L = 2	**Moderate**	Health - Standard 7: Labour and Working Conditions, Question 3	Following the Vietnam's Labor Law, the Children's Law and all documents guiding the implementation, it is forbidden to use workers under 18 and child labor in all activities of producing, using or transporting chemicals. Furthermore, Circular 36/TT-BTMTMT on hazadous waste management not only requires a licence for companies dealing with hazadous waste, but also requires workers in the company must obtain proper certificates. This requirement ensure that child labour will not be employed in hazadous waste activities. The risk is rated medium. **Risk mitigation/management measures (partially addressed by Project Design, partially to be addressed by Planned ESMP):** - The project will only engage with companies, cooperatives, associations and/or similar CSO institutions fully compliant to local laws: the Labor Law (2019), the Children's Law (2016) and all documents guiding the implementation clearly stipulate the employment of workers under the age of 18 as well as child labor under the age of 15. Accordingly, it is forbidden to use workers under 18 and child labor in all activities of producing, using or transporting chemicals (Labor Law, (Article 147). - The Project will only engage to companies that are licensed following the Circular 36/TT-BTMTMT on hazadous waste management. - Except for awareness raising actions (which indeed will be also aimed at preventing child employment), the project will not conduct any direct activity with informal operators. - **Additional mitigation measures in the engagement activities with the stakeholders under the Outcome 2.1 and 3.1 will be managed through the ESMP.**	
Risk 8: Increased GHG emissions or consumption of raw	I = 3 L = 1	**Low**	Human Climate Change	**This risk is being addressed/mitigated by Project Design.** **(Components 2, and 33)**	MONRE / MOIT / beneficiary

materials, energy, water…			Standard 2: Climate Change and Disaster Risks: 2.4 Standard 8: Pollution Prevention and Resource Efficiency: 8.1, 8.2 and 8.3	Based on experience on previous GEF project in Vietnam, energy and water consumption in production processes of chemicals companies were reduced. Therefore, POP reduction is usually accompanied by the savings of energy and resources. When selecting the processes and technologies for the transition of industries, the level of GHG emissions and use of raw materials of the considered alternatives will be assessed as the criteria to be evaluated for best environmental practice. - The ESMP (under Risks 5 and 6) will also incorporate the relative aspects of Standards 8 triggered and incorporate SES requirements where applicable.	enterprises
Risk 9: The COVID-19 Pandemic may inhibit the smooth implementation of this project, especially the sharing of the foreign experiences	I = 2 L = 2	**Low**	Operational Health	Vietnam Government at different levels has taken measures to prevent COVID-19, including recent widespread vaccination in the country. The last wave of COVID-19 during July – September 2021 provided lots of experience to the Vietnam Government and counterparts in coping with difficult situation, improving its resilience and agility to adapt to different context. The project plans to carry out continuous monitoring and assessment of the impact of COVID-19 on the progress of project implementation and undertake appropriate adaptive management. Project management and implementation supervision can be undertaken through various means such as online and telephone interactions, international experiences may be shared through web seminars.	MONRE
Risk 10: Organizational structure changed at the IP (Vietnam Environment Administration)	I = 1 L = 3	**Low**	Operational	The new Vietnam Prime Minister introduce a new directive, in which the government is planning to reduce the number of government entities in ministries. This can result in the change of organizational structure in some ministries, agencies including Vietnam Environment Administration. Such any re-arrangement of structure could lead to delay in project implementation. UNDP will keep monitoring the process closely, and share this risk to Project Steering Committee led by the Vice Minister of MONRE, to ensure the smooth continuation of the project if the organizational structure changed happens.	MONRE

Annex 7: Overview of Project Staff and Technical Consultancies

Consultant	Time Input	Tasks, Inputs and Outputs
For Project Management		
Local / National contracting		
Project Manager (91,632 USD)	4 years at 1,909 USD/month	The Project Manager (PM), together with the Lead Technical Advisor will be responsible for the overall management of the project, including the mobilization of all project inputs, supervision over project staff, consultants and sub-contractors. Duties and Responsibilities • Manage the overall conduct of the project. • Plan the activities of the project and monitor progress against the approved workplan. • Execute activities by managing personnel, goods and services, training and low-value grants, including drafting terms of reference and work specifications, and overseeing all contractors' work. • Monitor events as determined in the project monitoring plan, and update the plan as required. • Provide support for completion of assessments required by UNDP, spot checks and audits. • Manage requests for the provision of UNDP financial resources through funding advances, direct payments or reimbursement using the FACE form. • Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports. • Monitor progress, watch for plan deviations and make course corrections when needed within project board-agreed tolerances to achieve results. • Ensure that changes are controlled and problems addressed. • Perform regular progress reporting to the project board as agreed with the board, including measures to address challenges and opportunities. • Prepare and submit financial reports to UNDP on a quarterly basis. • Manage and monitor the project risks – including social and environmental risks - initially identified and submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log; • Capture lessons learned during project implementation. • Prepare revisions to the multi-year workplan, as needed, as well as annual and quarterly plans if required. • Prepare the inception report no later than one month after the inception workshop. • Ensure that the indicators included in the project results framework are monitored annually in advance of the GEF PIR submission deadline so that progress can be reported in the GEF PIR. • Prepare the GEF PIR; • Assess major and minor amendments to the project within the parameters set by UNDP-GEF; • Monitor implementation plans including the gender action plan, stakeholder engagement plan, and any environmental and social management plans; • Monitor and track progress against the GEF Core indicators.

Consultant	Time Input	Tasks, Inputs and Outputs
		• Support the Mid-term review and Terminal Evaluation process. • Add technical tasks as necessary
Project Assistant/Procurement officer cum Interpreter (47,040 USD)	4 years at 980 USD/month	Duties and Responsibilities Under the guidance and supervision of the Project Manager, the Project Assistant will carry out the following tasks: • Assist the Project Manager in day-to-day management and oversight of project activities; • Assist the M&E officer in matters related to M&E and knowledge resources management; • Assist in the preparation of progress reports; • Ensure all project documentation (progress reports, consulting and other technical reports, minutes of meetings, etc.) are properly maintained in hard and electronic copies in an efficient and readily accessible filing system, for when required by PB, TAC, UNDP, project consultants and other PMU staff; • Provide PMU-related administrative and logistical assistance.
Project Accountant/Finance Assistant/Finance officer (53,280 USD)	4 years at 1,110 USD/month	Duties and Responsibilities • Keep records of project funds and expenditures, and ensure all project-related financial documentation are well maintained and readily available when required by the Project Manager; • Review project expenditures and ensure that project funds are used in compliance with the Project Document and GoV financial rules and procedures; • Validate and certify FACE forms before submission to UNDP; • Provide necessary financial information as and when required for project management decisions; • Provide necessary financial information during project audit(s); • Review annual budgets and project expenditure reports, and notify the Project Manager if there are any discrepancies or issues; • Consolidate financial progress reports submitted by the responsible parties for implementation of project activities; • Liaise and follow up with the responsible parties for implementation of project activities in matters related to project funds and financial progress reports.

Technical consultants for Component 1

Consultant	Time Input	Tasks, Inputs and Outputs
International consultant on green financing and green procurement on POPs and mercury (81,900 USD)	126 days over two years at the estimated daily rate 650 USD/day	International consultants providing technical assistance and expertise on the following topics: • green financing, POP and mercury (40 days). • green financing mechanism in public and private institutions (15 days). • green financing implementation in public and private institutions (22 days). • green procurement in public institutions (29 days). • green procurement in healthcare facilities (20 days).

Consultant	Time Input	Tasks, Inputs and Outputs
International consultant on gender and chemical management (22,750 USD)	35 days over one year at the estimated daily rate 650 USD/day	International consultants providing technical assistance and expertise on: • gender specific risk management of POPs and mercury included in the relevant environmental regulation. (20 days) • lending programs for women enterprises (10 days) • criteria for gender mainstreaming in gender procurement (5 days)

Consultant	Time Input	Tasks, Inputs and Outputs
International consultant on Mercury, industrial emissions, hazardous waste disposal (29,250 USD)	45 days over one year at the estimated daily rate 650 USD/day	International consultants providing technical assistance and expertise on the following topics: • mercury in healthcare equipment (10 days). • mercury in lighting equipment (10 days). • mercury disposal technologies (25 days).

Consultant	Time Input	Tasks, Inputs and Outputs
International consultant on POPs (50,700 USD)	78 days over one year at the estimated daily rate 650 USD/day	International consultants providing technical assistance and expertise on the following topics: • POP and eco-labeling (15 days). • POP and EPR (8 days). • POP and mercury waste disposal (15 days). • new POPs in manufacturing and industrial emissions (40 days).

Consultant	Time Input	Tasks, Inputs and Outputs
International consultant on environmental regulation on POPs and mercury (32,500 USD)	50 days over one year at the estimated daily rate 650 USD/day	International consultants providing technical assistance and expertise on the following topics: • regulation and POPs (25 days). • regulation and mercury (10 days). • regulation and industrial emission limits (15 days).

Consultant	Time Input	Tasks, Inputs and Outputs
A group of national experts to assist MONRE / MOIT on the improvement of regulation on POPs and EPR (70,000 USD)	350 days over 2 years at the estimated daily rate 200 USD/day	Local consultants providing technical assistance and expertise on the following topics: • preparing draft on regulation and POPs (140 days). • development environmental law and EPR (150 days). • waste regulation, disposal technologies and mercury (60 days).

Consultant	Time Input	Tasks, Inputs and Outputs
A national expert on gender mainstreaming in mercury and POP management (31,000 USD)	155 days over 2 years at the estimated daily rate 200 USD/day	Local consultants providing technical assistance and expertise on the following topics: • developing on a gender specific section for risk management of POPs and Mercury included in the relevant environmental regulation. (45 days). • developing on a gender specific section for risk management of POPs and Mercury included in the relevant environmental regulation. (60 days). • developing on a gender specific section for risk management of POPs and Mercury included in the relevant environmental regulation. (20 days). • criteria for facilitating access to green loan to women enterprises. (20 days). • working on criteria to include gender balance at enterprises as a green procurement requirement (10 days)

Consultant	Time Input	Tasks, Inputs and Outputs
A group of national experts to assist MONRE, MOIT and MOH on the development and implementation of Green Financing and Green Procurement (112,000 USD)	560 days over 2 years at the estimated daily rate 200 USD/day	Local consultants providing technical assistance and expertise on the following topics: • green financing, POPs and mercury in products (110 days). • implementation of incentive mechanisms (80 days). • technical aspects of POPs, mercury and procurement (100 days). • management of environmental incentives (80 days). • preparing draft on Green procurement guidelines for MONRE (80 days). • preparing draft on Green procurement guidelines for healthcare facilities (80 days). • assistance on the implementation of Green procurement in hospitals (30 days)

Consultant	Time Input	Tasks, Inputs and Outputs
A national expert on mercury roadmap development (41,200 USD)	206 days over one years at the estimated daily rate 200 USD/day	Local consultants providing technical assistance and expertise on the following topics: • management of mercury products in healthcare facilities (50 days). • alternative to mercury lamps and other products (40 days). • mercury disposal technologies (60 days). • Alternative to mercury in products (56 days)

Consultant	Time Input	Tasks, Inputs and Outputs
A national expert on POPs, ecolabeling and EPR (18,000 USD)	90 days over one years at the estimated daily rate 200 USD/day	Local consultants providing technical assistance and expertise on the following topics: • working on POP and eco-labeling (50 days). • developing proposals on POP limits and relevant obligation in EPR (40 days).

Technical consultants for Component 2

Consultant	Time Input	Tasks, Inputs and Outputs
International consultant on Air Pollution Control System to reduce POPs and mercury releases (123,500 USD)	190 days over 2 years at the estimated daily rate 650 USD/day	International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics: • to assist enterprises on the design of their APCS to reduce POP and mercury (90 days). • To assist in the selection of enterprises to be awarded for APCS piloting and assist on the implementation of their projects (100 days).

Consultant	Time Input	Tasks, Inputs and Outputs
International consultant on analysis of POPs (9,750 USD)	15 days over 3 months at the estimated daily rate 650 USD/day	International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics: • training on analysis of POP in laboratory and with portable equipment (15 days).

Consultant	Time Input	Tasks, Inputs and Outputs
An international expert on gender mainstreaming in workplace and chemical management (26,000 USD)	40 days over 2 years at the estimated daily rate 650 USD/day	International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics, • sex-disaggregated data on accident at workplace in the manufacturing industry, with focus to exposure to chemicals. (20 days) • gender aspects related to POPs content in products and industrial processes (10 days) • gender aspects related to air pollution from industrial sources (10 days)

Consultant	Time Input	Tasks, Inputs and Outputs
Two International consultants on POPs, mercury and their alternatives in the manufacturing sector (191,100 USD)	294 days over two years at the estimated daily rate 650 USD/day	International consultants providing technical assistance and expertise on the following topics: • Survey and analysis of XPS/EPS manufacturing sector (11 days). • Survey and analysis of use of SCCP in industrial processes (20 days). • Survey and analysis of use of POP BFR in industrial processes (25 days). • Survey and analysis of use of PFOS and PFOAs in industrial processes (25 days). • To assist enterprises on the design of their POP or mercury reduction project (100 days). • To assist on the selection of enterprises to be awarded and assist on the implementation of their projects (85 days). • To carry out baseline and terminal assessment of green financing implementation (28 days).

Consultant	Time Input	Tasks, Inputs and Outputs
International consultant on POPs in waste and secondary materials (22,100 USD)	34 days over six months at the estimated daily rate 650 USD/day	International consultants providing technical assistance and expertise on the following topics: • Identification of POP limits in waste and secondary materials based on national and international case studies(20 days). • Technical specification and quality criteria for secondary materials and recyclable waste (14 days).

Consultant	Time Input	Tasks, Inputs and Outputs
A team of national consultants to provide technical assistance on the selection to enterprises and the Green Financing committee for the selection and implementation POPs avoidance technologies (108,000 USD)	540 days over 3 years at the estimated daily rate 200 USD/day	Local consultants providing technical assistance and expertise on the following topics: • Assisting enterprises on the design of their POP or mercury reduction project (220 days) • providing technical assistance on selection of enterprises to be awarded and implementation of their projects (220 days) • To assist the Committee on mid term assessment of green financing implementation (100 days)

Consultant	Time Input	Tasks, Inputs and Outputs
National experts on analysis of POPs (6000 USD)	30 days over 6 months at the estimated daily rate 200 USD/day	National expert providing training on analysis of POP in laboratory and with portable equipment (30 days).

Consultant	Time Input	Tasks, Inputs and Outputs
National consultant on Gender Mainstreaming at workplace (16,000 USD)	80 days over 2 years at the estimated daily rate 200 USD/day	Local consultants providing technical assistance and expertise on the following topics: • working on on gender related criteria for the identification of chemical and non-chemical alternatives to POPs in products and processes (30 days). • working on a report on the gender-disaggregated effect of industrial air pollution on the general population, with recommendation, carried out. (30 days). • establishing communication among recycler and enterprises enhancing consultation of female workers (20 days)

Consultant	Time Input	Tasks, Inputs and Outputs
A team of national consultants on POPs and mercury in the manufacturing sector (162,000 USD)	810 days over 3 years at the estimated daily rate 200 USD/day	Local consultants to: • conduct survey and analysis on XPS/EPS manufacturing sector (80 days). • conduct survey and analysis on use of SCCP in industrial processes (80 days). • conduct survey and analysis on use of POP BFR in industrial processes (80 days). • conduct survey and analysis on use of PFOS and PFOAs in industrial processes (80 days). • assist 5 enterprises each on the design of their POP or mercury reduction project (225 days). • assist on the selection of enterprises to be awarded and implementation of their projects (230 days). • assist on baseline and terminal assessment of green financing implementation (35 days)..

Consultant	Time Input	Tasks, Inputs and Outputs
A national consultant on POPs in waste and secondary materials (21,000 USD)	105 days over one year at the estimated daily rate 200 USD/day	Local consultants to: • conduct surveys on recycling and manifacturing enteprises on POP in waste and secondary materials (50 days). • Provide assistance and facilitation on the communication among enterprises and recyclers on POP containing waste (55 days)

Technical consultants for Component 3

Consultant	Time Input	Tasks, Inputs and Outputs

International consultants to provide technical assistance on mercury replacement in healthcare facilities, office and agriculture (83,200 USD)	128 days over two years at the estimated daily rate 650 USD/day	International consultants providing technical assistance and expertise on the following topics: • review of the status of mercury equipment in Vietnam (25 days) • the development of a guidance on the use, maintenance and calibration of non-mercury alternatives to medical devices (25 days) • mercury containing lamp and non-mercury alternatives (10 days) • preparing materials and perform training on mercury equipment and alternatives in healthcare facilities (20 days) • preparing materials and perform training on mercury lamps and alternatives (20 days) • development of bidding documents for non-mercury lamps (4 days) • development of bidding documents for non-mercury equipment (4 days) • providing technical assistance and international experience on safe disposal and recycling of mercury containing equipment (20 days)

Consultant	Time Input	Tasks, Inputs and Outputs
International consultants to provide advice on the risk management of PPEs for women in the waste management sectors (3,250 USD)	5 days over 6 months at the estimated daily rate 650 USD/day	International consultants providing technical assistance and expertise on the following topics: • the risk management, technical guidance on personal protective measures for women in the waste management sectors (5 days)

Consultant	Time Input	Tasks, Inputs and Outputs
A team of national consultants to provide technical assistance on mercury replacement in healthcare facilities, office and agriculture (140,000 USD)	700 days over 2 years at the estimated daily rate 200 USD/day	Local consultants for: • developing technical guidance on the development of a guidance on the use, maintenance and calibration of non-mercury alternatives to medical devices (30 days) • developing guidance fo the replacement of mercury containing lamps (40 days) • preparing materials and perform training on mercury equipment and alternatives in healthcare facilities (220 days) • preparing materials and perform training on mercury lamps and alternatives (250 days) • developing bidding documents for non-mercury lamps (40 days) • developing bidding documents for non-mercury equipment (40 days) • providing technical assistance and national knowledge on safe disposal and recycling of mercury containing equipment (80 days)

Consultant	Time Input	Tasks, Inputs and Outputs

A national consultant on Gender Mainstreaming and mercury waste and use of non-mercury devices (10.000 USD)	50 days over two years at the estimated daily rate of 200 USD/day	Local consultants for: • preparing specific materials for the risk management, technical guidance on personal protective measures for women in the waste management sectors. through consultation with women workers and gender experts (20 days) • providing training on the calibration and use of non-mercury devices for nurses in the hospitals (30 days)

Consultants for component 4 including Inception, Monitoring and Evaluation, Knowledge Management

Consultant	Time Input	Tasks, Inputs and Outputs
International consultant to provide technical assistance at inception, project reporting and to provide materials for Knowledge Management (25,350 USD)	39 days over 4 years at the estimated daily rate 650 USD/day	International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics: • preparing materials on POP and mercury related topic to be shared on the website (10 days) • preparing material and holding presentations on green financing, POP and mercury (10 days) • providing technical assistance and experience on project indicator development (3 days) • preparation of project workplans (16 days)

Consultant	Time Input	Tasks, Inputs and Outputs
International consultants for mid term review and final evaluation (52,000 USD)	80 days over 4 years at the estimated daily rate 650 USD/day	International consultants for: • undertaking mid term review (40 days) • undertaking terminal evaluation (40 days)

Consultant	Time Input	Tasks, Inputs and Outputs
Local consultants for mid term review and final evaluation (24,000 USD)	120 days over 2 years at the estimated daily rate 200 USD/day	Local consultants to cooperate with international consultant to: • undertake mid-term review (60 days) • undertake terminal evaluation (60 days)

Consultant	Time Input	Tasks, Inputs and Outputs

Two local consultants to provide technical assistance at inception, project reporting and to provide materials for Knowledge Management (74,500 USD)	372.5 days over 4 years at the estimated daily rate 200 USD/day	Local consultants for: • providing assistance to the international consultant on the preparation of the inception report (30 days) • coordination and supervision of Gender Mainstreaming related activities in project implementation (90 days) • development and creation of the Knowledge Sharing Platform (35 days) • implementation and maintenance of the Knowledge Sharing Platform (75 days) • preparing materials on POP and mercury related topic to be shared on the website (70 days) • preparing and holding presentations on green financing, POP and mercury (35 days) • providing national knowledge and assistance on project indicator development (37.5 days)

Annex 8: Stakeholder Engagement Plan

Attached as a separate file

Annex 9: Gender Analysis and Gender Action Plan

Attached as a separate file

Annex 10: Procurement Plan for the first year

(The template of this plan is designed following the Law of Procurement of Vietnam No. 43/2013/QH13 and Decree 63/2014/ND-CP of the Government)

No.	Name of package	Amount (USD)	Source of funds	Selection Form	Selection Method	Start date for Bidder selection	Type of Contract	Contract date
A	**Consulting Services**	**711,117**						
1	International consultant related to POPs, ecolabel, Mercury, EPR and Green Financing Mechanism (Component 1,2,3,4)	89,175	GEF/UNDP	International Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	12 months
2	Review, amendment, development of new legislation related to POPs, Mercury (Component 1)	69,072	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	24 months
3	Review, amendment, development of new legislation related to Ecolabel, EPR and Green Financing Mechanism (Component 1)	100,000	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	24 months
4	Review, amendment, development of new legislation related to mercury and replacement of mercury thermometers and mercury containing lamps (Component 1)	100,000	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	24 months
5	Survey, analyses POPs, design of the pilot implementation programme for the project (Component 2)	116,390	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	24 months
6	Develop the training materials for replacement of mercury medical devices and fluorescent lamps	15,900	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	12 months
7	Project audit services (Component 4)	10,000	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	48 months
8	Project staff (Project Manager, Project Assistant, Project Accountant/Finance Assistant/Finance officer) - Project management cost	210,580	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	By the time	48 months
B	**Procurement of goods and non-consulting services**	**135,800**						
1	Develop information sharing mechanism and collaboration on POP and Mercury (Component 4)	34,810	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	12 months
2	Office equipment (computer, printer, scanner…) (Project management cost)	15,000	GEF/UNDP	Competitive quotation	One Stage - Sginle Envelope	QIII/2022	Lumpsum	03 months

3	Training events for trainer, healthcare facilities related to mercury lamps and mercury devices (Component 3)	63,000	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	12 months
4	Workshop organization services (Component 1,3,4)	22,990	GEF/UNDP	National Open bidding	Two Stages Single Envelope	QIII/2022	Lumpsum	12 months
	Total	**846,917**						

Annex 11. Letter of financial commitments

Attached as a separate file

Annex 12 GEF Core indicators

Core Indicator 1	Terrestrial protected areas created or under improved management for conservation and sustainable use					(Hectares)
			Hectares (1.1+1.2)			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 1.1	Terrestrial protected areas newly created					
Name of Protected Area	WDPA ID	IUCN category	Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
		(select)				
		(select)				
		Sum				
Indicator 1.2	Terrestrial protected areas under improved management effectiveness					
Name of Protected Area	WDPA ID	IUCN category	Hectares	METT Score		
				Baseline		Achieved
					Endorsement	MTR	TE
		(select)					
		(select)					
		Sum					
Core Indicator 2	Marine protected areas created or under improved management for conservation and sustainable use					(Hectares)
			Hectares (2.1+2.2)			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 2.1	Marine protected areas newly created					
Name of Protected Area	WDPA ID	IUCN category	Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
		(select)				
		(select)				
		Sum				

Indicator 2.2	Marine protected areas under improved management effectiveness						
Name of Protected Area	WDPA ID	IUCN category	Hectares	METT Score			
				Baseline		Achieved	
				PIF stage	Endorsement	MTR	TE
		(select)					
		(select)					
		Sum					
Core Indicator 3	Area of land restored						(Hectares)
				Hectares (3.1+3.2+3.3+3.4)			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.1	Area of degraded agricultural land restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.2	Area of forest and forest land restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.3	Area of natural grass and shrublands restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.4	Area of wetlands (including estuaries, mangroves) restored						
				Hectares			

			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Core Indicator 4	Area of landscapes under improved practices (hectares; excluding protected areas)					(Hectares)
			Hectares (4.1+4.2+4.3+4.4)			
			Expected		Expected	
			PIF stage	Endorsement	MTR	TE
Indicator 4.1	Area of landscapes under improved management to benefit biodiversity					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 4.2	Area of landscapes that meet national or international third-party certification that incorporates biodiversity considerations					
Third party certification(s):			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 4.3	Area of landscapes under sustainable land management in production systems					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 4.4	Area of High Conservation Value Forest (HCVF) loss avoided					
Include documentation that justifies HCVF			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE

Core Indicator 5	Area of marine habitat under improved practices to benefit biodiversity				(Hectares)
Indicator 5.1	Number of fisheries that meet national or international third-party certification that incorporates biodiversity considerations				
Third party certification(s):		Number			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
Indicator 5.2	Number of large marine ecosystems (LMEs) with reduced pollution and hypoxial				
		Number			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
Indicator 5.3	Amount of Marine Litter Avoided				
		Metric Tons			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
Core Indicator 6	Greenhouse gas emission mitigated				(Metric tons of CO_2e)
		Expected metric tons of CO_2e (6.1+6.2)			
		PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)				
	Expected CO2e (indirect)				
Indicator 6.1	Carbon sequestered or emissions avoided in the AFOLU sector				
		Expected metric tons of CO_2e			
		PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)				
	Expected CO2e (indirect)				
	Anticipated start year of accounting				
	Duration of accounting				

Indicator 6.2	Emissions avoided Outside AFOLU					
			Expected metric tons of CO_2e			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)					
	Expected CO2e (indirect)					
	Anticipated start year of accounting					
	Duration of accounting					
Indicator 6.3	Energy saved					
			MJ			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 6.4	Increase in installed renewable energy capacity per technology					
		Technology	Capacity (MW)			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
		(select)				
		(select)				
Core Indicator 7	Number of shared water ecosystems (fresh or marine) under new or improved cooperative management					(Number)
Indicator 7.1	Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation					
		Shared water ecosystem	Rating (scale 1-4)			
			PIF stage	Endorsement	MTR	TE
Indicator 7.2	Level of Regional Legal Agreements and Regional Management Institutions to support its implementation					
		Shared water ecosystem	Rating (scale 1-4)			
			PIF stage	Endorsement	MTR	TE

Indicator 7.3	Level of National/Local reforms and active participation of Inter-Ministerial Committees					
		Shared water ecosystem	Rating (scale 1-4)			
			PIF stage	Endorsement	MTR	TE
Indicator 7.4	Level of engagement in IWLEARN through participation and delivery of key products					
		Shared water ecosystem	Rating (scale 1-4)			
			Rating		Rating	
			PIF stage	Endorsement	MTR	TE
Core Indicator 8	Globally over-exploited fisheries Moved to more sustainable levels					(Metric Tons)
Fishery Details			Metric Tons			
			PIF stage	Endorsement	MTR	TE
Core Indicator 9	Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products					(Metric Tons)
			Metric Tons (9.1+9.2+9.3)			
			Expected		Achieved	
			PIF stage	PIF stage	MTR	TE
			35.648	35.648	10.162	35.648
Indicator 9.1	Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)					
POPs type			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
(select)	(select)	(select)	35	35	10	35
(select)	(select)	(select)				
(select)	(select)	(select)				
Indicator 9.2	Quantity of mercury reduced					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
			0.648	0.648	0.162	0.648

Indicator 9.3	Hydrochloroflurocarbons (HCFC) Reduced/Phased out					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.4	Number of countries with legislation and policy implemented to control chemicals and waste					
			Number of Countries			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.5	Number of low-chemical/non-chemical systems implemented particularly in food production, manufacturing and cities					
		Technology	Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.6	Quantity of POPs/Mercury containing materials and products directly avoided					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	PIF stage	Endorsement
Core Indicator 10	Reduction, avoidance of emissions of POPs to air from point and non-point sources					(grams of toxic equivalent gTEQ)
Indicator 10.1	Number of countries with legislation and policy implemented to control emissions of POPs to air					
			Number of Countries			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 10.2	Number of emission control technologies/practices implemented					
			Number			

			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
			5	5	0	1
Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment					(Number)
			Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
		Female	1,500	1,500	400	2,000
		Male	2,000	2,000	600	1,500
		Total	3,500	3,500	1,000	3,500

Annex 13: GEF Taxonomy

Guidance to project developer: Please complete these tables as appropriate ticking the most relevant keywords/topics/themes. Double check on the GEF website here to ensure this is the most recent list: https://www.thegef.org/documents/templates This Annex must be completed by the submission deadline, but it does not need to be included in the ProDoc submitted to the GEF as this data must be manually entered into the GEF Portal.

Level 1	Level 2	Level 3	Level 4
☒ Influencing models			
	☒ Transform policy and regulatory environments		
	☒ Strengthen institutional capacity and decision-making		
	☐ Convene multi-stakeholder alliances		
	☒ Demonstrate innovative approaches		
	☒ Deploy innovative financial instruments		
☒ **Stakeholders**			
	☐ Indigenous Peoples		
	☒ **Private Sector**		
		☒ Capital providers	
		☐ Financial intermediaries and market facilitators	
		☐ Large corporations	
		☒ SMEs	
		☐ Individuals/Entrepreneurs	
		☐ Non-Grant Pilot	
		☐ Project Reflow	
	☒ **Beneficiaries**		
	☐ Local Communities		
	☒ **Civil Society**		

		☐ Community Based Organization	
		☒ Non-Governmental Organization	
		☐Academia	
		☐Trade Unions and Workers Unions	
	☒ Type of Engagement		
		☒Information Dissemination	
		☐Partnership	
		☐Consultation	
		☒Participation	
	☒ **Communications**		
		☒Awareness Raising	
		☒Education	
		☐Public Campaigns	
		☐Behavior Change	
☒ Capacity, Knowledge and Research			
	☐ Enabling Activities		
	☐ Capacity Development		
	☐ Knowledge Generation and Exchange		
	☐ Targeted Research		
	☒**Learning**		
		☒Theory of Change	
		☒Adaptive Management	
		☒ Indicators to Measure Change	
	☒**Innovation**		
	☒ Knowledge and Learning		
		☒Knowledge Management	
		☒Innovation	
		☐Capacity Development	
		☒Learning	

	☒ Stakeholder Engagement Plan		
☒ **Gender Equality**			
	☒ Gender Mainstreaming		
		☒Beneficiaries	
		☐Women groups	
		☒ Sex-disaggregated indicators	
		☒Gender-sensitive indicators	
	☒Gender results areas		
		☐ Access and control over natural resources	
		☒ Participation and leadership	
		☒ Access to benefits and services	
		☒Capacity development	
		☒Awareness raising	
		☒Knowledge generation	
☒ Focal Areas/Theme			
	☐ Integrated Programs		
		☐ Commodity Supply Chains (Good Growth Partnership)	
			☐ Sustainable Commodities Production
			☐Deforestation-free Sourcing
			☐Financial Screening Tools
			☐ High Conservation Value Forests
			☐High Carbon Stocks Forests
			☐Soybean Supply Chain
			☐Oil Palm Supply Chain
			☐Beef Supply Chain
			☐Smallholder Farmers
			☐Adaptive Management
		☐Food Security in Sub-Sahara Africa	
			☐Resilience (climate and shocks)

			☐ Sustainable Production Systems
			☐ Agroecosystems
			☐ Land and Soil Health
			☐ Diversified Farming
			☐ Integrated Land and Water Management
			☐ Smallholder Farming
			☐ Small and Medium Enterprises
			☐ Crop Genetic Diversity
			☐ Food Value Chains
			☐ Gender Dimensions
			☐ Multi-stakeholder Platforms
		☐ Food Systems, Land Use and Restoration	
			☐ Sustainable Food Systems
			☐ Landscape Restoration
			☐ Sustainable Commodity Production
			☐ Comprehensive Land Use Planning
			☐ Integrated Landscapes
			☐ Food Value Chains
			☐ Deforestation-free Sourcing
			☐ Smallholder Farmers
		☐ Sustainable Cities	
			☐ Integrated urban planning
			☐ Urban sustainability framework
			☐ Transport and Mobility
			☐ Buildings
			☐ Municipal waste management
			☐ Green space
			☐ Urban Biodiversity
			☐ Urban Food Systems
			☐ Energy efficiency
			☐ Municipal Financing
			☐ Global Platform for Sustainable Cities
			☐ Urban Resilience
	☐ **Biodiversity**		
		☐ Protected Areas and Landscapes	

			☐ Terrestrial Protected Areas
			☐ Coastal and Marine Protected Areas
			☐ Productive Landscapes
			☐ Productive Seascapes
			☐ Community Based Natural Resource Management
		☐ Mainstreaming	
			☐ Extractive Industries (oil, gas, mining)
			☐ Forestry (Including HCVF and REDD+)
			☐ Tourism
			☐ Agriculture & agrobiodiversity
			☐ Fisheries
			☐ Infrastructure
			☐ Certification (National Standards)
			☐ Certification (International Standards)
		☐ Species	
			☐ Illegal Wildlife Trade
			☐ Threatened Species
			☐ Wildlife for Sustainable Development
			☐ Crop Wild Relatives
			☐ Plant Genetic Resources
			☐ Animal Genetic Resources
			☐ Livestock Wild Relatives
			☐ Invasive Alien Species (IAS)
		☐ Biomes	
			☐ Mangroves
			☐ Coral Reefs
			☐ Sea Grasses
			☐ Wetlands
			☐ Rivers
			☐ Lakes
			☐ Tropical Rain Forests
			☐ Tropical Dry Forests
			☐ Temperate Forests
			☐ Grasslands
			☐ Paramo

			☐Desert
		☐Financial and Accounting	
			☐ Payment for Ecosystem Services
			☐Natural Capital Assessment and Accounting
			☐Conservation Trust Funds
			☐Conservation Finance
		☐Supplementary Protocol to the CBD	
			☐Biosafety
			☐ Access to Genetic Resources Benefit Sharing
	☐**Forests**		
		☐ Forest and Landscape Restoration	
			☐REDD/REDD+
		☐Forest	
			☐Amazon
			☐Congo
			☐Drylands
	☐ **Land Degradation**		
		☐ Sustainable Land Management	
			☐Restoration and Rehabilitation of Degraded Lands
			☐Ecosystem Approach
			☐ Integrated and Cross-sectoral approach
			☐Community-Based NRM
			☐Sustainable Livelihoods
			☐Income Generating Activities
			☐Sustainable Agriculture
			☐ Sustainable Pasture Management
			☐ Sustainable Forest/Woodland Management
			☐ Improved Soil and Water Management Techniques
			☐Sustainable Fire Management
			☐ Drought Mitigation/Early Warning

		☐ Land Degradation Neutrality	
			☐ Land Productivity
			☐ Land Cover and Land cover change
			☐ Carbon stocks above or below ground
		☐ Food Security	
	☐ International Waters		
		☐ Ship	
		☐ Coastal	
		☐ Freshwater	
			☐ Aquifer
			☐ River Basin
			☐ Lake Basin
		☐ Learning	
		☐ Fisheries	
		☐ Persistent toxic substances	
		☐ SIDS : Small Island Dev States	
		☐ Targeted Research	
		☐ Pollution	
			☐ Persistent toxic substances
			☐ Plastics
			☐ Nutrient pollution from all sectors except wastewater
			☐ Nutrient pollution from Wastewater
		☐ Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		☐ Strategic Action Plan Implementation	
		☐ Areas Beyond National Jurisdiction	
		☐ Large Marine Ecosystems	
		☐ Private Sector	
		☐ Aquaculture	
		☐ Marine Protected Area	
		☐ Biomes	
			☐ Mangrove
			☐ Coral Reefs

			☐ Seagrasses
			☐ Polar Ecosystems
			☐ Constructed Wetlands
	☒ Chemicals and Waste		
		☒ Mercury	
		☐ Artisanal and Scale Gold Mining	
		☒ Coal Fired Power Plants	
		☒ Coal Fired Industrial Boilers	
		☒ Cement	
		☒ Non-Ferrous Metals Production	
		☐ Ozone	
		☒ Persistent Organic Pollutants	
		☒ Unintentional Persistent Organic Pollutants	
		☒ Sound Management of chemicals and Waste	
		☐ Waste Management	
			☐ Hazardous Waste Management
			☐ Industrial Waste
			☐ e-Waste
		☒ Emissions	
		☐ Disposal	
		☒ New Persistent Organic Pollutants	
		☐ Polychlorinated Biphenyls	
		☒ Plastics	
		☒ Eco-Efficiency	
		☐ Pesticides	
		☐ DDT - Vector Management	
		☐ DDT - Other	
		☒ Industrial Emissions	
		☐ Open Burning	
		☒ Best Available Technology / Best Environmental Practices	
		☒ Green Chemistry	
	☐ **Climate Change**		
		☐ Climate Change Adaptation	

			☐Climate Finance
			☐Least Developed Countries
			☐Small Island Developing States
			☐Disaster Risk Management
			☐Sea-level rise
			☐Climate Resilience
			☐Climate information
			☐Ecosystem-based Adaptation
			☐Adaptation Tech Transfer
			☐ National Adaptation Programme of Action
			☐National Adaptation Plan
			☐Mainstreaming Adaptation
			☐Private Sector
			☐Innovation
			☐Complementarity
			☐Community-based Adaptation
			☐Livelihoods
		☐Climate Change Mitigation	
			☐Agriculture, Forestry, and other Land Use
			☐Energy Efficiency
			☐Sustainable Urban Systems and Transport
			☐Technology Transfer
			☐Renewable Energy
			☐Financing
			☐Enabling Activities
		☐Technology Transfer	
			☐ Poznan Strategic Programme on Technology Transfer
			☐ Climate Technology Centre & Network (CTCN)
			☐Endogenous technology
			☐Technology Needs Assessment
			☐Adaptation Tech Transfer
		☐United Nations Framework on Climate Change	☐ Nationally Determined Contribution
	☐ Rio Markers		
		☐Paris Agreement	

		☐ Sustainable Development Goals	
		☐ Climate Change Mitigation 0	
		☐ Climate Change Mitigation 1	
		☐ Climate Change Mitigation 2	
		☐ Climate Change Adaptation 0	
		☐ Climate Change Adaptation 1	
		☐ Climate Change Adaptation 2	

Annex 14: Partners Capacity Assessment Tool and HACT assessment

(File attached separately)

Annex 15: UNDP Project Quality Assurance Report

(to be completed in UNDP online corporate planning system)

Annex 16: Green Financing in Vietnam

(File attached separately)

Annex 17: Cost of air pollution treatment technology for small enterprises in Vietnam

(File attached separately)

Annex 18: Preliminary list of industries for the survey

(File attached separately)

Annex 19: Tentative list of hospitals for the demonstration of non-mercury thermometer

(File attached separately)