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 (MONRE)	**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: December 2023	Planned end date: December 2027	
Expected date of Mid-Term Review: December 2025	Expected date of Terminal Evaluation: October 2027	

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)		
UNDP in kind	USD	600,000
Pollution Control Department, MONRE in cash	USD	112,641
Co-financing in kind: Including working office, equipment, factories, infrastructure, technology, raw materials etc.,) from units: Pollution Control Department, MONRE; Vietnam Chemicals Agency, Ministry of Industry and Trade; Health Environment Management Agency, Ministry of Health; Vietnam Plastics Association; Vietnam Corrosion Association; Vinafoam Vietnam Co., Ltd; Vietnam Environment Protection fund, MONRE. During the project implementation, Pollution Control Department under MONRE is responsible for synthesizing the report on co-financing in kind to serve the project		

Signatures:

Signature: **Hoang Van Thuc** **Director General** **Pollution Control Department** **Ministry of Natural Resources and Environment**	Agreed by Implementing Partner	**Date/Month/Year:** 23/9/24
Signature: **Ramla Khalidi** **Resident Representative** **UNDP Viet Nam**	Agreed by UNDP	**Date/Month/Year:** 24/9/24

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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 16). 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 15, 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 15), 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.

[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

(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]

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

[9] https://www.who.int/vietnam/news/detail/12-12-2019-who-commends-can-tho-s-commitment-to-tackle-air-pollution
[10] These stakeholders and partners are listed in detail in Annex 8 and in chapter IV on Results and Partnership.

- 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.
- 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:

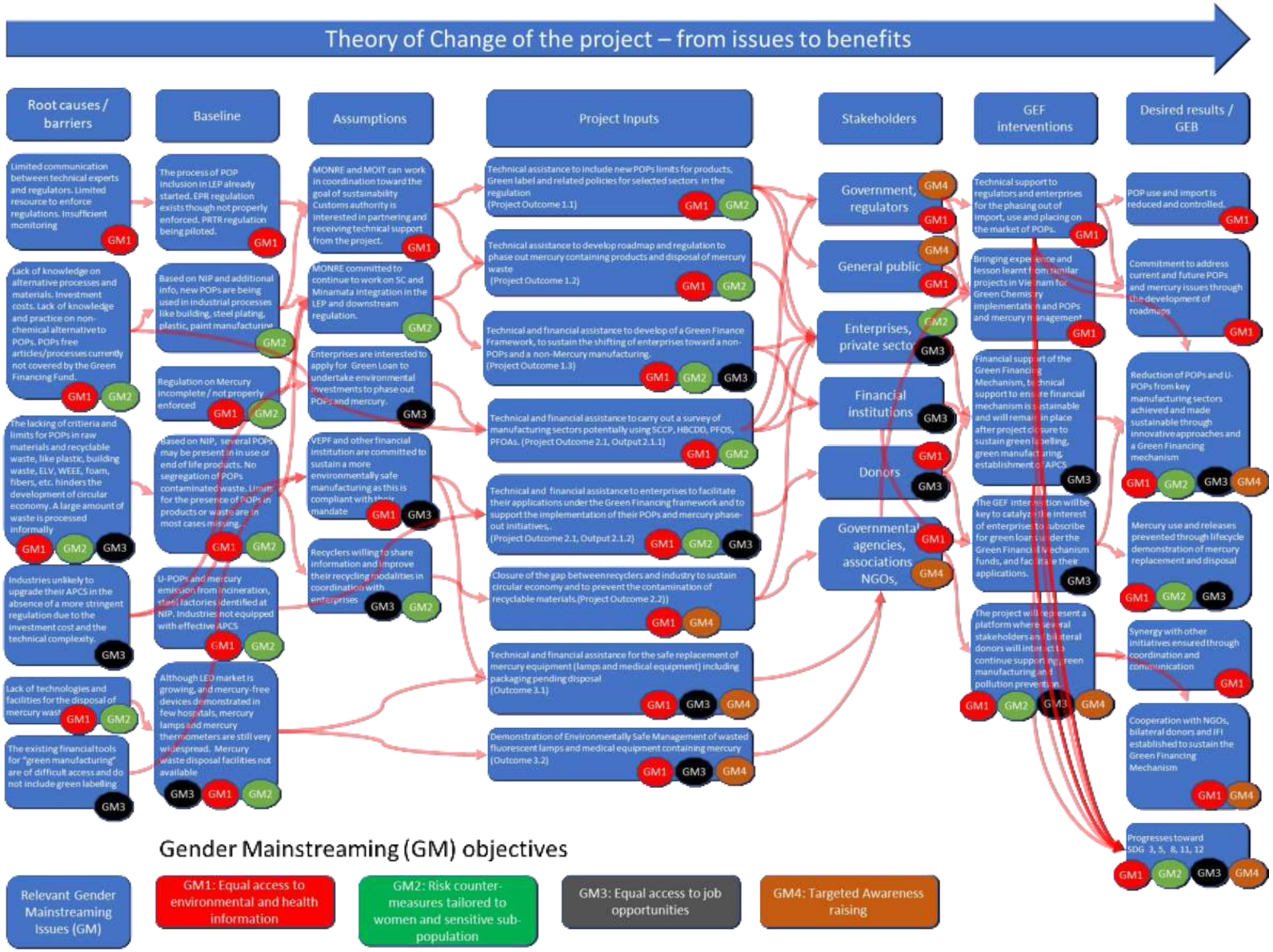
- As the project entails initiatives that will impact manufacturing enterprises, it is assumed that both MOIT and MONRE and their associated provincial departments can coordinate and work together so that the objectives related to the safeguarding of enterprises' business and protection of the environment 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:** During the project implementation, Pollution Control Department under MONRE is responsible for synthesizing the report on co-financing in kind to serve the project.	(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. (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. (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:** During the project implementation, Pollution Control Department under	(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 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) 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

MONRE is responsible for synthesizing the report on co-financing in kind to serve the project.	
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: During the project implementation, Pollution Control Department under MONRE is responsible for synthesizing the report on co-financing in kind to serve the project.	**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. Develop 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. Develop an 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. Develop a 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. Draft 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. Develop 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).

- Provide 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 17 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 16), 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 18) 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 December (previous year) to November (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

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

shared with the PSC. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

GEF Core Indicators:

The GEF Core indicators included as Annex 11 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 October 2027. 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].

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 December 2025
Independent Terminal Evaluation (TE)	48,554	By October 2027
TOTAL indicative COST	**159,810**	

[24] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/
[25] See https://www.thegef.org/gef/policies_guidelines
[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 114/2021/NĐ-CP).

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 114/2021/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:

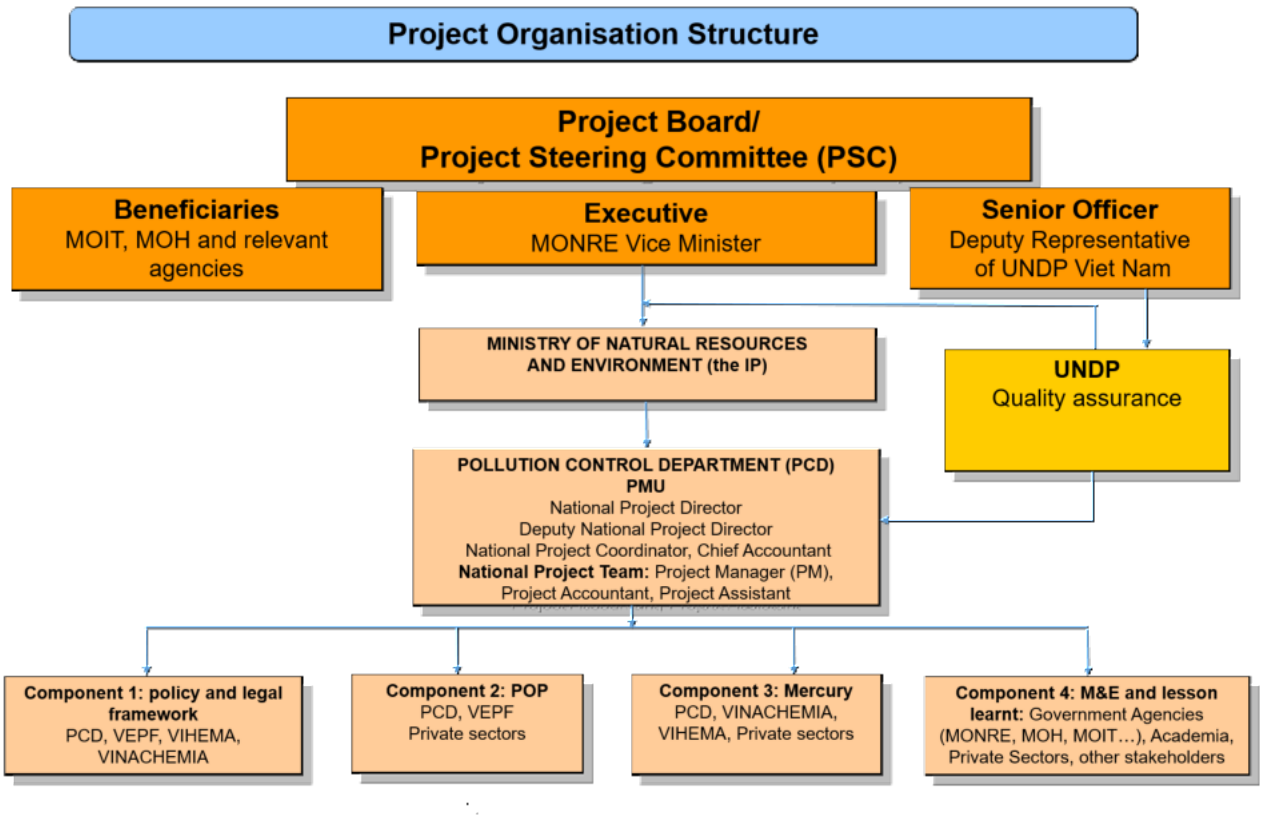
- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;

- 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 (Pollution Control Deparment), 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 Director (NPDD):** NPDD will be assigned responsibility to support the NPD in technical and financial aspects and other issues/contents 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 Coordinator (NPC):** NPC 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) **Chief Accountant:** Chief Accountant will be assigned to be in-charge to support PMU in project accounting work. The Chief Accountant will not be paid by the project but will represent a government in-kind contribution to the project.

e) **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 finance through a GEF grant of the project is USD 4,600,050 administered by UNDP.

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
Pollution Control Department–MONRE	In cash	112,641	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 (Pollution Control Department)	Project team and UNDP will monitor co-financing and ensure transition to relevant agency.
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.
Co-financing in kind: Including working office, equipment, factories, infrastructure, technology, raw materials etc.,) from units: Pollution Control Department, MONRE; Vietnam Chemicals Agency, Ministry of Industry and Trade; Health Environment Management Agency, Ministry of Health; Vietnam Plastics Association; Vietnam Corrosion Association; Vinafoam vietnam Co., Ltd; Vietnam Environment Protection fund, MONRE. During the project implementation, Pollution Control Department under MONRE is responsible for synthesizing the report on co-financing in kind to serve the project.					

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=default.

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**	

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. Letter of financial commitments
11. GEF Core indicators
12. GEF Taxonomy
13. Partners Capacity Assessment Tool and HACT assessment
14. UNDP Project Quality Assurance Report (to be completed in UNDP online corporate planning system)

Other Annexes

15. Green Financing in Vietnam
16. Cost of air pollution treatment technology for small enterprises in Vietnam
17. Preliminary list of industries for the survey
18. 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.

Appendix A: Indicative Project Budget Template

Expenditure Category	Detailed Description	Component (USDeq.)					Sub-Total	KM	M&E	PMC	Total (USDeq.)	Responsible Entity
		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.		***Component 2: Lifecycle management of POP s and PTS containing products:***		***Component 3: Mercury: lifecycle management of mercury containing products***						(Executing Entity receiving funds from the GEF Agency)[1]
		Outcome 1.1 Environmental regulation upgraded to include new POPs; Ecolabel and related policies on POPs and mercury lifecycle management developed and implemented.	*Outcome 1.2. Development of a Green Finance Framework, to sustain the shifting of enterprises toward a non-POPs and a non-Mercury manufacturing*	*Outcome 2.1 Sustainable manufacture and design of plastic, polymers, paint, metal finishing and other products improved to prevent the use of POP and the release of POP in the environment.*	*Outcome 2.2 Closure of the gap between recyclers and industry to sustain circular economy and to prevent the contamination of recyclable materials.*	*Outcome 3.1 Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management.*						
Goods	IC equipment									15,000	15,000	e.g. Ministry of Environment
Contractual Services – Individual	Translation services	13,200	7,200	66,000	12,000	15,000	113,400				113,400	
Contractual Services – Company	Analytical lab services			34,000	16,000		50,000				50,000	
	Company/es to supply and install industrial equipment including technical assistance			527,510			527,510				527,510	
	Company/es to supply and install Air Pollution Control System to reduce mercury and U-POPs including technical assistance			606,071			606,071				606,071	
	companies to arrange and carry out 4 training events for trainers for representatives of 100 healthcare facilities					40,000	40,000				40,000	
	Companies to arrange and carry out 4 training for trainers for representatives of 200 offices					40,000	40,000				40,000	
	Company/es to replace 20,000 fluorescent lamp with LED and package replaced lamp pending disposal					300,000	300,000				300,000	
	Company/es to replace10,000 mercury thermometer with electronic thermometer and package the replaced thermometers pending disposa					250,000	250,000				250,000	
	A company to 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 faciility					380,000	380,000				380,000	
	A firm to establish and maintain a project website, project database, publication and broadcasting of project materials						0	25,000			25,000	
	Professional services for financial audit						0		10,000		10,000	
International Consultants	International consultant on Green Financing and Procurement		81,900				81,900				81,900	
	International consultant on Gender Mainstreaming	13,000	9,750	26,000		3,250	52,000				52,000	
	International consultant on POPs	14,950	35,750				50,700				50,700	
	International consultant on Mercury	29,250					29,250				29,250	
	International consultant on Environmental Regulation	32,500					32,500				32,500	

	International consultant on Air Pollution Control Systems			123,500			123,500				123,500	
	International consultant on POPs and mercury in manufacturing sector			191,100			191,100				191,100	
	International consultant on POPs in waste and secondary materials				22,100		22,100				22,100	
	International consultants on analytical methods for POPs				9,750		9,750				9,750	
	International consultants on mercury and mercury waste					83,200	83,200				83,200	
	International consultant on Inception, Monitoring & Evaluation						0		57,200		57,200	
	International consultant on Knowledge Management						0	13,000			13,000	
Local Consultants	Local consultants on Green Financing and Procurement		164,000				164,000				164,000	
	Local consultants on Gender Mainstreaming	25,000	6,000			4,000	35,000				35,000	
	Local consultant on POPs	28,000		28,000			56,000				56,000	
	Local consultant on Mercury	30,800					30,800				30,800	
	Local consultants on Environmental Regulation	118,000					118,000				118,000	
	Local consultant on Air Pollution Control Systems			91,000			91,000				91,000	
	Local consultant on POPs and mercury in manufacturing sector			179,000			179,000				179,000	
	Local consultant on POPs in waste and secondary materials				21,000		21,000				21,000	
	Local consultants on analytical methods for POPs				6,000		6,000				6,000	
	Local consultants on mercury and mercury waste					156,400	156,400				156,400	
	Local consultant on Inception, Monitoring & Evaluation (including monitoring of Gender Mainstreaming)						0		63,000		63,000	
	Local consultant on Knowledge Management						0		42,000		42,000	
Salary and benefits / Staff costs	Project manager						0			97,359	97,359	
	Project assistants						0			56,610	56,610	
	Project accountant cum translator						0			56,610	56,610	
Trainings, Workshops, Meetings	One small workshop on the draft law on new POPs	1,800					1,800				1,800	
	One international workshop on the achievements related to regulation on new POPs and EPR	14,950					14,950				14,950	
	Two consultation workshops on gender specific personal protection and risk management measures against exposure to mercury	3,600					3,600				3,600	
	One international workshop on the launching of the Green Financing mechanism in Vietnam		14,950				14,950				14,950	
	One national level workshop on to introduce the achievement of the piloting related to Green procurement		14,950				14,950				14,950	
	One consultation workshop on green procurement and women entrepreneurships		1,800				1,800				1,800	
	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)			14,950			14,950				14,950	

	An international event on the selection of industries awarded under the GF or their project on POPs avoidance or release reduction			14,950			14,950				14,950	
	Two consultation workshops on gender specific aspects related to POPs in manufacturing processes and products.			3,600			3,600				3,600	
	One consultation workshop among female workers and gender experts in the gap closure between recyclers and manufacturing industry				1,800		1,800				1,800	
	Two training events on gender specific aspects related to risk prevention in waste management enterprises					3,600	3,600				3,600	
	Two consultation workshops on gender specific aspects related to the elimination of POPs equipment and products in healthcare facilities and offices					3,600	3,600				3,600	
	An international workshop on to summarize work, achievement and lesson learnt on the mercury component of the project					14,950	14,950				14,950	
	Inception Workshop						0		14,950		14,950	
	Meetings of the Project Steering Committee								12,000		12,000	
Travel	**National travel**	17,640	13,440	29,400	2,940	14,280	77,700		9,240		86,940	
	International travel	15,900	26,500	37,100	5,300		84,800		15,900		100,700	
Grand Total		358,590	376,240	1,972,181	96,890	1,308,280	4,112,181	38,000	224,290	225,579	4,600,050	

[1] In exceptional cases where GEF Agency receives funds for execution, Terms of Reference for specific activities are reviewed by GEF Secretariat

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

Social and Environmental Screening Template

(2021 SESP Template, Version 3.2)[1]

Project Information

Project Information	
1. Project Title	Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel
2. Project Number (i.e. Atlas project ID, PIMS+)	UNDP PIMS ID 6491 GEF ID 10519
3. Location (Global/Region/Country)	Vietnam
4. Project stage (Design or Implementation)	Design (PPG)
5. Date	20 September 2021

Part A. Integrating Programming Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Programming Principles in Order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the project mainstreams the human rights-based approach

Based on Article 25, of the UN Human Right Declaration "*Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family*". A healthy environment should be considered as a pre-condition for the full enjoyment of human right. Thus, this project aims at reducing the risk for the environment and human health through the prevention of the use and release of very toxic substances (persistent organic pollutants). The centrality of human rights underlies the Project goals and objectives towards environmental sustainability and in the safeguarding of human health and the environment globally as well as locally, through reducing the impact and release of mercury and POPs and addressing associated issues within a life cycle management approach. All Project activities are focused directly to reducing the impact and release of mercury and POPs, the environmentally sound management of mercury and POPs.

Adequate mercury and POPs management in Vietnam is a necessary condition for the well-being of its people in general, but especially for those whose daily activities require being exposed to these substances. This includes waste collectors and recyclers, and people working in formal recycling industries. The human rights-based approach as the key engagement principle in pursuing development outcomes, particularly environmental rights in terms of living in healthy environment, is mainstreamed by meaningful, effective and informed participation of the project stakeholders and communities in the formulation/ design, implementation, monitoring and evaluation of Project's outputs and impact.

[1] *The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document at the design stage. Note: this template will be converted into an online tool. The online version will guide users through the process and will embed relevant guidance.*

The design of this project involved a wide range of stakeholders. Consultation workshops/ meetings have been conducted with a wide range of key stakeholders to evaluate ministries, cities/ provinces, communities and enterprises to explore their engagement during project implementation. Such consultations, cooperation and coordination efforts generated stakeholder engagement for the project implementation phase. Such consultations will also assure the interest of potentially marginalized individuals and groups are considered in the process of revision of legislations and enforcement.

The streamline of the human rights based-approach will continue to be priority in the project implementation phase, as the project will be targeting awareness and consultation initiatives at the local level in particular to workers/ communities where real or perceived potential impacts may be felt, particularly among those who may have direct exposure to mercury and POPs containing or contaminated areas and that consultation with them on measures being implemented to protect them be emphasized.

Furthermore, the project will also work in designing/improving policies, capacity building for management and public awareness, with great potentials to further reduction of the targeted chemicals releases. The project will develop some specific law, regulations, and technical standards, for guiding and regulating targeted industries to reduce the risks of human and environmental exposure to POPs and Mercury in the daily life, as well as promote the environmentally sound management of stocks and end-of-life contaminated products in a way that the project manages all risks related to disposal.

Briefly describe in the space below how the project is likely to improve gender equality and women's empowerment

Vietnam has a gender mainstreaming policy vision and framework in place, with the country having developed several Gender Policy Concept Papers (such as Law on Gender Equality, Labour Law, Vocational Education Law) and a National Strategy to achieve gender equality. Therefore, no structural or cultural obstacle are expected to hinder the gender mainstreaming related project policies and activities. The national development benefits, equal for men and women, will be elimination of a major national priority mercury and POPs related environmental problem, development of national institutional and technical capability related to the management of hazardous waste (HW), contaminated areas and perhaps most significantly the use of the project to stimulate the development of a national HW management capacity.

By reducing the Mercury and POPs release in waste processing and the environmentally sound destruction of mercury and POPs containing products in this project, health risks for workers, particularly the female workers and their children will be reduced from exposure of mercury and POPs, leading to ameliorated health situation for them. Reducing the impact and release of mercury and POPs from the Project's subject site will work as an important positive externality for women's reproductive health.

Gender mainstreaming targets will be considered as core project targets. A detailed Gender Mainstreaming Plan (GMP), with budget and indicators, has been developed and integrated in the project for implementation. The gender mainstreaming work plan includes issues such as: initiatives of gender-specific training and awareness raising; 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 mercury and POPs generated by recycling activities; specific health and safety rules for female employees in the waste collection and recycling industries. Women's civil society organizations, Environmental NGOs, and advocacy groups actively participated in the design of the project.

During implementation, the project will address the priority concerns of vulnerable groups including female workers, Ethnic Minorities (EM) people, and the poor to assess and strengthen capacity to reduce mercury and POPs impact and release sensitive streams. The project will ensure female participation in the related activities of training and capacity building. In addition, there will be overarching interventions – awareness rising and multi-stakeholder's participation – that will contribute to ensuring the successful implementation of gender mainstreaming.

Briefly describe in the space below how the project mainstreams sustainability and resilience

The project is designed to respond to the requirements of the Stockholm Convention (to reduce the risks of POPs) and the Minamata Convention (to eliminate the use of Mercury) for the benefit of human health and the environment. The project also aims to ensure the implementation of Best Available Techniques and Best Environmental Practices (BAT/BEP) in selected demonstration enterprises. The social and environmental impacts of this project are the basic pillars to ensure future sustainability and resilience. With this respect, the following is considered as integral part of the Project:

1) **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."** This component entails the setting and enforcement of rules to restrict the import, use and placing on the market of POPs. This will result in reduced transport, handling and exposure levels of workers and consumers to POPs at all stages. Under this component, the regulatory tool to reduce the circulation and release of POPs at any stage will be established. Therefore, this will result in a net decrease of environmental risk, or, in the worst case (project failure), zero change compared to the baseline. For mercury, the project is going to establish a roadmap aiming at banning the import and placing on the market mercury containing products, and to establish rules for the proper waste management of mercury. Vietnam has ratified both the Stockholm Convention and the Minamata Convention – therefore the restrictions aimed at banning import manufacturing and use of POPs and mercury must be implemented. Role of the project is therefore to ensure that such regulation will be properly implemented and enforced, and that the enterprises and communities will be provided with the needed technical and financial support. Finally. a Green Financing mechanism, aimed at supporting initiatives to phasing out POPs and mercury, will be established with the support of public and private financial institutions, assuring scale up and long term sustainability of the project´s initiatives.

2) **Component 2 "Roadmap on POPs and mercury established will be supported, implemented and demonstrated.** Technical and financial support to sustainable manufacturing and design of products to prevent the use and release of POP, including the installation of Air Pollution Control Systems (APCS) to reduce U-POPs and mercury emission will be promoted; The networking between recyclers and manufacturers, to ensure that, from one side, recyclers can access an higher quality market, by taking part in take-back or collection schemes aimed at ensure that the quality of the recycled material fulfil the needs of the industry; and manufacturers could have access to recyclable resources to replace virgin materials will be carried out.

3) **Component 3 "Replacement of mercury equipment (thermometers and sphygmomanometers), mercury lamps, their safe collection, measures to prevent or address mercury spillage, and management and disposal of mercury waste**. The project will deploy measures to reduce the risk for health and environment associated with mercury disposal activities that are already occurring in Vietnam by strengthening regulatory framework and deploying BEP to reduce/avoid the risks concerning the collection and disposal of wastes by reducing the level of indoor exposure of the general population to mercury, supporting the establishment of procedures or equipment for the reduction of mercury emission from industrial facilities, properly disposing mercury containing equipment with either segregation and recovery of mercury from the non-hazardous waste, or through long-term immobilization as per international standards, and in compliance with the national rules.

The projects activities will become integral part of an effective sound chemicals management scheme with institutional, financial and environmental long-term sustainability; 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. The project will address chemical waste at the end of life, chemicals that are used or emitted from processes or products, and waste management; The project aims to mainstream environmental sustainability by reducing the impact and release of mercury and POPs, to protect human and environmental health. Thus, the project contributes to the prevention of waste/ products containing POPs from entering material recovery supply chains, elimination of the use of mercury and POPS in products through introduction of alternatives in the products with a preference to non-toxic chemicals, introduction and use of best available techniques and best environmental practices to minimize and ultimately eliminate releases of UPOPs and mercury from major source categories included in both the Stockholm and Minamata Convention;

Briefly describe in the space below how the project strengthens accountability to stakeholders
• The project envisages five approaches at all stages of the project cycle: (1) Sharing of Information; (2) Consultations (including surveys); (3) Participation; (4) Feedback; and (5) Learning and Adaptation (including from monitoring and evaluation). • Despite of the restrictions associated with the COVID-19 pandemic and social distancing, many consultation meetings (offline and online) were held with project stakeholders during the design phase. • Stakeholders involved in the project include ministries and regulatory agencies in the areas of management of substances containing POPs, and Mercury; financial institutions involved in supporting the Green Finance Frame; businesses interested in financial support from the project and environmental certifications. NGOs working in the field of the environment, which is their area of interest, have experience in communication and in mobilizing people to participate. • During these stakeholder consultation meetings, stakeholders and beneficiaries as well as partner organisations were introduced to relevant information on issues related to: the proposed project (objectives, approaches, budget, staffing and contact details), what they should expect from project and UNDP (in terms of information, participation, respect etc.), and how to lodge a complaint with project and UNDP. Stakeholders are consulted on matters that directly affect them, especially in relation to the project. The consultations followed the principle of obtaining free, prior and informed consent (FPIC) from communities and men and women as stated in UNDP policy. • Consulting stakeholders also enables the project to gain a greater understanding from stakeholders of their views, capabilities, needs and concerns. After consultations and surveys are conducted, follow up activities are concerned with feedback sessions to share the results and discuss the findings. • The Stakeholder Analysis and Engagement Plan was built based on UNDP and GEF Guidelines. The stakeholder analysis provides a further opportunity to develop project team's ideas around who are the rights-holders and other stakeholders, what their interests are, whether the impact will be positive or negative, and how to engage them. The Stakeholder Engagement Plan be publicly available in a form and language appropriate to the relevant stakeholders and disseminated proactively to them. • The project also includes awareness-raising activities to encourage stakeholders to participate in the project, and appropriate forms of participation. • Component 4 of the project, Monitoring and Evaluation, will establish indicators to facilitate successful project implementation and sound impact assessment. Project and its activities will be monitored and evaluated on a periodic basis in line with GEF, UNDP and government requirements. The project will try to encourage the participation of stakeholders in the monitoring and evaluation process if possible, in order to improve the independence and accuracy of monitoring information.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Complete SESP Attachment 1 before responding to Question 2.*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5 below before proceeding to Question 5*			**QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High**
Risk Description (broken down by event, cause, impact)	***Impact and Likelihood (1-5)***	***Significance (Low, Moderate Substantial, High)***	***Comments (optional)***	***Description of assessment and management measures for risks rated as Moderate, Substantial or High***
Risk 1: Duty-bearers, and other relevant stakeholders do not have the capacity to meet their obligations in the project **Related to risks:** - Human Rights: P2, P5	I = 4 L = 2	**Moderate**	(a) The project will develop and/or propose updated regulatory framework in Component 1, thus Officials, responsible for enforcing legislation, may lack capacities to acknowledge and enforce these. (b) Banks and financial institutions may not have adequate competence in establishing green financial mechanisms for mercury and POPs reduction activities. (c) Banks and financial institutions may lack understanding on concept of green financial criterion towards chemicals industries. (d) Banks and financial institutions, may not have ample capital to fulfill their commitments to provide financial support to businesses.	**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 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 2: Adverse impacts on workers in the recycling sector who could not be included in the project activities **Related to risks:** - Human Rights: P5 - Accountability: P13, P14 - Standard 7: Labour and Working Conditions: 7.5	I = 4 L = 2	**Moderate**	Per Local Regulations, hazardous wastes must be specially managed, so engagement of natural persons or waste-pickers cooperatives (used to work in municipal solid waste streams) is not accepted by the Project. Recycling and treatment activities of hazardous (chemicals/mercury contained) wastes can only be carried out by Formal Companies licensed by the Ministry of Natural Resources and Environment to comply with strict regulations. Therefore: (a) Workers employed by the Recycling Companies, and with major risk of exposure, may feel excluded from participating in project decision processes. (b) Individuals (or cooperative) recyclers may feel marginalized by the project and may feel losing opportunities to increase their income as hazardous (chemicals and mercury-contained) waste are not included in their solid waste collection streams.	**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. (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. **Related to risks:** - Accountability: P13, P14 - Standard 5; 5.2. - Standard 8: Pollution Prevention and Resource Efficiency: 8.1; 8.2; and 8.3	I = 3 L = 2	**Moderate**	The Stockholm Convention and the Minamata Convention impose restrictions on the use and import of POP Chemicals and Mercury. In the baseline, through Viet Nam is Party to the above, some Chemicals not yet regulated (PFOS and SCCP) will be integrated in the Regulatory Framework of Component 1. Therefore, is expected that industries may experience technical and economic challenges in finding affordable alternatives, and hence have income/revenue affected. Experience from similar projects in other Countries (supported by the GEF) shows that such initial disruption and revenue loss tends to be of a temporary nature, since the supply chain in other countries also need to comply with the same Convention. However, is acknowledge that SMEs require special support to strengthen their competitive positioning in the medium term.	**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 **Related to:** - Gender Equality and Women's Empowerment; P.10	I= 3 L= 2	**Moderate**	In general, the recycling industry require high level of physical work, which by sex-driven perception is seen as a "work for men". This perception also exists in other industries that utilize controlled chemicals in their production process, as mostly are seen as "heavy industries". In addition, for the recycling sector, women are mainly engaged in initial separation phases of the products and this may be directly exposed to some harmful substances that are released in this process. For the production industries, women workforce may be inserted in several stages of the process, including at managerial areas and in areas that require specialized skill (such as Laboratory Technicians).	**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.

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. **Related to risks:** - Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management; 1.1, 1.7, 1.14 - Standard 3: Community Health, Safety 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	I = 4 L = 2	**Moderate**	Transport, storage and disposal operations for mercury thermometers, phased-out fluorescent lamps, amalgams and APC filters may pose potential human and ecosystem health risks, whether to workers or the wider community or to the local environment due to accidental release or spills. Packing, transporting, storage and disposal of such waste stream must follow international Standards which are usually paired with National Regulation, and include packing individually, so the amount of mercury which can be released in case of accident will be minimal (milligrams in case of mercury lamps and fraction of grams in case of thermometers), so the impact is also limited. The very core objective of the project is to reduce the social, health and environmental risks in transport, storage, use and release of POPs and mercury containing equipment. So the project will thoroughly apply such Regulations, Guidelines, Standards and Best Practices to avoid the risk.	**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. (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. <u>For the Industries that will participate in BAT/BEP Demonstration Activities</u>: 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 <u>no Heritage/Cultural Sites in these areas, therefore, Standard 4 is not triggered</u>. (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 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 **Related to risks:** - Standard 2: Climate Change and Disaster Risks, 2.2	I = 4 L = 2	**Moderate**	Increased weather events due to climate change may increase the risk of flooding which, in turn, may impact the mercury treatment and storage facilities. Mercury treatment and storage facilities are	**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.

			mostly located in industrial zones, where the impact of climate change, sea level rise and other extreme weather events are usually taken into consideration in their planning, and where mitigation activities were already developed. Vietnam is a country that is likely to be greatly affected by climate change, 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.	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 in the activities of handling, treatment, transport between facilities, storage, recycling, disposal or testing of substances and wastes contained-chemicals. **Related to risks:** - Standard 3: Community Health, Safety and Security: 3.2 and 3.5 - Standard 7: Labour and Working Conditions, 7.1, 7.2, 7.5, 7.6	I = 4 L = 2	**Moderate**	This risk related to the potential practices and behaviours of workers that do not abide by a safety protocol and use the essential personal protective equipment (PPE) appropriate for the work they perform. In addition, health and safety of workers may be impacted during establishment of the treatment facility, if proper measures are not implemented including wearing PPE. It is noted that regulations on health and working environment are strictly implemented in formal urban environment companies in industrial zones in the suburban areas of big cities like Hanoi and Ho Chi Minh City. There have been no incidents affecting the health of workers reported so far. If the project fails, the workers employed by recycling industries who participate in the project may continue to be at risk of exposure to POPs. If not specifically addressed, persons below 18 years of age in the recycling industry may be engaged in hazardous	**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> (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

			work, which is classified as "worst forms of child labour". In addition, persons younger than 15 years old may also be employed or allowed to work in these sectors.	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. 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: Increased GHG emissions or consumption of raw materials, energy, water… **Related to risks:** **-** Standard 2: Climate Change and Disaster Risks: 2.4 - Standard 8: Pollution Prevention and Resource Efficiency: 8.1, 8.2 and 8.3	I = 2 L = 2	**Low**	Usually, new technologies and controls result in reduction of use in raw materials as well as improved energy efficiency. If the project fails, the baseline technologies will continued to be used, therefore baseline emission and raw materials use will continue. Thus, this risk is duly considered, though rated "LOW".	**This risk is being addressed/mitigated by Project Design. (Components 2, and 33)** 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.

	QUESTION 4: What is the overall project risk categorization?		
	Low Risk	☐	
	Moderate Risk	☐	
	Substantial Risk	X	The screening has identified 8 risks related to this project, one categorized as Low (Risk 8) and seven categorized as Moderate (1 to 7). Considering that funds are made available after CEO Endorsement, conditions during the PPG phase were not conducive to finalize selection of demonstration enterprises, as no formal engagement is possible. **Hence, as a precautionary measure, the overall risk categorization for this project is determined to be Substantial.** Therefore, a series of Risk Mitigation/Avoidance Mechanism are being proposed in line with the SES Policy: (a) Preparation of ESIAs to assess potential social and environmental impacts of a proposed project demonstration activities under Components 2 and 3 (Risks 5, 6 and 7) (b) Prior to the CEO Endorsement (and Project Document signature) to develop scoped ESMP to mitigate and monitor any potential interconnections of Risks 2, 4, 5, 6, 7 and 8 (mostly related to the formalization of the selection of demonstration companies pre-screened during PPG phase. (c) Spill Prevention and Management Plan for Risks 5 and 6. (d) Occupational Health and Safety Assessment for Risk 7. (e) Risk Management Strategy sound management of mercury stockpiles and obsolete mercury-containing equipment (Risk 5) (f) (Jobs Retrenchment) Restructuring Plan, under Risk 2, **If** retrenchment is found to be unavoidable for certain industries, a will be developed and implemented. Some of the risks have also been addressed through the project's design: including a Stakeholder Engagement Plan as well as a Gender Action Plan have already been prepared. A Grievance Redress Mechanism will be set up for the project (per the Stakeholder Engagement Plan).
	High Risk	☐	

QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)				
Question only required for Moderate, Substantial and High Risk projects				
Is assessment required? (check if "yes")	☐			***Status? (completed, planned)***
if yes, indicate overall type and status		☒	Targeted assessment(s) *Occupational Risk Assessment*	 Planned
		☒	ESIA (Environmental and Social Impact Assessment)	Planned
		☐	SESA (Strategic Environmental and Social Assessment)	
Are management plans required? (check if "yes")	☒			
If yes, indicate overall type		☒	Targeted management plans *Gender Action Plan* *Stakeholder Engagement Plan* *Risk Management Strategy (Mercury Waste)* *Spill Prevention and Mgt. Plan* *Restructuring (Jobs) Plan*	 Completed Completed Planned Planned If needed
		☒	ESMP (Environmental and Social Management Plan which may include range of targeted plans)	Planned
		☐	ESMF (Environmental and Social Management Framework)	
Based on identified risks, which Principles/Project-level Standards triggered?		**Comments (not required)**		
Overarching Principle: Leave No One Behind				
Human Rights	☒			
Gender Equality and Women's Empowerment	☒			
Accountability	☒			
1. Biodiversity Conservation and Sustainable Natural Resource Management	☒			
2. Climate Change and Disaster Risks	☒			
3. Community Health, Safety and Security	☒			
4. Cultural Heritage	☐			
5. Displacement and Resettlement	☒			
6. Indigenous Peoples	☐			
7. Labour and Working Conditions	☒			
8. Pollution Prevention and Resource Efficiency	☒			

Final Sign Off

Final Screening at the design-stage is not complete until the following signatures are included

Signature	***Date***	***Description***
QA Assessor		UNDP staff member responsible for the project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
INSTRUCTIONS: The risk screening checklist will assist in answering Questions 2-6 of the Screening Template. Answers to the checklist questions help to (1) identify potential risks, (2) determine the overall risk categorization of the project, and (3) determine required level of assessment and management measures. Refer to the SES toolkit for further guidance on addressing screening questions.		
Overarching Principle: Leave No One Behind **Human Rights**		**Answer (Yes/No)**
P.1	Have local communities or individuals raised human rights concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	*No*
P.2	Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?	*Yes*
P.3	Is there a risk that rights-holders (e.g. project-affected persons) do not have the capacity to claim their rights?	*No*
Would the project potentially involve or lead to:		
P.4	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	*No*
P.5	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities? [2]	*Yes*
P.6	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities?	*No*
P.7	exacerbation of conflicts among and/ or the risk of violence to project-affected communities and individuals?	*No*
Gender Equality and Women's Empowerment		
P.8	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g. during the stakeholder engagement process, grievance processes, public statements)?	*No*
Would the project potentially involve or lead to:		
P.9	adverse impacts on gender equality and/or the situation of women and girls?	*No*
P.10	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	*Yes*
P.11	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being*	*No*
P.12	exacerbation of risks of gender-based violence? *For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc*.	*No*
Sustainability and Resilience: Screening questions regarding risks associated with sustainability and resilience are encompassed by the Standard-specific questions below		

[2] Prohibited grounds of discrimination include race, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender and transsexual people.

Accountability		
Would the project potentially involve or lead to:		
P.13	exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decisions that may affect them?	*Yes*
P.14	grievances or objections from potentially affected stakeholders?	*No*
P.15	risks of retaliation or reprisals against stakeholders who express concerns or grievances, or who seek to participate in or to obtain information on the project?	*No*
Project-Level Standards		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
Would the project potentially involve or lead to:		
1.1	adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	*Yes*
1.2	activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	*No*
1.3	changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	*No*
1.4	risks to endangered species (e.g. reduction, encroachment on habitat)?	*No*
1.5	exacerbation of illegal wildlife trade?	*No*
1.6	introduction of invasive alien species?	*No*
1.7	adverse impacts on soils?	*Yes*
1.8	harvesting of natural forests, plantation development, or reforestation?	*No*
1.9	significant agricultural production?	*No*
1.10	animal husbandry or harvesting of fish populations or other aquatic species?	*No*
1.11	significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	*No*
1.12	handling or utilization of genetically modified organisms/living modified organisms?[3]	*No*
1.13	utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)[4]	*No*
1.14	adverse transboundary or global environmental concerns?	*Yes*
Standard 2: Climate Change and Disaster Risks		
Would the project potentially involve or lead to:		
2.1	areas subject to hazards such as earthquakes, floods, landslides, severe winds, storm surges, tsunami or volcanic eruptions?	*No*
2.2	outputs and outcomes sensitive or vulnerable to potential impacts of climate change or disasters?	*Yes*

[3] See the Convention on Biological Diversity and its Cartagena Protocol on Biosafety.

[4] See the Convention on Biological Diversity and its Nagoya Protocol on access and benefit sharing from use of genetic resources.

	For example, through increased precipitation, drought, temperature, salinity, extreme events, earthquakes	
2.3	increases in vulnerability to climate change impacts or disaster risks now or in the future (also known as maladaptive or negative coping practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	*No*
2.4	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	*Yes*
Standard 3: Community Health, Safety and Security		
Would the project potentially involve or lead to:		
3.1	construction and/ or infrastructure development (e.g. roads, buildings, dams)? (Note: the GEF does not finance projects that would involve the construction or rehabilitation of large or complex dams)	*No*
3.2	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	*Yes*
3.3	harm or losses due to failure of structural elements of the project (e.g. collapse of buildings or infrastructure)?	*No*
3.4	risks of water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	*Yes*
3.5	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	*Yes*
3.6	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g. food, surface water purification, natural buffers from flooding)?	*No*
3.7	influx of project workers to project areas?	*No*
3.8	engagement of security personnel to protect facilities and property or to support project activities?	*No*
Standard 4: Cultural Heritage		
Would the project potentially involve or lead to:		
4.1	activities adjacent to or within a Cultural Heritage site?	*No*
4.2	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	*No*
4.3	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	*No*
4.4	alterations to landscapes and natural features with cultural significance?	*No*
4.5	utilization of tangible and/or intangible forms (e.g. practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	*No*
Standard 5: Displacement and Resettlement		
Would the project potentially involve or lead to:		
5.1	temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?	*No*
5.2	economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	*Yes*

5.3	risk of forced evictions?[5]	*No*
5.4	impacts on or changes to land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	*No*
Standard 6: Indigenous Peoples		
Would the project potentially involve or lead to:		
6.1	areas where indigenous peoples are present (including project area of influence)?	*No*
6.2	activities located on lands and territories claimed by indigenous peoples?	*No*
6.3	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)?	*No*
6.4	the absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	*No*
6.5	the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	*No*
6.6	forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? *Consider, and where appropriate ensure, consistency with the answers under Standard 5 above*	*No*
6.7	adverse impacts on the development priorities of indigenous peoples as defined by them?	*No*
6.8	risks to the physical and cultural survival of indigenous peoples?	*No*
6.9	impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices? *Consider, and where appropriate ensure, consistency with the answers under Standard 4 above.*	*No*
Standard 7: Labour and Working Conditions		
Would the project potentially involve or lead to: (note: applies to project and contractor workers)		
7.1	working conditions that do not meet national labour laws and international commitments?	*Yes*
7.2	working conditions that may deny freedom of association and collective bargaining?	*Yes*
7.3	use of child labour?	*No*
7.4	use of forced labour?	*No*
7.5	discriminatory working conditions and/or lack of equal opportunity?	*Yes*
7.6	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	*Yes*
Standard 8: Pollution Prevention and Resource Efficiency		
Would the project potentially involve or lead to:		
8.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	*Yes*

[5] Forced eviction is defined here as the permanent or temporary removal against their will of individuals, families or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection. Forced evictions constitute gross violations of a range of internationally recognized human rights.

8.2	the generation of waste (both hazardous and non-hazardous)?	*Yes*
8.3	the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	*Yes*
8.4	the use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention*	*No*
8.5	the application of pesticides that may have a negative effect on the environment or human health?	*No*
8.6	significant consumption of raw materials, energy, and/or water?	*Yes*

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 8: Stakeholder Engagement Plan

Project Information

Project Information	
1. Project Title	Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel
2. Project Number (i.e. Atlas project ID, PIMS+)	UNDP to add PIMS ID Number / GEFID 6491
3. Location (Global/Region/Country)	Vietnam
4. Project stage (Design or Implementation)	Design (PPG)
5. Date	May 2021

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APPENDIX 17

I. STAKEHOLDER ANALYSIS

1.1. Stakeholder engagement and south-south cooperation

The project will work with the following stakeholders:

1) Governmental stakeholders. These will include the MONRE in charge of project execution as well as other ministries/administrations which role will be crucial for the implementation of specific project components and establishment of regulation and norms relevant to the restriction of the use and import of POPs in manufacturing processes, the reduction the release of mercury and U-POPs from industrial sources, and the elimination the manufacturing and use of mercury containing devices.
2) Public and private financial institutions involved in supporting the Green Finance Framework;
3) Private entities with interest in the environmental certifications.
4) Enterprises and association of enterprises which may be affected by the restriction on the use and import of industrial POPs;
5) Recyclers including enterprises, communities, and individuals
6) NGOs operating in the multiple dimensions of environment, communication, people mobilization, gender mainstreaming.

The project will engage the relevant stakeholders in different ways:

- The stakeholders who are eligible to take active part in the project (like enterprises and NGO) will be kept informed through direct contacts in workshops, awareness raising events and publication of information in the project website.
- The stakeholders who may have interest in project activity and which need to be informed because of potential positive or negative impact that the project will exert on them, will be mainly kept informed through communication tool aimed at reaching large audience, including TV broadcasting and newspapers.
- The stakeholders who have direct interest in understanding the project achievement and results, including regulatory, technological, scientific and methodological aspects, will be kept informed through regular publication of technical document and project report on the project website.

A mapping of the project engagement methodologies by target audience are reported in Table below:

Table 1: Mapping of stakeholders' engagement methodology by objective and target audience

	Project engagement methodologies, including communication					
Objectives and targeted audiences	Project website	Training AR events, Workshops, online meetings	UNDP Website	Government websites	News papers	TV broad casting
Project management office and consultants (upload/download of project documents; project monitoring and management)	Dedicated access based on user role	Dedicated training and workshop on project management				Movies on project implementation at factories and on issues related to POPs and Hg use and emissions
Communication with governmental institution (Meeting -minutes, milestones, relevant regulations, position papers etc.)	Dedicated section for project document upload/down load, with access policies	Training for decision makers, customs, regulators, researchers	Project summary. Key project reports, news and events.	Project summary. National news and events, relevant regulations Links to project website	Interviews with gov Officials, UNDP experts, national experts, industry leaders, NGOs	Interviews with gov Officials, UNDP experts, national experts, industry leaders, NGOs
Communication with interested bidders (links to national and international bidding events)	Links to the tender section and jobs		Links to the Tender section and jobs	Links to the tender section and jobs		
The general public	Public section in the Project website, communication on environment, production process, use and emissions of POPs, Hg		The UNDP website is open to the public	Project summary. National news and events, relevant regulations Links to project website	Selected news on CE, POPs, Hg Industrials sectors and project event	
Industrial partners	Training materials	Dedicated training and workshops	News related to industry and POPs, Hg			
NGOs	All the above except project management section	Dedicated training and workshops	The UNDP website is open to the public			
International expert and gov. from other projects, and other countries	All the above except Project management section	Dedicate online and in presence events for experience sharing and lesson learn	The UNDP website is open to the public	Access to the section of the gov. Website translated in English		

It should be mentioned that the project has established already at PPG stage proper coordination with UNDP Philippines and the VEA/DENR (Vietnam Environment Administration and Department of Environment and Natural Resources) to exchange views and experiences related to key topics, like the issue of POPs import, the implementation of Green Chemistry in relevant industrial sectors, the Green Financing Mechanism, etc.

1.2 Time frame and budget of the Stakeholder engagement plan throughout the project cycle

The budget for stakeholder engagement throughout the project cycle and, where applicable, for related capacity-building to support this engagement is reported in the Table below. The project has allocated an amount of 204,450 USD for such activities, plus the cost associated at the work to be undertaken by the national and international consultant for the development of technical material, which is not counted below as it has been counted under the project implementation activities. It may be however estimated that around 10% of the activity of the national and international consultant is dedicated to the preparation of training and awareness raising materials.

Table 2: Timeframe and budget for activities related to stakeholders' engagement.

Component / outcome (SE budget updated on 30/06/2021)	**22**	**23**	**24**	**25**	Budget (USD)	Description
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.						
Outcome 1.1 Environmental regulation upgraded to include new POPs; Green label and related policies for selected sectors (e.g. plastic, polymers, others) developed and implemented to reduce POP direct and secondary use, to reduce U-POP releases and to enhance circular economy.	■				$1,800.00	One small workshop on the draft law on new POPs for an overall amount of 1800
		■			$14,950.00	One international workshop on the achievements related to regulation on new POPs and EPR for an overall amount of 14950
Outcome 1.2 Environmental policy on mercury developed and implemented to replace mercury products and to enhance the management of products containing mercury at their End of Life with segregation of mercury and recycling of non-mercury components		■			$14,950.00	One international workshop on the achievements related to regulation and roadmaps on new POPs and mercury for an overall amount of 14950
						Two consultation workshops on gender specific personal protection and risk management measures against exposure to mercury for an overall amount of 3600 USD (*)
Outcome 1.3. Development of a Green Finance Framework, to sustain the shifting of enterprises toward a non-POPs and a non-Mercury manufacturing			■		$14,950.00	One international workshop on the launching of the Green Financing mechanism in Vietnam for an overall amount of 14950
		■			$14,950.00	One national level workshop on to introduce the achievement of the piloting related to Green procurement for an overall amount of 14950 USD
						One consultation workshop on green procurement and women entrepreneurships for an overall amount of 1800 USD (*)
Component 2: Lifecycle management of POP s and PTS containing products:						

Outcome 2.1 Sustainable manufacture and design of plastic, polymers, paint, metal finishing and other products improved to prevent the use of POP and the release of POP in the environment.		■			$14,950.00	An international kick-off event on the launching of financial mechanism on POPs and mercury free design to enterprises, including Desing and implementation of APCS (output 2.1.3) for an overall amount of 14950 USD
			■		$14,950.00	An international event on the selection of 5 industries awarded under the GF or their project on POPs avoidance or release reduction for an overall amount of 14950 USD
						Two consultation workshops on gender specific aspects related to POPs in manufacturing processes and products for an overall amount of 3600 USD (*)
						One consultation workshops among female workers and gender experts in the gap closure between recyclers and manufacturing industry for an overall amount of 1800 USD (*)
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.						Two training events on gender specific aspects related to risk prevention in waste management enterprises for an overall amount of 1800 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 3600 USD (*)
				■	$14,950.00	An international workshop on to summarize work, achievement and lesson learnt on the mercury component of the project for an overall amount of 14950 USD
	■	■	■	■	$40,000.00	1 Services-companies to arrange and carry out 4 training events for trainers for representatives of 100 healthcare facilities for an overall amount of 40000 USD
	■	■	■	■	$40,000.00	1 Services-companies to arrange and carry out 4 training for trainers for representatives of 200 offices for an overall amount of 40000 USD
Component 4: Knowledge management and M&E (this budget already accounted for in the KM Budget)						
Outcome 4.1 Project management team established, lesson learnt and knowledge generated by the project properly shared and communicated.	■					Inception workshop on the project with participation of other countries representatives involved in Green Chemistry for an overall amount of 14950 USD (*)
Outcome 4.1 Project management team established, lesson learnt and knowledge generated by the project properly shared and communicated.	■	■	■	■		1 Services-companies a project website, project database, publication and broadcasting of project materialsto establish and maintain for an overall amount of 25000 USD(*)
Total budget allocated to communication and stakeholder engagement					$186,450.00	

(*) these activities have been already budgeted under the Knowledge Management or Gender Mainstreaming budget, therefore the budget is not counted here..

Component / outcome	**22**	**23**	**24**	**25**	Budget (USD)	Description	Expected audience
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.							

Outcome 1.1 Environmental regulation upgraded to include new POPs; Green label and related policies for selected sectors (e.g. plastic, polymers, others) developed and implemented to reduce POP direct and secondary use, to reduce U-POP releases and to enhance circular economy.	■				$1,800	One small workshop on the draft law on new POPs	10
		■			$14,950	One international workshop on the achievements related to regulation on new POPs and EPR	50
Outcome 1.2 Environmental policy on mercury developed and implemented to replace mercury products and to enhance the management of products containing mercury at their End of Life with segregation of mercury and recycling of non-mercury components		■			$14,950	One international workshop on the achievements related to regulation and roadmaps on new POPs and mercury	50
	■	■			$3,600	Two consultation workshops on gender specific personal protection and risk management measures against exposure to mercury	20
Outcome 1.3. Development of a Green Finance Framework, to sustain the shifting of enterprises toward a non-POPs and a non-Mercury manufacturing			■		$14,950	One international workshop on the launching of the Green Financing mechanism in Vietnam	50
		■			$14,950	One national level workshop on to introduce the achievement of the piloting related to Green procurement	30
	■				$1,800	One consultation workshop on green procurement and women entrepreneurships	10
Component 2: Lifecycle management of POP s and PTS containing products:							
Outcome 2.1 Sustainable manufacture and design of plastic, polymers, paint, metal finishing and other products improved to prevent the use of POP and the release of POP in the environment.		■			$14,950	An international kick-off event on the launching of financial mechanism on POPs and mercury free design to enterprises, including Desing and implementation of APCS (output 2.1.3)	50
			■		$14,950	An international event on the selection of 5 industries awarded under the GF or their project on POPs avoidance or release reduction	100
	■	■			$3,600	Two consultation workshops on gender specific aspects related to POPs in manufacturing processes and products	50
		■			$1,800	One consultation workshops among female workers and gender experts in the gap closure between recyclers and manufacturing industry	20
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.					$3,600	Two training events on gender specific aspects related to risk prevention in waste management enterprises	50
					$3,600	Two consultation workshops on gender specific aspects related to the elimination of POPs equipment and products in healthcare facilities and offices.	50
					$14,950	An international workshop on to summarize work, achievement and lesson learnt on the mercury component of the project	100
					$40,000	1 Services-companies to arrange and carry out 4 training events for trainers for representatives of 100 healthcare facilities	200
					$40,000	1 Services-companies to arrange and carry out 4 training for trainers for representatives of 200 offices	400
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.					$14,950	Inception workshop on the project with participation of other countries representatives involved in Green Chemistry	50
Outcome 4.1 Project management team established, lesson learnt and knowledge generated by the project properly shared and communicated.					$25,000	1 Services-companies a project website, project database, publication and broadcasting of project materials to establish and maintain	100,000
Total budget allocated to communication and stakeholder engagement					$204,450		

(*) these activities have been already budgeted under the Knowledge Management or Gender Mainstreaming budget, therefore the budget is not counted here.

2.2. Stakeholders

Stakeholders include ministries, businesses, NGOs, and waste disposal parties. As follows:

2.2.1. Governmental stakeholders

1. Ministry of Industry and Trade (MOIT)

The Ministry of Industry and Trade is responsible for promulgating documents on management of chemicals directly related to mercury in the following fields:

- General management of chemicals
- Management and control of mercury in mining activities, including gold mining;
- Manage and control import and export activities of mercury and mercury-containing products for industry,
- Manage and control the production of mercury-containing products in the following industries: batteries, lighting equipment, electrical/electronic equipment, paints, cosmetics...;
- Management of industries that use materials containing mercury/mercury compounds (thermal power using coal/petroleum/biogas; refining oil/natural gas; producing steel, cement) ...);

- Management of trade in mercury and industrial products containing mercury; - Control the generation of hazardous waste, wastewater and exhaust gas. Legal documents related to mercury management and control are drafted and promulgated by the Ministry of Industry and Trade, specifically:
- Regulations on chemical registration
- Regulations on import and export of industrial chemicals
- Regulations on classification and labeling of chemicals, registration of chemical use,
- Lists of banned chemicals, chemicals restricted from production, chemicals subject to conditional production and business, chemicals that must be declared, and chemicals subject to a plan. In order to prevent and respond to incidents and hazardous chemicals, it is necessary to build a control sheet for the purchase and sale of...
- Regulations on conditions for production and trading of conditional chemicals, restricted chemicals, banned chemicals...
- Controlling the trading of toxic chemicals, chemical safety
- Administrative sanctions for violations of regulations on chemical management.

2. Ministry of Natural Resources and Environment (MONRE)

The Ministry of Natural Resources and Environment has conducted statistical surveys and assessment of status of storage points of chemicals in POP Pesticide list in the whole territory of Vietnam. Develop a national plan for the treatment of POP Pesticide-related persistent pollution sites based on a risk assessment

Improving mechanisms, policies and laws on management of persistent POPs organic pollutants, in which:

- Develop a circular on safe management and minimization of persistent organic pollutants in industrial production
- Develop technical guidance on emission inventory and environmental protection for industrial production activities using persistent organic pollutants.
- Develop technical guidance on monitoring and assessment of pollution, environmental risks and residues of some persistent organic pollutants used in agriculture
- Develop technical guidance on inventory and assessment of risks to the environment due to the release of some persistent organic pollutants that arise unintentionally from industrial production activities.

MONRE issues legal documents on management and control of mercury-related pollution in the following areas:

- Environmental quality of air, water resources, soil and sediment.
- Hazardous solid waste, wastewater, exhaust gas discharge/emission into the environment. - Import and export of scrap and recycled waste;
- Contaminated lands;
- Residual chemicals…

Regulations on environmental protection and pollution control related to mercury are issued by MONRE by including the following legal instruments:

- General regulations on environmental protection:
- Regulations on chemical pollution control:
  - o Maximum allowable limits of pollutants (including mercury) in the environment: air, soil, water, sediment,
  - o Requirements on environmental monitoring of water, air… according to QCVN 30:2012/BTNMT;
  - o Hazardous waste management
- Administrative sanctions for violations of waste management, wastewater, emission of pollutants into the air, water and soil environment...

3. Ministry of Health (MOH)

Areas under the management of the Ministry of Health related to mercury:

- Insecticidal and germicidal preparations in household and medical fields;
- Chemicals used for the purpose of protecting human health: dental amalgam...;
- Medical equipment containing mercury: mercury thermometer, mercury sphygmomanometer...,
- Food additives and food safety
- Cosmetics, disinfectants,
- Medical waste management within medical facilities;
- Occupational safety and health…

Legal documents related to mercury issued by the Ministry of Health are summarized as follows:

- For insecticidal and germicidal preparations in household and medical fields:
  - o Regulations on import and export and registration of circulation (including testing and testing);

o List of preparations permitted to be registered for use, permitted to be registered for circulation but restricted from use and banned from use in Vietnam;

o Regulations on transportation of dangerous goods that are chemicals and insecticidal and germicidal preparations used in household and medical fields;

- Regulations on medical waste management
- Regulations on food safety
- Regulations on measurement and inspection of the working environment and the making of occupational hygiene records to manage harmful factors in the working environment;
- Regulations on a number of occupational diseases and treatment regimes for state employees suffering from occupational diseases, including mercury poisoning and mercury compounds.

4. Ministry of Agriculture and Rural Development (MARD)

The Ministry of Agriculture and Rural Development (MARD) has issued legal documents related to mercury, specifically:

(1) Fertilizers, plant protection drugs (plant protection)

- Regulations on import and export, conditions for production and trading of fertilizers and pesticides;
- Regulations on registration of pesticides including the testing process;
- Requirements for recall, destruction, and handling of pesticide packaging after use

(2) Animal feed

- Regulations on import and export, conditions for production and trading of animal feed; - List of animal feed permitted for circulation in Vietnam,
- Regulations on animal feed allowed to be circulated in Vietnam;
- Quality management of animal feed in Vietnam

(3) Veterinary medicine

- Regulations on import and export, conditions for production and trading of veterinary drugs;
- Promulgate the List of veterinary drugs permitted for circulation in Vietnam.

5. Ministry of Science and technology (MOST)

The Ministry of Science and Technology has issued a number of TCVNs on chemical management, in which some are directly related to mercury, specifically:

- TCVN 10172:2013 (IEC 62554:2011) Preparation of samples for measuring mercury levels in Fluorescent lamps;
- TCVN 5816:2009 Dentistry - Dental hygiene products in which the maximum heavy metal content is specified, specifically, mercury is ≤ 1 mg/kg;
- TCVN 3804:2009 (ISO 5993:1979) Sodium hydroxide for industrial use – determination of mercury content – Flameless Atomic Absorption Spectroscopy method;
- TCVN 7724:2007 Water quality. Determination of mercury
- Atomic fluorescence spectroscopy method

6. Ministry of Labor, Invalids and Social Affairs (MOLISA)

The Ministry of Labor, Invalids and Social Affairs (LOLISA) has issued legal documents related to regulations on occupational safety and health as follows:

- Making plans to ensure occupational safety and health;
- Control of dangerous and harmful factors, which are likely to cause occupational accidents, occupational diseases, and
- Regulations on occupational safety and health at the workplace.

7. Ministry of Transportation (MOT)

The Ministry of Transport and Communications is the state management agency related to transportation, specifically:

- List of dangerous goods (including mercury compounds) and the transport of dangerous goods by road motor vehicles,
- the list of dangerous goods (including mercury compounds) and the carriage of dangerous goods by rail, and
- List of dangerous goods (including mercury compounds) and the transport of dangerous goods on inland waterways.

2.2.2. Enterprises

The project will work with a number of private institutions and firms, as well as with informal recyclers (trying to promote their shifting to formal business).

- Representatives of private industries and industrial associations will be involved in the process of development of Ecolabeling and certification of POPs-free plastic, to ensure that the proposed certification schemes are feasible and to promote their adoption.
- Plastic, foam and polymer industry (automotive and electronic, building materials, upholstery)

- Furthermore, on the mercury side, it will be necessary to establish partnerships with manufacturers of fluorescent lights and LED lights, and mercury device thermometers, to better finalize the roadmap for mercury phasing out and verify whether any assistance would be needed for the management of mercury stockpile which could remain unused due to the reduction of market for mercury containing devices.
- Private clinics and hospitals will be also contacted to promote the shifting toward mercury alternatives

a) Sectors that use and emit mercury, POP

- Production and use of mercury high pressure lamps and fluorescent lamps (straight tube and compact form)
- Use in hospitals (mercury manometer and mercury thermometer, dental fillings)
- Production and use for comestics
- Gold mining using mercury (amalgamation)??
- Use old variant oil containing PCB
- Old pesticide warehouse
- Residual pollution area

b) Sectors that emit mercury, U-POP

- Coal-fired power plants
- Metallurgy
- Cement production
- Waste incinerators
- Pulp production industry
- Steel smelting plants using sintering from ore and cooking steel by arc furnaces

The project was designed drawing from the lessons learned and experiences of the GEF ID 9379 Project "Green Chemistry project in Viet Nam". One of the key critical success factor of this project was that it demonstrated how engage into cooperation with enterprises by providing several incentives – not only financial assistance – which allowed the two pilot enterprises replace POPs with non-POPs processes and products, doubling the intended GEBs. For this reason, this project intends to:

- Strengthen the Policy and Regulatory Frameworks, particularly on the restrictions/bans on imports of POPs.
- Devise clear awareness and communication on the bans of import of POPs chemicals, balancing incentives with regulatory actions to be enforced by MONRE and MOIT, and that businesses need to ensure their production is not disrupted by upcoming Policies and Regulations
- Leverage on the technological (technical assistance) and financial support to be deployed;
- Promote the ecolabeling scheme and support the "green and sustainable marketing" of products as means to gain and expand markets;
- Engage with Industrial Associations so to strengthen collaboration and work at institutional level to gain trust and assure the private sector´s "buy in" and ownership of the project.

2.2.3. Financial institutions,

1) Vietnam Environmental protection fund (VEPF)
2) Commercial banks

2.2.4. NGO

There are several quasi NGOs, and NGOs that are interested in minimizing environmental pollution

1. Quasi NGO

1) VESDEC
http://vesdec.com.vn/index.php?language=vi&nv=about&op=Gioi-thieu
2) INEST: School of Environmental Science and Technology.
Address: House C10, Hanoi University of Technology, No. 1 Dai Co Viet Str., Hanoi.
https://inest.hust.edu.vn/trang-chu

2. NGO

1) CGFED (Center for Gender, Family and Environment).

http://cgfed.org.vn/son-chi-hiem-hoa-khon-luong-cho-suc-khoe/
2) NCDs (Non-Communicable Diseases Alliance)
https://doisongvietnam.vn/lien-minh-phong-chong-benh-khong-lay-nhiem-viet-nam-tong-ket-2-nam-hoat-dong-37150-9.html
3) CECR (Center for Environment and Community Research) carried out project on plastic waste management
http://cecr.vn/page/7
4) Trung tâm nghiên cứu Bảo tồn Sinh vật biển và Phát triển cộng đồng (MCD), Centre for Marinelife Conservation and Community Development (MCD)
Address: Room 3104, Floor 31, Building 34T, Hoang Đao Thuy Str., Cau Giay District Hanoi
5) Live and Learn Vietnam
Address: Bưởi, Tây Hồ, Hà Nội
6) PanNature Vietnam
Address: 24H2 Khu đô thị mới Yên Hòa, Phường Yên Hòa, Quận Cầu Giấy, Yên Hoà, Cầu Giấy, Hà Nội
7) GreenID Việt Nam
Address: Nhà C1X3, Ngõ 6 Phố Trần Hữu Dực, Mỹ Đình, Nam Từ Liêm, Hà Nội

2.2.5. Recyclers

This includes waste collectors and recyclers, and people working in formal recycling industries, Recycling industry, and direct exposure community including women.

II. THE STAKEHOLDER ENGAGEMENT PLAN

The stakeholder engagement plan Built on UNDP guidance. The Stakeholder Engagement Plan include the following minimum elements and must be publicly available in a form and language appropriate to the relevant stakeholders and disseminated proactively to them:

1. Public engagement undertaken during project development

Transparency and access to information:

To ensure the active participation of stakeholders, information about the project should be publicly available and easily accessible to interested stakeholders.

Identification of roles:

The roles of different stakeholders need to be clearly defined in each phase of the project, including project beneficiaries, NGOs, local communities

Dialogue, outreach and consultation.

The project should include awareness raising activities to encourage stakeholders to participate in the project, and appropriate forms of participation.

Stakeholders should be consulted at the very beginning of the project about their wishes and needs in order to create active stakeholder participation in the project process, including design, implementation and monitoring.

Monitoring, Evaluation and Reporting

Encourage the participation of staleholders in the monitoring, and evaluation process if possible, in order to improve the independence and accuracy of monitoring information.

2. The steps and actions to achieve meaningful consultation and inclusive participation, including information dissemination

Project component	**Step & Action to consultation and inclusive participation**	**Roles and responsibilities**
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.	
1.1. Environmental regulation upgraded to include new POPs; Green label and related policies for selected sectors (e.g. plastic, polymers, others) developed and implemented to reduce POP direct and secondary use, to reduce U-POP releases and to enhance circular economy.	1.1.1 Review, amendment of existing, or creation of new legislation related to POPs and new POPs in key sectors	Key persons: MONRE MOIT, MOH, MOST, SBV, MOF, VEPF, Participants: MARD,MOLISA, MOT, MOC. Customs Administration, MOIC, VDB, NATIF, NGOs, direct exposure community including women
1.2 Environmental policy on mercury developed and implemented to replace mercury products and to enhance the management of products containing mercury at their End of Life with segregation of mercury and recycling of non-mercury components	1.2.1 Roadmap and sectorial plans developed for replacement of mercury thermometers and mercury containing lamps established	Key persons: MONRE MOIT, MOH, MOST, SBV, MOF, VEPF, Participants: MARD,MOLISA, MOT, MOC. Customs Administration, MOIC, VDB, NATIF, NGOs, Enterprises
	1.2.2. 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.	Key persons: MONRE MOIT, MOH, MOST, SBV, MOF, VEPF, Participants: MARD,MOLISA, MOT, MOC. Customs Administration, MOIC, VDB, NATIF, NGOs, Enterprises, direct exposure community including women
1.3. Development of a Green Finance Framework, to sustain the shifting of enterprises toward a	1.3.1 Green Finance framework designed, funded and implemented to support private sector on getting incentives policy	Key persons: MONRE MOIT, MOH, MOST, SBV, MOF, VEPF,

Project component	Step & Action to consultation and inclusive participation	Roles and responsibilities
non-POPs and a non-Mercury manufacturing		Participants: MARD,MOLISA, MOT, MOC. Customs Administration, MOIC, VDB, NATIF, NGOs, Enterprises
	1.3.2 Green Procurement scheme designed and implemented for MONRE, some DONREs and healthcare facilities (MOH)	Key persons: MONRE MOIT, MOH, MOST, SBV, MOF, VEPF, Participants: MARD,MOLISA, MOT, Customs Administration, MOIC, VDB, NATIF, NGOs, Enterprises
Project component 2	Lifecycle management of POP s and PTS containing products	
2.1. Sustainable manufacture and design of plastic, polymers, paint, metal finishing and other products improved to prevent the use of POP and the release of POP in the environment.	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.	Key prsons: MONRE, MOIT, MOF, and CA, selected Enterprises Participants: MOST, SBV, NATIF, MOIC, MOLISA, MOT, professional associations, direct exposure community including women
	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, HBCD, PFOS/PFOAs, SCCP) in key sectors demonstrated.	Key prsons: MONRE, MOIT, MOST, MOF, and CA, selected Enterprises Participants: MOST, SBV, NATIF, MOIC, MOLISA, MOT, professional associations, direct exposure community including women
	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.	Key prsons: MONRE, MOIT, MOST, MOF, and CA, selected Enterprises Participants: MOST, SBV, NATIF, MOIC, MOLISA, MOT, professional associations, direct exposure community including women
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 promoted to identify and implement solutions for the horizontal and safe recycling and of materials and the segregation and safe disposal of POPs contaminated materials.	Key prsons: MONRE, MOIT, MOST, MOF, and CA, selected Enterprises Participants: MOST, SBV, NATIF, MOIC, MOLISA, MOT, professional associations, recycling industry, direct exposure community including women
Project Component 3	Mercury: lifecycle management of mercury containing products	
3.1 Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management.	Output 3.1.1. Risk management, 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	Key persons: MONRE, MOC, MOH, MOF, PCs & URENCOs, Participants: MOIT, MOH MOST, MOLISA, CA, SBV, MOIC, professional associations, recycling industry, direct exposure community including women
	3.1.2. . Capacity and 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.	Key persons: MONRE, MOC, MOH, MOF, PCs & URENCOs, Participants: MOIT, MOH MOST, MOLISA, CA, SBV, MOIC, professional associations, recycling industry, direct exposure community including women
Project component 4	**Monitoring, learning, adaptive feedback, outreach and evaluation.**	MONRE, MOST, MONRE, MOST, Project Stakeholder Engagement Officer

Project component	Step & Action to consultation and inclusive participation	Roles and responsibilities

3. Key indicators of stakeholder engagement during project implementation, and steps that will be taken to monitor and report on progress and issues that arise

Project component	Step & Action to consultation and inclusive participation	Key indicators and targets
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.	
1.1. Environmental regulation upgraded to include new POPs; Green label and related policies for selected sectors (e.g. plastic, polymers, others) developed and implemented to reduce POP direct and secondary use, to reduce U-POP releases and to enhance circular economy.	1.1.1 Review, amendment of existing, or creation of new legislation related to POPs and new POPs in key sectors	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of review, amendment, creation of new legislation related to POPs and new POPs in key sectors. Participants be consulted during process of review, amendment, creation of new legislation related to POPs and new POPs in key sectors.
1.2 Environmental policy on mercury developed and implemented to replace mercury products and to enhance the management of products containing mercury at their End of Life with segregation of mercury and recycling of non-mercury components	1.2.1 Roadmap and sectorial plans developed for replacement of mercury thermometers and mercury containing lamps established	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of roadmap and sectorial plans developed for replacement of mercury thermometers and mercury containing lamps established Participants be consulted during process of Roadmap and sectorial plans developed for replacement of mercury thermometers and mercury containing lamps established
	1.2.2. 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.	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of review of the existing legislation related to mercury in products and mercury emission carried out Participants be consulted during process of review of the existing legislation related to mercury in products and mercury emission carried out
1.3. Development of a Green Finance Framework, to sustain the shifting of enterprises toward a non-POPs and a non-Mercury manufacturing	1.3.1 Green Finance framework designed, funded and implemented to support private sector on getting incentives policy	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of Green Finance framework designed, funded and implemented to support private sector on getting incentives policy. Participants consult during process of Green Finance framework designed, funded and implemented to support private sector on getting incentives policy. At least one communication and training activity about Green Finance be held in which parrticipants consult and support to, NGOs and Enterprises participate in.

Project component	Step & Action to consultation and inclusive participation	Key indicators and targets
	1.3.2 Green Procurement scheme designed and implemented for MONRE, some DONREs and healthcare facilities (MOH)	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of Green Procurement scheme designed and implemented. Participants be consulted during process of Green Procurement scheme design. At least one communication and training activity about Green Procurement scheme be held in which parrticipants consult and support to, NGOs and Enterprises participate in.
Project component 2	Lifecycle management of POP s and PTS containing products	
2.1. Sustainable manufacture and design of plastic, polymers, paint, metal finishing and other products improved to prevent the use of POP and the release of POP in the environment.	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.	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of 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. Participants be consulted during process of analysis and select sectors.
	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, HBCD, PFOS/PFOAs, SCCP) in key sectors demonstrated.	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of Alternative product design in key sectors demonstrated Participants be consulted during process of analysis and select sectors. Participants be consulted during process of Alternative product design. At least one communication and training activity about Alternative product design be held in which parrticipants consult and support to, NGOs and Enterprises, direct exposure community including women participate in.
	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.	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of Design and implementation of modern Air Pollution Control Systems. Participants be consulted during process of Design and implementation of modern Air Pollution Control Systems. At least one communication and training activity about Air Pollution Control Systems be held in which parrticipants consult and support to, NGOs and Enterprises, direct exposure community including women participate in.
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 promoted to identify and implement solutions for the horizontal and safe recycling and of materials and the segregation and safe disposal of POPs contaminated materials.	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of identify and implement solutions for the horizontal and safe recycling and of materials and the segregation and safe disposal of POPs contaminated materials. Participants be consulted during process of identify and implement solutions for the horizontal and safe recycling and of materials and the segregation and safe disposal of POPs contaminated materials. At least one communication and training activity about solutions for the horizontal and safe recycling and of materials and the segregation and safe disposal of POPs contaminated materials be held in which parrticipants consult and support to, NGOs and Enterprises, recycling community, direct exposure community including women participate in.

Project component	Step & Action to consultation and inclusive participation	Key indicators and targets
Project Component 3	Mercury: lifecycle management of mercury containing products	
3.1 Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management.	Output 3.1.1. Risk management, 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	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities of Risk management, 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 . Participants be consulted during process of technical guidance and training materials development. At least one communication and training activity about the management of mercury stockpiles and obsolete mercury-containing equipment be held in which parrticipants consult and support to, NGOs and Enterprises, direct exposure community including women participate in.
	3.1.2. . Capacity and 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.	Key persons: involve in all cooperation activities as seminars, workshops, take part into all activities ofCapacity and institutions strengthening to eliminate use of mercury containing products; road map and plan for using of mercury-free devices developed and implemented. Participants be consulted during process of Capacity and institutions strengthening and road map and plan for using of mercury-free devices develoment and implementation. At least one communication and training activity about elimination use of mercury containing products; road map and plan for using of mercury-free devices development and implementation be held in which parrticipants consult and support to, NGOs and Enterprises, direct exposure community including women participate in.
Project component 4	**Monitoring, learning, adaptive feedback, outreach and evaluation.**	

APPENDIX

MEETING REPORT

Kick-off Meeting

Institution consulted	MONRE	Date and venue	Novotel Suites Ha Noi Hotel, No.5 Duy Tan street, Dich Vong Hau ward, Cau Giay district, Ha Noi. 16th Dec. 2020
List of participants	Participants: UNDP: Mr. Dao Xuan Lai, Head of Climate Change and Environment Unit; Mr. Hoang Thanh Vinh, Programme Analyst – Chemicals & Waste. VEA (Department of Environmental Quality Management): Mr. Le Hoai Nam, Director; Officals: Ms. Dang Thuy Linh, Ms. Phan Thi To Uyen, Mr. Nguyen Hoang Duc. International consultant: Mr Carlo Lupi. National guest expert: Ms. Pham Thi Bich Ngoc, Project "Vietnam POPs and Sound Harmful Chemicals Management" National consultants: Mr. Do Thanh Bai; Mr Nghiem Trung Dzung, Ms Le Hoang Lan, Ms Pham Quynh Huong, Ms Le Thu Hoa Ministries: Ministry of Industry and Trade, Ministry of Health, Ministry of Construction, etc. Associations, Institutes, Universities: Association for Building Materials, VIFOTEC fund, Institute for Agriculture Environment, Hanoi University of Science and Technology, Hanoi University of Natural resources and Environment, VNU University of Science (Research Centre for Environmental Technology and Sustainable Development - CETASD), enterprises, etc.		
Main topic of the meeting	The inception workshop represents the first stakeholder engagement activity in the course of Project Preparation Grant activities.		
Meeting minute	Presentation of PIF. Presentation of the main outcome relating to POP, PTS and Mercury of Project "Vietnam POPS and Sound Harmful Chemicals Management" – GEF5/UNDP, including: - Legislation and policy framework, National Technical regulation and National Standard - Baseline data on POP, PTS and Mercury Presentation of the contents relating to Project document development, including: • Current status of use, production, and emissions of POP, PTS, Mercury and products containing POP, PTS and Mercury in Vietnam • Overview of some industries, sectors and discharge POP and Mercury • Eco-label and green financial mechanism in Vietnam • The information on Stakeholders and Gender analysis • The environment and social issues • Incentive mechanisms and Green labelling • Environmental and Social Issues • The outline of Project document - Propose the next activities		

Ministry of Natural Resources and Environment

1. Vietnam Environmental Protection Fund

Institution consulted	Vietnam Environmental Protection Fund (VEPF)	Date and venue	8.45 am – 10.15 am 3rd June 2021 via online Meeting
List of participants	UNDP: Mr. Hoang Thanh Vinh, VEPF: Mr. Nguyen Duc Thuan, Director, Ms. Duong Thi Phuong Anh, VEPF Vice Director, Mr. Tran Thanh Nam, Mr. Le Quang Linh, VEA: Mr. Le Hoai Nam, Director of Department of Environmental Quality Management, Ms. Dang Thuy Linh, Ms. Phan Thi To Uyen International consult: Mr. Carlo Lupi, National consult: Ms. Le Hoang Lan,		
Main topic of the meeting	Learn about VEPF activities. Find out the possibility of VEPF getting involved in this project.		
Meeting minute	VEPF has experiences in risk assessment and Appraisal, ensuring the non-performing loans ratio < 3% - The lowest lending rate is 2.6% per year for guaranteed projects (the highest is 3.6% per year).		

	- VEPF ensures 3 principles: Right object (List of projects eligible for loan comply with current regulations in Appendix III of Decree No. 40/2019/ND-CP); Right purpose; and ensuring the return of capital. In cases the subjects are not included in Appendix III of Decree No. 40/2019/ND-CP but on the list of projects that Vietnam commits internationally, they are still eligible for loans. - VEPF has participated in many international funding projects, providing financial support to projects on the regulatory list and raising awareness for enterprises to access preferential loans to transform technology and products in an environmentally friendly manner. - Within the scope of Project, VEPF expect the project will support to develope the Circulars, technical guidelines, manuals on credit and lending for the project's beneficiaries and other lenders. - VEPF is willing to contribute to the draft project documents and participate in activities of reducing emissions and impact of POP-Mercury Project. The Vietnam Environment Administration will send documents to VEPF on participating the project and co-financing commitment for the project.

2. Institute of Strategy and Policy on Natural Resources and Environment

Institution consulted	Institute of strategy and policy on natural resources and environment (ISPONRE)	Date and venue	10.30 am - 11.30 am 3rd June 2021 via online Meeting
List of participants	UNDP: Mr. Hoang Thanh Vinh, ISPONRE: Ms. Anh, representative of ISPONRE; Mr. Binh, Resource and Environment Economy Division, ISPONRE; Mr. Anh, Environment Division, ISPONRE Department of Environmental Quality Management - VEA: Ms. Dang Thuy Linh, Ms. Phan Thi To Uyen, National consult: Ms. Le Hoang Lan,		
Main topic of the meeting	Learn about Green credit, Green projects. Find out the possibility of ISPONRE participating in this project.		
Meeting minute	ISPONRE consultants and staff discussed and clarified some related issues: Criteria for determining projects eligible for granting green credit and issuing green bonds: consider to amend regulations on investment projects in the form of production, business and services that are likely to cause environment pollution will not be granted green credit or issued green bonds. Classification of green projects: Currently, ISPONRE is developing a list of 124 green projects that are eligible for incentives to access green credit or mobilize green bonds, in 13 sectors and divided into 6 target groups (including the goal of transforming technology towards environmental friendliness; and the goal of waste management and treatment). + This list is based on 82 EU category in Climate Bond Initiative-CBI program. ISPONRE will share this draft list of 124 projects (after approving by ISPONRE Leaders). + The list of green projects will be planned to issue in the form of a Decision of the Prime Minister (due to difficulties in integrating, specifying in the draft Decree guiding the Law) and will be constantly updated (including projects from green to greener, or from brown to green). - Regarding the preferential policy mechanism for projects meeting the criteria for granting green credit: comply with laws (Law on credit…), the State Bank's policy on interest rates and incentives in credit extension. - Regarding the overlap of the list of 124 projects mentioned above with other contents in the draft Decree guiding the Law on Environmental Protection in 2020, specifically: + For Appendix 77 on the list of environmental protection activities eligible for incentives and support (chaired by the Department of Policy, Legal and Inspection - Vietnam Environment Administration) in the draft Decree dated June 1, 2021 : This list of 124 projects will follow the list in Appendix 77 (this list is simpler). + For Appendix 9 on Types of production, business and services that are at risk of causing environmental pollution (chaired by the Environmental Impact Assessment and Appraisal Department - Vietnam Environment Administration) in the draft Decree dated June 1, 2021: The list in Appendix 9 could be included in List of 124 projects. + For Appendix III on List of environmental protection activities eligible for incentives and supports of Decree No. 40/2019/ND-CP dated May 13, 2019 of the Government that amending and supplementing some articles of decrees detailing and guiding implementation of the Law on Environmental Protection: ISPONRE discussed and worked with the Environmental Protection Fund on this content.		

	- ISPONRE is willing to contribute comments to draft project documents and participate in the activities to reduce emission and impact of POP-Mercury. - UNDP: It is necessary to consider preferential policies to borrow capital from funds such as the Environmental Protection Fund for a polluting, high-risk project, especially this project.

Ministry of Industry and Trade (MOIT)

3. Vinachemia

Institution consulted	Vietnam Chemical Agency (Vinachemia)	Date and venue	7th Apr. 2021
List of participants	VEA (Department of Environmental Quality Management): Mr. Le Hoai Nam - Director, Mr. Nguyen Hoang Duc, Ms. Phan To Uyen, Ms. Dang Thuy Linh Vinachemia: Mr. Luu Hoang Ngoc – Deputy Director General, Ms. Ha, Ms. Le Phuong Thuy, Mr. Thuan, Mr. Kien International consultant: Mr Carlo Lupi. National consultants: Mr. Do Thanh Bai, Mr. Nghiem Trung Dung, Ms. Le Hoang Lan Hoang Kim Company: Mr. Tran Nhu Duc Hau		
Main topic of the meeting	Discuss the management of the Chemical Department for the import, production, trading, and use of chemicals by enterprises.		
Meeting minute	Mr. Nam shared information about the General Department of Customs, which is building a database to display on the website on the management of enterprises importing goods and chemicals, and plans to share it with relevant agencies. Mr. Ngoc informed that the management of enterprises that produce, use and trade chemicals is managed in two forms: the Department of Industry and Trade reports on paper and enterprises report electronically and in paper. It is expected to amend the Law on Chemicals (2021), which is expected to be fine if enterprises do not declare fully. Currently, a limited chemical import license is granted but for an indefinite period. The Department of Chemicals has not received from Customs on import data related to chemicals. The Department of Chemicals manages in the form of post-inspection. Every year, post-inspection is carried out, but not yet sanctioned. Customs has not strictly regulated the import of restricted chemicals. Businesses only need to declare that they have chemicals to get customs clearance. HS codes, and CAS codes are sometimes still not the same. Current regulations only manage import and business units, production units, and units used for production are not controlled. Importing units for use only have to declare chemicals and do not have to conduct post-inspection. Request: + Should stipulate that there is a document component in the customs declaration (about the declaration of imported chemicals...). + Should stipulate that the grant of permits must have a definite time and deduct the volume of import registration (done electronically or via excel). + It is possible to arrange a meeting of 3 parties: General Department of Environment, Department of Chemicals, General Department of Customs to exchange and clarify relevant issues.		

Institution consulted	Vietnam Chemical Agency (Vinachemia)	Date and venue	11 June 2021, 9:30 am-10:30 am
List of participants	UNDP: Mr. Hoang Thanh Vinh VINACHEMIA: Mr. Lưu Hoang Ngoc - Deputy Director General, Ms. Le Phuong Thuy and Mr. Le Viet Thang VEA ((Department of Environmental Quality Management): Ms. Dang Thuy Linh and Ms. Phan Thi To Uyen Consultants: Ms. Le Hoang Lan, Mr. Nghiem Trung Dzung, and Mr. Do Thanh Bai		
Main topic of the meeting	Sharing information dealing with project and the roles of Vinachemia in the project document development process and implementation. Expectation from Vinachemia and MoNRE from the components of the project and also the project outputs		
Meeting minute	Mr. Vinh chaired the meeting and requested all consultants informing the meeting attendees about project document and detail explanation of each project components as well as to response to questions from Vinachemia.		

	Mr. Bai introduced briefly on component 2 of the project: Mr. Bai thanks the valuable supports from Vinachemical in POPs importation data sharing. General Objective and Targets of the project (lifecycle management of POPs and PTS). 02 main outcomes of the project. Series of activities to get the outcomes. Mr. Bai recommended the strongly needed inputs from cooperation and willingness from industries as well as from other stakeholders, especially from MOIT. Mr. Bai also answered the questions from Mr. Ngoc (Vinachemia) on how Vinachemia project of Green Chemistry and some others could be integrated in this project. Mr. Dung (NC3) introduced briefly on component 3 of the projec. Mr. Dung also thank Vinachemia on good cooperation and data sharing about Hg. The outputs of the project on mercury reduction is addressed and needed activities for Hg reduction from different sectors are also discussed. The mercury sources are identified in the project document, but for controlling personal and household tools containing Hg is a big challenge. 03 main outputs of the project. Availability of lamp producing companies for the compliance with QCVN 02:2020/BCT (National technical regulation on mercury content in fluorescent lamp) of Ministry of Industry and Trade (Issued by Circular 45/2020/TT-BCT, dated 21-12-2020, of Ministry of Industry and Trade) was confirmed by Mr. Ngoc. Mrs. Le Hoang Lan (NC1) Cooperation between MONRE and MOIT in developing new policies, regulation and standards for strictly regulating POP and mercury contents in industrial products of Vietnam should be considered by both ministries. Mrs. Dang Thuy Linh (MONRE) The final cooperation mechanism among the stakeholders (MONRE, MOIT and MOF/CUSTOM) will be documented and should be an open discussion for the issues of information sharing, standards development and mechanism of POP and mercury reduction management will be a government instrument to support sustainable development of Vietnam Mr. Ngoc (MOIT) Hope to cooperate and participate in the project. Some preliminary contents, including An overall assessment is required to complete the legal documents. Research to develop more technical regulations related to mercury and other fields (go with QCVN 02:2020/BCT - National technical regulation on mercury in fluorescent lamps.). The draft Decree guiding the implementation of the Minamata Convention is currently being developed and will be consulted, so more time is needed. More time is needed to find out information if pilot models at enterprises will be implemented (for scale, desire to participate...). The Green Chemistry Project showed a large amount of imported POPs, including SCCP, the Department plans to develop a Project focusing on SCCP. Could contribute to content of project in Hg management and eco-label. Mr. Vinh gave conclusion Hope the final project document will be completed soon and that will be shared to Vinachemia because many components need to have MOIT involvement UNDP will consider other project ideas in order to support Vietnam more and reducing POP chemicals that now is imported with quite high quantity for different development activities in Vietnam Experience in Green Financing mechanism and Eco Label tool implementation should be shared among projects in order to reach highest efficiency of external supports.

4. Energy Efficiency and Sustainable Development Department

Institution consulted	Energy Efficiency and Sustainable Development Department (EESDD) , Ministry of Industry and Trade	Date and venue	10.30 am - 11.30 am June 11,2021 via online Meeting
List of participants	UNDP: Mr. Hoang Thanh Vinh, EESDD: Mr. Bach, Mrs. Bui Thi Hien, VEA (Department of Environmental Quality Management): Ms. Phan Thi To Uyen, Ms. Dang Thuy Linh, National consult: Ms. Le Hoang Lan		
Main topic of the meeting	Learn about EESDD's management practices for Sustainable production and consumption, Green Financial. Find out EESDD's interest in this project.		
Meeting minute	Consultants and EESD staffs discussed to clarified some related contents:		

	Sustainable production and consumption: +EESD proposes to support policy framework development. + Directly support for enterprises to implement sustainable production and consumption -> build pilot models -> develop technical guidelines for scaling up: * Cleaner Production: EESD has developed around 20 technical guidelines for different industries (including plastics). * Current approach is lifecycle management to reduce consumption of materials and use resources efficiently (sustainable design, eco-design, design to recycle, reuse and production, distribution, consumption...). In the 2021 – 2030 period, focussing on priority for the fields: packaging, beverages, garment, and household furniture. Technical guidance on fisheries and beverages is currently being developed (can be developed for each stage of life cycle management). The national action program on sustainable production and consumption for the 2021 - 2030 period has not yet implemented activities to promote green public procurement practices. However, through the Center for Industrial Promotion and Industrial Development Consulting, we are currently piloting a model of eco-labelling (mainly energy-saving labeling) at some typical enterprises to build a technical guidance. Within scope of this project, priority can be given to the following fields: Basic chemicals; Thermal power ash, steel, cement... - Green Financial: The Ministry of Industry and Trade has participated in the project of ADB in coordinated with the State Bank of Vietnam to pilot green finance for renewable energy projects; projects for seeking preferential loans for projects of using energy efficiently of the World Bank, UNDP - Capacity Building: Training and capacity building activities in National Action Program on Sustainable Production and Conservation were carried out with the participation of the Center for Industrial Promotion and Industry Development Consulting in 63 provinces in the whole country. Therefore, the proposal of "improving the capacity of centers, experts and enterprises to use local resources to consult and promote sustainable production and consumption and developing lectures for lecturers on sustainable production and consumption" should be considered. - EESD is willing to contribute the comments to the draft documents of project document and participate in activities to reduce emission and impact of POP-Mercury.

Ministry of Health

5. Medical Equipment and contruction Department

Institution consulted	Medical Equipment and contruction Department (MECD), Ministry of Health (MOH)	Date and venue	138A Giang Vo, Hanoi, 13th April, 2021
List of participants	MOH (MECD): Mr. Hùng, Mr. Hai, Mr. Toan VEA (Department of Environmental Quality Management): Ms. Phan Thi To Uyen, Ms. Dang Thuy Linh National consultants: Mr. Nghiem Trung Dzung, Mr. Tran Nhu Duc Hau – Hoang Kim Company		
Main topic of the meeting	Learn about the management activities of the Ministry of Health for the import and use of medical equipment containing Mercury such as mercury thermometers, mercury manometers		
Meeting minute	The Ministry of Health has an electronic portal that provides information on regulatory documents on classification and management of medical equipment, and a list of units eligible for classification of medical equipment. . The medical equipment containing mercury in Vietnam is almost imported, not produced domestically. Class A devices only need to be declared once, and are valid forever. These claims may also be withdrawn, based on the results of post-inspection by regulatory authorities, or by self-recalls by establishments when their products are found to be substandard. The BYT has no control over the quantity of imports. The licensing and control of the equipment classification units, the units that are qualified to carry out the classification are granted a one-time operation certificate, with no term; the staff performing the classification must be retrained every 3 years. The classification of medical devices is based on the level of risk. There are many types, so it is only classified according to the provisions of the Circular without a specific list. MOH does not manage the quantity of imported mercury-containing medical equipment, nor does it coordinate with Customs to manage the quantity. Regarding the inspection and examination of the use of medical equipment containing mercury, the management agencies only carry out post-checks when the quantity used is high or when there is an incident.		

	The management of damaged equipment, the disposal of equipment containing mercury and POP compounds is the responsibility of the Department of Health Environmental Management. Regarding the use of thermometers and mercury manometers, For large hospitals (under the Central Government), every year the Ministry of Health only manages the plans for using medical equipment of hospitals, not actual amount used. For local affiliated hospitals (province, city) managed by Departments of Health. There are no periodic reports of this use. According to regulations, there are 49 types of equipment managed by MOH that require a license. Others are imported as normal products (including manometers and mercury thermometers). The electronic management system has been in place since 2017. Before 2017, there was no information on the import and use of these products because no management was required. Medical equipment is managed by many units, but the output waste does not have specific management regulations.

6. Health Environment Management Agency

Institution consulted	Health environment management agency (HEMA), MOH	Date and venue	14:30 PM – 16h00 PM, June 3, 2021. Online Meeting (via Zoom meeting)
List of participants	UNDP: Mr. Hoang Thanh Vinh, MOH (HEMA): Ms. Nguyen Thi Lien Huong, Director ofHEMA; Mr. Nguyen Anh Dzung, Head of division of environmental health and chemical management, HEMA VEA: Ms. Phan Thi To Uyen, Ms. Dang Thuy Linh, National consult: Ms. Le Hoang Lan, Mr. Nguyen Trung Dzung		
Main topic of the meeting	Learn about the management activities of the Ministry of Health for devices containing Hg, such as temperature measurement. Difficulties in management, and proposed solutions.		
Meeting minute	Mr. Nguyen Anh Dzung - Hema: - Regarding state management, there is a large content that has not been included, that is Hg households thermometers (because used in medical facilities are considered as medical devices), so these Hg thermometers have not been managed, controlled, recovered... Currently, Vietnam's population is mainly in rural areas (70%), so these subjects are difficult to manage, and their awareness is not high, while according to current rules, only the licenses of pharmacies are managed, not the sale of drugs and devices. Therefore, it is necessary to develop a policy framework on managing the import of medical devices. - Due to lack of resources (budget...) Health environment management agency has not carried out many professional activities. In the future, expectedly: + Develop a clear and complete legal policy framework on Hg management in particular and medical waste management in general (Joint Circular No. 58/2015/TTLT-BYT-BTNMT has not yet regulated the safety collection and treatment of medical wastes). + It is necessary to strengthen communication to households and pharmacies about the safe use and replacement of medical devices. Ms. Lê Hoàng Lan: - The Ministry of Health does not manage the quantity of imported medical devices containing Hg. So what difficulties does the Department have, what suggestions do you have in replacing thermometers and sphygmomanometers containing Hg or in green procurement? Mrs. Nguyễn Thị Liên Hương: - Training for 100 health facilities to replace Hg is only temporary and does not completely solve the current situation. - Proposing to carry out investigation and survey on the use of thermometers, Hg sphygmomanometers and Hg removal in this project. - According to current regulations, Hg thermometers have not been banned, so it is not possible to assess the difficulty or replacement of this product. Regarding green procurement, UNDP (Mr. Tùng) coordinated with the Financial Planning Department of the Ministry of Health about the procurement of medical equipment. Currently, the Ministry of Industry and Trade is developing a draft Decree to implement the Minamata Convention, so there is no basis for implementation. Mr. Hoang Thanh Vinh: - Regarding the Minamata Convention, will discuss further with the Ministry of Industry and Trade. - The investigation and survey on the use of Hg thermometers and sphygmomanometers and Hg removal will be carried out during the implementation phase of project.		

	- Request the data on the current status and use of Hg-containing medical equipment (Pilot project to recover Hg from medical waste), management orientation in near future; propose contents for implementation. Ms. Dang Thuy Linh: - The Vietnam Environment Administration will send Official document and to the Department on invitation to participate the project implementation.

Ministry of Finance

7. General Department of Vietnam Customs

Institution consulted	General Department of Vietnam Customs (GDVC)	Date and venue	9D Dương Dinh Nghe, Hanoi, 30th March, 2021
List of participants	MOF (GDVC): Mr. Ho Anh Tuan, and other staffs VEA: Mr. Le Hoai Nam, Ms. Dang Thuy Linh, Ms. Phan Thi To Uyen National consultants: Mr. Do Thanh Bai, Ms. Le Hoang Lan, Mr. Nghiem Trung Dung, Ms. Pham Quynh Huong, Ms. Le Thu Hoa		
Main topic of the meeting	Learn about the management activities of the General Department of Vietnam Customs for the import of chemicals, products containing chemicals related to POP, new POP, and Mercury		
Meeting minute	There is no specific HS code for POP, so it is difficult to separate exact information about materials and products containing POPs imported into Vietnam. Mercury-relevant information can be provided more specifically and clearly. Currently, the chemical declaration is implemented through the one-door mechanism at MOIT (according to Decree 113/2017/ND-CP), then goods with the import permits of MOIT will be cleared. Customs Department only manages the total amount imported. Requests: It is necessary to agree on the regulations on the list of chemicals prohibited or/and restricted from import that is specified in the Decision 1598/2017/TTg and the Decree 113/2017/ND-CP. Goods with chemical content exceeding the limit regulated the list of chemicals prohibited from import, must be applyed the import banning mechanism at the border gate, but not the post-inspection mechanism, because it will cause complications and difficults in management.		

Ministry of Public Security

8. Police Department of Fire Prevention, Fighting and Rescue

Institution consulted	Police Department of Fire Prevention and Fighting and Rescue (PDFPFR)	Date and venue	#1, Vu Huu, Hanoi, 30th March, 2021
List of participants	PDFPFR: Ms. Nguyen Thi Mua, Mr. Tran Trung Thanh, Mr. Nguyen Trung Son, Mr. Tran Hoang Thao, Ms. Nguyn Do Quyen. VEA: Mr. Le Hoai Nam, Ms. Dang Thuy Linh, Ms. Phan Thi To Uyen National consultants: Mr. Do Thanh Bai, Ms. Le Hoang Lan, Mr. Nghiem Trung Dzung, Ms. Pham Quynh Huong, International consultant: Mr. Carlo		
Main topic of the meeting	Learn about the management of the Police Department of Fire Prevention and Fighting and Rescue for the import, production and use of chemicals used in fire prevention and fighting activities.		
Meeting minute	Their testing function is in accordance with Decree 136/2020/ND-CP. For fire fighthing chemicals, the testing focuses on mechanical properties and fire fighting efficiency, but not on chemical composition beacause of having not regulations related. All flame retardant chemicals use in Vietnam must be certified by the Fire fighting Police Department. The foaming agents used to extinguish the fuel fire is AFF foarm, imported from India, Germany and Vinafoam (being Vietnam enterprise operated since 2018). In the last 3 years, the Firefighting Police Department have imported more than 200,000 liters of AFFF 3% and 6% from Vinaform. All imported flame retardant chemicals have the catalog from manufacturer, but not the MSDS accompanied. The Firefighting Police Department has the close coordination with the Chemical Safety Department in managing businesses that use chemicals. Requests:		

	The Firefighting Police Department will consider and provide the AFFF sample for POP-Mercury project to test and share information on the composition and content of POP in the foaming flame retardant agents used in Vietnam.

Enterprise

9. Vinafoam Vietnam Co.,Ltd

Institution consulted	Vinafoam Vietnam Co.,Ltd	Date and venue	Cam Dien – Luong Dien Industrial zone, Cam Dien Commune, Cam Giang District, Hai Duong Province. 6th April, 2021
List of participants	Vinafoam: Mr. Ngo Hong Tien, Mr. Tuan, Mr. Thinh VEA: Ms. Dang Thuy Linh, Ms. Phan Thi To Uyen, National consultants: Mr. Do Thanh Bai, Environment Analysing and Technique JSC (Mr. Minh, Mr. Thien), Hoang Kim Company (Mr. Tran Nhu Duc Hau, Ms. Nguyen Nhu Cam Tien)		
Main topic of the meeting	Learn about the current status of using fire fighting foam in Vietnam. Production situation of fire fighting products of the Company. The use of raw materials, origin of raw materials, control of ingredients, mixing ratio of ingredients, product structure of the Company. The Company's market share in the field of manufacturing and supplying fire fighting foam and fire fighting products.		
Meeting minute	Most of the fire fighting products in Vietnam are imported from India (about 80%) and China; The information on imported fire-fighting foam components is mainly based on the parameters provided by the manufacturer. Imported fire fighting products are licensed by the Police Department of Fire Prevention and Fighting and Rescue. These products are only tested for the effectiveness of fire extinguishing (expansion, other fire prevention and fighting criteria...) without controlling the risks affecting the environment. On the Vietnamese market, about 90% of fire fighting products contain fluorine; As required, all petroleum and chemical warehouses in Vietnam must have fire-fighting foam storage tanks (used in class B fire fighting) to respond to fire and explosion incidents. Duc Giang petroleum depot is storing about 10,000 liters of fire-fighting foam. Most of these fire fighting products have been imported since the 2000s from Russia, Singapore... so the ingredients contain high fluorine. When China joined the Stockholm Convention, residual fluorine-containing foam products (about 20,000 tons containing PFOS, PFAS) could be exported to other countries, including Vietnam (the company has no information.). Vinafoam Vietnam Co., Ltd. is the first company licensed by the Ministry of Planning and Investment specializing in research and production of firefighting foam from imported foam concentrates with Spanish technology lines. In 2020, Vinafoam Company sold about 200 tons of foam concentrate (accounting for about 10% market share). Currently, the Company is building a project to manufacture fire extinguishers (with fire extinguishing powder as the raw material), expected to be completed by the end of 2021. The company will expand the production of fire extinguishing powder, the main ingredient is ammonium phosphate. and inorganic salts. The Company's input materials are controlled according to specifications, ingredients and are mainly imported from Europe and America. The company has 02 main product lines: Concentrated foam concentrate containing fluorine (AFFF 0.5%, AFFF 1%, AFFF 3%, AFFF 6%): The company uses concentrated foam with carbon chain C8 or higher. up but only fluorinated to C6 (easily decomposed in the environment, reducing the impact on humans but still ensuring fire fighting performance). Environmentally friendly fluorine-free concentrated foaming agent (FFF - Free fluorine): The foam is mainly composed of cleaning chemicals, carbon-chain surfactants C12 - C14. The composition of the foam concentrate consists of 90% water and 1% concentrate, the rest are surfactants. The 1% concentrate itself contains up to 70% water. The company aims to replace fluorine-containing materials with plant-based products such as palm oil, coconut oil... with good biodegradability. The company just sent the product to Germany to check the fire-fighting efficiency (expansion ...) and analyzed the decomposition level in water samples in Hai Duong. The results of the BOD5, COD study showed that: + For products with fluorine: Decompose within 14 days, the result is 0.99. + For products without Fluorine: Decompose within 5 days, result is 0.65. Requests: The Company's fluorine-containing foam concentrates have a carbon chain of C8 or higher, but only fluorine to C6, that is, have a lower fluorine content than older products. However, in the long term, control measures must still be taken to avoid affecting future generations.		

	The determination of the ratio of BOD5, COD does not show the full ability of self-degradation of fluorine-containing carbon chains. For the production of foam for class B fires (fires at chemical and petrochemical companies, aircraft, ships, etc.), it is very difficult to replace fluorine in firefighting products. The company wishes to know the composition of POP in fire fighting products; want to know what kind of fire extinguishing products are banned in the world (more analysis is needed for carbon chain C6 and above and carbon chain C6 and below). There are technology solutions for FFF products. Training and training on this content for officers and employees, especially for fire fighters; support businesses to replace non-POP products such as tax incentives... The experts asked the Company to provide the MSDS of the raw materials and the HS code of the Company's products.

Annex 9: Gender Analysis and Gender Action Plan

Attached as a separate file

Annex 9: Gender Analysis and Gender Action Plan

Project Information

Project Information	
1. Project Title	Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel
2. Project Number (i.e. Atlas project ID, PIMS+)	UNDP to add PIMS ID Number / GEFID 6491
3. Location (Global/Region/Country)	Vietnam
4. Project stage (Design or Implementation)	Design (PPG)
5. Date	Septeber 2021

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I. Introduction

1.1. Gender inequality in relation with POP, mercury:

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[1]. 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. The average monthly income of female workers is only about 80% of that of men[2]. A wage gap (13%) still exists between men and women, and female workers are mainly engaged in low-paid jobs in the informal sector that are outside the scope of the Labor Code and are not access to social protection services[3]

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. Vietnamese women have less access to productive resources, education, skills development and employment opportunities than men[4].

According to the General Statistics Office, women account for 49.65% of the labor force, of which three occupations have a high concentration of female workers, and are closely related to POP and Mercury such as Textile 75%; Leather and footwear 85%; Seafood processing 85%.[5]

Women are often not consulted, do not have the right to decide in matters in the family, the workplace as well as participate in politics. Statistics show that one-third of women in Vietnam believe that men should be the decision makers, and the head of the household. Notably, the percentage of women who agree with this view has not changed since 2010[6].

Policy documents on reducing the impact of pollution in general, of POPs and mercury in particular, have many shortcomings. In policy documents related to the impact aspects of pollution in general, POP, mercury in particular, gender has not been mainstreamed, and gender specificity has not been paid attention to. The awareness of the people, including women, and the awareness of the management agencies is still incomplete about the effects of pollution on women in general, and from POPs and mercury.

The reports of the UNDP Green Chemistry project show a fairly extensive use of chemicals in industries such as chrome, upholstery. The use of POPs is also still widespread in large quantities in production and consumption, for example in the areas of paint, plastic components, polymers (like extruded and expanded polystyrene), foam and special purpose textiles and upholstery. This affects the environment and the health of producers and people in general. In addition, POPs and mercury have the ability to evaporate, especially in tropical conditions like Vietnam, making pollution easily dispersed, affecting the environment and health. POPs cause health impacts, especially cancer, and affect the reproductive health of girls and women.[7]

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[1] https://vietnam.unfpa.org/sites/default/files/pub-pdf/ge_viett.pdf
[2] https://dangcongsan.vn/xa-hoi/thu-nhap-cua-lao-dong-nu-chi%CC%89-bang-khoang-80-so-voi-nam-564233.html
[3] https://vietnam.un.org/vi/37263-binh-dang-gioi-yeu-tao-ra-su-thay-doi-cho-xa-hoi-o-moi-he
[4] https://www.ilo.org/hanoi/Areasofwork/equality-and-discrimination/lang--vi/index.htm
[5] 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
[6] http://hoilhpn.org.vn/web/guest/tin-chi-tiet/-/chi-tiet/%C4%91inh-kien-gioi-bat-binh-%C4%91ang-gioi-rao-can-can-xoa-bo-35394-4506.html
[7] UNDP, GEF, VEA, 2019. Current status of POP pollution in Vietnam. Project "safety management of pops and hazardous chemicals in vietnam" (ID:91381).

The United Nations Development Programme (UNDP) uses Gender Inequality Index (GII).[8] GII is a composite measure that shows inequality in achievement between women and men in reproductive health, empowerment and the labor market while GDI measures achievement in human development in three areas: health, education, and command over economic resources. The GDI considers the gender gaps on human development between men and women. Việt Nam's GII of 2018 has a GII of 0.314 and ranks 68 out of 189 countries (in comparation with Malaysia has 0.274 and ranks 58, Thailand has 0.377 and ranks 84, Indonesia has 0.451 and ranks 103).[9] It suggests that about 31.4% was the combined loss due to gender inequalities on achievement to reproductive health, empowerment and labour market participation.

1.2. Legal and Administrative Framework Protecting Women and Promoting Gender Equality

Vietnam has Gender Equality Law, National strategy on gender equality to achieve gender equality. However, policy documents, especially in the field of environment, still do not have gender mainstreaming. For example, there is still a lack of gender mainstreaming in documents such as the National Program on occupational safety and health for the period 2016-2020 (Prime Minister's Decision 05/QD-TTg, January 5, 2016)[10].

II. Gender Issues in POP, mercury production

According to a number of statistical documents of the Ministry of Labor, War Invalids and Social Affairs of Vietnam every year, the number of fatal occupational accidents, the number of deaths from occupational accidents and the number of people who have been seriously injured have all increasing direction. Besides the problem of occupational accidents, the problem of occupational diseases in Vietnam is also very difficult and it tends to increase in both the number of sick people and the type of disease. According to the latest statistics, more than 30,000 workers are suffering from new occupational diseases. However, the actual number may be more than 10 times higher. There are also businesses that are making more efforts in implementing occupational safety and health activities and communicating to employees about measures to prevent toxic hazards at work. The current conditions of technical equipment and labor protection and hygiene at work are still very limited because of insufficient funding [11]

Women are entering the workforce increasingly and largely in non-standard work sectors, including those related to POPs and mercury[12]. For example, areas related to the production and use of plastics, polymers, metal plating, paint/solvents, leather, shoe, textile and garment. The fact that women work in these industries make up a high percentage. However, the current regulations on pollution prevention and reduction are not strict. Policies on hazardous waste management in Vietnam are still incomplete. Therefore, people with direct or related contacts are still affected by health effects, especially for women[13].

It is important to recognize the value of establishing the baseline data. Collection of sex-disaggregated data can show if there is gender equality on access to credit, training, and labor safety. It will be an opportunity for this project to collect baseline sex-disaggregated data from past and ongoing POP, mercury projects in Việt Nam not only on

[8] United Nations Development Programme. Human Development Reports. http://hdr.undp.org/en/content/table-4-gender-inequality-index.
[9] United Nations Development Programme. Human Development Indices. http://data.un.org/DocumentData.aspx?id=415
[10] UNDP, GEF, VEA, 2018. Plan to strengthen the legal framework, complete legal documents on environmental safety management for POPs and PTS substances. Project "safety management of pops and hazardous chemicals in vietnam" (ID:91381)
[11] https://hrspring.vn/index.php?threads/m%E1%BB%A5c-ti%C3%AAu-an-to%C3%A0n-s%E1%BB%A9c-kh%E1%BB%8Fe-ngh%E1%BB%81-nghi%E1%BB%87p-v%C3%A0-th%E1%BB%B1c-tr%E1%BA%A1ng-t%E1%BA%A1i-vi%E1%BB%87t-nam.1826/
[12] https://www.ilo.org/hanoi/Informationresources/Publicinformation/newsitems/WCMS_687586/lang--vi/index.htm
[13] UNDP, GEF, VEA, 2019. Current status of POP pollution in Vietnam. Project "safety management of pops and hazardous chemicals in vietnam" (ID:91381).

benefits but also on access to social and financial capital to initiate small-scale changes in Reduce the Impact and Release of Mercury and POPs in Vietnam.

III. Recommendation

Prior to implementation project activities, it need to be collected available secondary data from past and ongoing POP and mercury projects in Việt Nam that can be used to establish baseline and in setting targets to address gender equality particularly on access to finance, training, and other benefits.

IV. Proposed gender action plan

4.1. Gender equality and Women's Empowerment

It is fully acknowledged that particular attention ought to be given to the connections between gender concerns and chemicals. Namely, women, men and children differ in their physiological susceptibility to the effects of exposure to toxic chemicals. Furthermore, women are particularly influenced by the adverse impact of the 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, therefore representing 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 already 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.

In the course of the project design, a specific gender mainstreaming work plan, with gender-sensitive targets and indicators, will be developed and integrated in the project results framework. This will include as a minimum the following:

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

In addition to that, in the course of project design and 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.

The budget for the gender mainstreaming action plan represents around 4.7% of the overall GEF grant budget.

4.2. Mainstreaming gender into project activities and project results framework

	Objective and Outcome Indicators	Activity related to Gender Mainstreaming	Indicators and targets	Budget items	Allocated budget (USD)
Project Objective: The objective of the project is to protect humn 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: # 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*	42.8% trainers are women. *Target: 1500/3500 women are targeted in training and awareness raising activities.* Should coordinate with women's unions in selected areas in awareness raising activities for women. 50% of the audience of awareness raising activities are women.	See Below	See Below
	Mandatory Indicator 2: # indirect project beneficiaries disaggregated by gender (individual people)	*Number of people (F/M) benefitting from reduced exposure to mercury, POPs or U-POPs .*	50% beneficiaries are women. *Target: 800.000/1.600.000 women workers get benefit from the project.*		
Project 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.**				
1.1. Environmental regulation upgraded to include new POPs; Green label and related policies for selected sectors (e.g. plastic, polymers, others) developed and implemented to reduce POP direct and secondary	1.1.1 Review, amendment of existing, or creation of new legislation related to POPs and new POPs in key sectors	Gender specific risks for associated to POPs and mercury should be addressed in the relevant legal documents. Gender experts and women's union should be involved in the consultation process of legal document development.	#1 gender experts and women's union should be involved in the consultation process of legal document development.	Two national consultants for 30 days each. One international consultant for 10 days.	16,500

	Objective and Outcome Indicators	Activity related to Gender Mainstreaming	Indicators and targets	Budget items	Allocated budget (USD)
use, to reduce U-POP releases and to enhance circular economy.					
1.2 Environmental policy on mercury developed and implemented to replace mercury products and to enhance the management of products containing mercury at their End of Life with segregation of mercury and recycling of non-mercury components	1.2.1 Roadmap and sectorial plans developed for replacement of mercury thermometers and mercury containing lamps established	Female workers and gender experts should be consulted in the process of developing industry roadmaps and plans to replace mercury thermometers and mercury-containing lamps	#1 gender experts should be involved in the consultation process.	Two national consultants for 30 days each. One international consultant for 10 days.	18,500
	1.2.2. 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.	specific personal protective measures against POPs identified for women at workplace in the relevant legal documents	#5 women workers/staffs, and #1 gender experts should be involved in the consultation process.	Consultation with women workers. One national consultant for 20 days.	7,600
1.3. Development of a Green Finance Framework, to sustain the shifting of enterprises toward a non-POPs and a non-Mercury manufacturing	1.3.1 Green Finance framework designed, funded and implemented to support private sector on getting incentives policy	Female workers, and gender experts are consulted during the design, financing and implementation of the Green Financial Framework. Female workers/ staffs should be take part in training course on Green Financial Framework Raise awareness among workers/ staffs/ community residents about Eco-labeling, Green Financing and Procurement	#5 women workers/staffs, and #1 gender experts should be involved in the consultation process of the design, financing of the Green Financial Framework. 30% trainer are women in Green Financial training. 50% training course participants are women. 50% of the audience of awareness raising activities are women.	One national (20 days) and one international (5 days) expert on lending programs for women enterprises.	10,500
	1.3.2 Green Procurement scheme designed and implemented for MONRE, some DONREs and healthcare facilities (MOH)	Gender experts consulted during the design of the Green Procurement Plan Female workers/ staffs should be take part in training course on Green Procurement Plan	#1 gender experts should be involved in the consultation process of design of the Green Procurement Plan.	One national (10 days) and one international (5 days) experts on gender-fair	7,050

	Objective and Outcome Indicators	Activity related to Gender Mainstreaming	Indicators and targets	Budget items	Allocated budget (USD)
			50% training course participants are women	procurement criteria	
Project component 2	**Lifecycle management of POP s and PTS containing products**				
2.1. Sustainable manufacture and design of plastic, polymers, paint, metal finishing and other products improved to prevent the use of POP and the release of POP in the environment.	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.	baseline sex-disaggregated data from past and ongoing POP, mercury projects in Việt Nam along the full value chain manufacturing sectors.	#1 gender experts should be involved in the baseline survey design.	One national experts for 60 days and one international expert for 20 days.	25,000
	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, HBCD, PFOS/PFOAs, SCCP) in key sectors demonstrated.	Consult female workers and gender experts in the design of substitute products. Raise awareness among workers/ staffs/ community residents about the harmful impacts of POPs and new POPs on the environment and health, especially reproductive health for girls and women. Consumer guide, how to choose products that do not contain harmful POPs.	#5 women workers/staffs, and #1 gender experts should be involved in the design of substitute products. 50% of the audience of awareness raising activities are women	Two consultation workshwops. One national expert for 20 days	7,600
	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.	Consult female workers and gender experts during the design and implementation of modern Air Pollution Control Systems. Awareness raising activities for workers/ staffs/ community residents about air pollution control system as stay away from polluted places, be aware of the air quality index measurements, know about measures	#5 women workers, and #1 gender experts should be involved in the consultation process of the design, financing of modern Air Pollution Control Systems. 30% trainer are women in modern Air Pollution Control training. 50% of beneficiaries of awareness raising activities are women.	One national expert for 30 days, one international expert for 10 days.	16,100

	Objective and Outcome Indicators	Activity related to Gender Mainstreaming	Indicators and targets	Budget items	Allocated budget (USD)
		to prevent air pollution, how to choose and use a mask			
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 promoted to identify and implement solutions for the horizontal and safe recycling and of materials and the segregation and safe disposal of POPs contaminated materials.	Consult female workers and gender experts in the development process Interactions, technical exchanges and commercial agreements between recyclers and industry. Awareness raising activities for workers/staffs/ community residents about prevent the contamination of recyclable materials.	#5 women workers, and #1 gender experts should be involved in the process of consultation. 50% of the audience of awareness raising activities are women	One consultation workshop. One national expert for 20 days	5,800
Project component 3	**Mercury: Lifecycle management of mercury containing products**				
3.1 Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management.	Output 3.1.1. Risk management, 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	Female workers and gender expert should be consulted in the developing materials of the risk management, technical guidance and training	#5 women workers, and #1 gender experts should be consulted in process of developing materials of the risk management, technical guidance and training.	Consultation with workers. One international epert for 5 days. Two national experts for 20 days	10,850
	3.1.2. Capacity and 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.	Female workers should be participate in the training of strengthened Capacity and institutions to eliminate use of mercury containing product. Raise awareness for workers/staffs/ community residents about the use of mercury-free products. Instructions on how to choose to buy an electric thermometer instead of a mercury thermometer; choose to buy energy-saving and mercury-free lamps, replace fluorescent lamps with led lights,	50% female workers working in the sector be trained. 50% of beneficiaries of awareness raising activities are women.	One national trainer on mercury product in the workplace for 30 days.	9,600

	Objective and Outcome Indicators	Activity related to Gender Mainstreaming	Indicators and targets	Budget items	Allocated budget (USD)
		compact lamps. What to do when mercury-containing devices are broken			
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.	Improving women's participation and decision making;	Indicator 18: Number of project staff appointed (F/M) Target: Project management institutions established with an equal F/M ratio.	30% staffs of Project management institutions are women	Calculated as 50% of the budget allocated for component 4 for national and international consultant	72,100
	Include any gender-responsive measures to address gender gaps or promote gender equality and women's empowerment	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.	National Gender mainstreaming expert to conduct assessment of GM of the project for 60 days.	12,000
Total budget allocated to the Gender Mainstreaming plan					**219,200**

4.3. Mainstreaming gender into project monitoring and evaluation

Update, review responsibilities, and gender mainstreaming 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.

Annex 10. Letter of financial commitments

Attached as a separate file

CO - FINANCING FOR POPS/MERCURY PROJECT - GEF 7/UNDP

ID.	Content	Type of Cofinancing	Amount (USD)	Note
1	Pollution Control Department (Vietnam Environment Admistration), MONRE	In Cash	112,641	
2	UNDP	In kind	600,000	
3	Co-financing in kind: Including working office, equipment, factories, infrastructure, technology, raw materials, etc., from units: Pollution Control Department (Vietnam Environment Admistration), MONRE; Vietnam Chemicals Agency, Ministry of Industry and Trade; Health Environment Management Agency, Ministry of Health; Vietnam Plastics Association; Vietnam Corrosion Association; Vinafoam Vietnam Co., Ltd; Vietnam Environment Protection fund, MONRE. Prelimininary co-financing has been identified as in committement letters attached to this Annexed. During the project implementation, Pollution Control Department under MONRE is responsible for synthesizing the report on co-financing in kind to serve the project.			

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT
VIET NAM ENVIRONMENT ADMINISTRATION

Hanoi, 16th September, 2021

To: United Nations Development Programme in Vietnam
304 Kim Ma, Ba Dinh, Ha Noi

Subject: Co-financing for GEF Project "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel"

The Vietnam Environment Admistration (VEA) under the Ministry of Natural Resources and Environment (MONRE) has the honour to agree with the Full Size Project proposal to the Global Environment Facility (GEF), entitled "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel". This project is approved and expects funding by GEF in order to be implemented in the 2022 - 2026 period. We consider this one of the top-priorities of the Law on Environmental Protection 2020 and National Implementation Plan of the Stockholm Convention in Vietnam.

According to the project identification form, the total project co-financing is 28,550,000 USD. Among this co-financing, VEA would like to confirm to mobilize and provide co-financing for the project, totalling 11,950,000 USD, including:

- In-cash contribution: 200,000 USD.
- In-kind contribution: 11,750,000 USD (through human resources, infrastructure, equipment, laboratory for POPs analysis, relevant projects/programes on environment protection and reduction of POPs release…).

During the project implementation, the VEA will mobilize potential co-financing for the project. We will ensure close collaboration and coordination with the GEF project in order to achieve common goals.

We are convinced that the project will be great benefit for global environment and Vietnam. Hereby we confirm our willingness and commitment to participate in the project implementation.

We are looking forward our successful cooperation in the longer-term.

Yours sincerely,

Dr. Hoang Van Thuc
Deputy Director General
Vietnam Environment Administration
Ministry of Natural Resources and Environment

Address: No.10 Ton That Thuyet street, Nam Tu Liem disttrict, Ha Noi, Vietnam
Website: http://www.vea.gov.vn

To be printed on letterhead of co-financer

Hanoi 18 August 2021

To: Vietnam Environment Administration
(Department of Environmental Quality Management)

Re: Co-financing commitment letter for "Reduce the Impact and Release of Mercury and POPs in Vietnam through Lifecycle Approach and Ecolabel"

Dear Madam/Sir,

I am writing to you to express our commitment to support **"Reduce the Impact and Release of Mercury and POPs in Vietnam through Lifecycle Approach and Ecolabel"** in Vietnam that was proposed to the Global Environment Facility (GEF) for funding.

This is to confirm the co-financing contribution of Project "Accelerating Private Sector Engagement in Climate Resilient and Low Emission Investment Opportunities in Viet Nam's NDC" to the above-mentioned project, should the proposal be approved, with a total value of $600,000. The Project aims to advance the business engagement in the Viet Nam NDC, with a deep dive in greening two agriculture commodities, dragon fruit and shrimp, in Binh Thuan and Bac Lieu provinces. The project is supporting private sector, including SMEs and agriculture cooperatives, with climate resilient and low carbon technologies, new climate financing facilities and other Public private partnership incentives, to green the agriculture supply chains with a three-year timeframe from 2021-2023.

It would be great to synergize this with the "Reduce the Impact and Release of Mercury and POPs in Vietnam through Lifecycle Approach and Ecolabel", especially the activity related to replacement of mercury contained equipment in agriculture.

Sincerely yours,



_____

Bui Viet Hien
Project Manager
Programme Analyst on Climate Change and Resilience, UNDP Vietnam

21 Ngo Quyen Str., Hanoi,
Vietnam.
Tel: (84-4) 2220 5057
Fax: (84-4) 2220 5028
Website:
www.vinachemia.gov.vn

VIETNAM CHEMICALS AGENCY
MINISTRY OF INDUSTRY AND TRADE
THE SOCIALIST REPUBLIC OF VIETNAM

Hanoi, July 09th 2021

To: VIETNAM ENVIRONMENT ADMINISTRATION, MONRE
Cc: United Nations Development Programme (UNDP) in Vietnam

Subject: Letter of Commitment

Vietnam Chemicals Agency would like to present its compliments to the Vietnam Environment Administration (VEA) under MONRE and UNDP Vietnam and has the honor to refer to the Project of Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel (hereinafter the Project).

Vietnam Chemicals Agency under the Ministry of Industry and Trade commit our co-financing contribution to support activities of the Project in conjunction with the commitment of funds to this initiative by the Global Environment Facility (GEF) through UNDP as below:

1. The implemented projects related to chemical management are "building a national chemical list and a national chemical database"; "building a laboratory for new chemical assessment and chemical safety control". The total contribution is 2 million dollars.

2. Participating to implement the related activities of the Project.

Vietnam Chemicals Agency avails itself of this opportunity to renew to the VEA and UNDP Vietnam the assurances of its highest consideration./.

Yours sincerely,

CỤC HÓA CHẤT

Luu Hoang Ngoc
Deputy Director General

Cc:
- As above;
- File: VT, QLHC.

MINISTRY OF HEALTH
HEALTH ENVIRONMENT MANAGEMENT AGENCY

No: 467/MT-SKHC

Subject: coordination in the implementation of the GEF7 project

THE SOCIALIST REPUBLIC OF VIET NAM
Independence – Freedom – Happiness

Hanoi, August 13th, 2021

Translated version

To: Vietnam Environment Administration (VEA) - Ministry of Natural Resources and Environment (MONRE)

The Health Environment Management Agency (VIHEMA), Ministry of Health was received the Official Document No. 2150/TCMT-QLCL dated July 28th 2021 of Vietnam Environment Administration (VEA) on coordination in the implementation of the GEF7 project. VIHEMA has the following comments:

1. VIHEMA agree to participate in implementation of the Project "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel" (the POP/Mercury Project) which is leading implemented by VEA and UNDP funded the Global Environment Facility (GEF) to reduce release of POPs/Mercury in Vietnam. VIHEMA commits to contribute total co-financing for the Project (through human resources, infrastructure, office) with the contribution of US$ 500,000 (equal 11,500,000,000 VND).

2. VIHEMA would like to appoint a focal point official to coordinate in the project development and implementation in the Annex.

VIHEMA would like to send VEA.

Sincerely./.

Recipients:
- as above;
- Save: VT, SKHC

DIRECTOR

(Signed and Sealed)

Nguyen Thi Lien Huong

Annex: FOCAL POINT OFFICIAL IMPLEMENTING THE PROJECT

(According to Official Document No. 467/MT-SKHC dated 13th August, 2021 of Health Environment Management Agency)

No	Name	Position	Office	Telephone number/Email
1	Tran Anh Dung	Head of Division of Chemical and Environmental Health Management	Health Environment Management Agency	0912257155 dungtranvn@gmail.com

BỘ Y TẾ
CỤC QUẢN LÝ MÔI TRƯỜNG Y TẾ

Số: 467 /MT-SKHC
V/v phối hợp thực hiện dự án GEF7

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hà Nội, ngày 13 tháng 8 năm 2021

tienphtt.mt_Phạm Thị Tiến_17/08/2021 15:13:49

Kính gửi: Tổng cục môi trường – Bộ Tài nguyên và Môi trường

Cục Quản lý môi trường y tế - Bộ Y tế nhận được công văn số 2150/TCMT-QLCL ngày 05/7/2021 về việc phối hợp thực hiện dự án GEF7. Cục Quản lý môi trường y tế có ý kiến như sau:

1. Cục Quản lý môi trường y tế đồng ý tham gia thực hiện dự án "Giảm thiểu phát thải và tác động của các chất ô nhiễm hữu cơ khó phân hủy (POP), hóa chất nguy hại và thủy ngân thông qua quản lý vòng đời sản phẩm và nhãn sinh thái" (sau đây gọi tắt là Dự án POP/thủy ngân) do Tổng cục Môi trường và UNDP phối hợp thực hiện từ nguồn tài trợ của GEF nhằm hướng đến giảm thiểu POP/thủy ngân ở Việt Nam. Cục cam kết sẽ đóng góp vốn đối ứng cho dự án (thông qua hình thức: nhân sự, cơ sở vật chất, văn phòng) là 500.000 USD (tương đương 11.5 tỷ đồng).

2. Cục Quản lý môi trường y tế xin cử đầu mối phối hợp xây dựng và thực hiện dự án với thông tin tại Phụ lục kèm theo.

Cục Quản lý môi trường y tế xin gửi Quý Tổng Cục tổng hợp. Trân trọng cảm ơn./.

Nơi nhận:
- Như trên;
- Lưu: VT, SKHC.

CỤC TRƯỞNG

CỘNG HÒA X.H.C.N VIỆT NAM
CỤC QUẢN LÝ MÔI TRƯỜNG Y TẾ
BỘ Y TẾ

Nguyễn Thị Liên Hương

Phụ lục: CÁN BỘ ĐẦU MỐI PHỐI HỢP XÂY DỰNG VÀ THỰC HIỆN DỰ ÁN

(Kèm theo Công văn số /MT-SKHC……. ngày tháng năm 2021 của Cục Quản lý môi trường y tế)

tienhtt.mt_Ha Thi Tien Tien 17/08/2021 11:13:49

STT	Họ và tên	Chức vụ	Cơ quan	Số điện thoại/Email
1	Trần Anh Dũng	Trưởng phòng Quản lý sức khỏe môi trường và Hóa chất	0912257155	dungtranvn@gmail.com

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT
VIET NAM ENVIRONMENT PROTECTION FUND
No: 1503/QBVMT-KH&HTQT
Subject: Intend to participate the GEF project leading by Vietnam Environment Administration

THE SOCIALIST REPUBLIC OF VIET NAM
Independence – Freedom – Happiness

Hanoi, July 12th, 2021

Translated version

To: Vietnam Environment Administration

In response to Official Document No. 1874/TCMT-QLCL dated July 5th 2021 of Vietnam Environment Administration (VEA) on coordination in the implementation of the GEF7 project, the Vietnam Environmental Protection Fund (VEPF) has the following comments:

1. Agree to participate in implementation of the Project "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel" (the Project) which is leading implemented by VEA and UNDP.

VEPF expects to be contributed the funds to implement the mission (component) "Green Credit" within project framework. VEPF is a pioneer agency in providing green credit for environmental protection projects according to Appendix II of Decree no. 40/2019/NĐ-CP, including projects of centralized wastewater treatment systems in industrial zones and industrial clusters; solid waste treatment; solar power and renewable energy.

If the Project allocates the fund for VEPF for capacity building, development of professional guidelines, improvement of the institution of Green Credit, VEPF will have a basis to promote the concessional lending activities and be able to commit to providing Green Credit (co-financing) of approximately 5,000,000 USD (five million USD, equivalent to 115 billion VND) through concessional loans for investment projects of wastewater treatment of industrial zones and industrial clusters, solid waste treatment nationwide (which may include the number of investment projects within the framework of the Project if meet the loan conditions under current regulations).

2. VEPF appoints Mr. Le Quang Linh (mobile: 0986811809; email: quanglinhle141@gmail.com), the officer of Division of Planning and International Cooperation, is the focal point offical to coordinate with VEA.

Sincerely thank you and look forward to your attention and support./.

Recipients:
- Deputy Minister Vo Tuan Nhan;
- Deputy Director Duong Thi Phuong Anh;
- Divisions: TDTT, TDKTT;
- Save: VT, KH&HTQT. QL.(04)

DIRECTOR

(Signed and Sealed)

Nguyen Duc Thuan

BỘ TÀI NGUYÊN VÀ MÔI TRƯỜNG
QUỸ BẢO VỆ MÔI TRƯỜNG VIỆT NAM

Số: 1503 /QBVMT-KH&HTQT
V/v tham gia thực hiện dự án do Tổng cục Môi trường chủ trì, nguồn vốn GEF7

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hà Nội, ngày 12 tháng 7 năm 2021

Kính gửi: Tổng cục Môi trường

Phúc đáp Công văn số 1874/TCMT-QLCL ngày 05 tháng 7 năm 2021 của quý Tổng cục về việc phối hợp thực hiện dự án GEF7, Quỹ Bảo vệ môi trường Việt Nam có ý kiến như sau:

1. Đồng ý tham gia thực hiện Dự án "Giảm thiểu phát thải và tác động của các chất ô nhiễm hữu cơ khó phân hủy (POP), hoá chất nguy hại và thuỷ ngân thông qua quản lý vòng đời sản phẩm và nhãn sinh thái" (sau đây gọi tắt là *Dự án POP/thủy ngân*) do Tổng cục Môi trường và UNDP thực hiện.

Quỹ mong muốn được phân bổ kinh phí thực hiện nhiệm vụ (hợp phần) "Tín dụng xanh" trong khuôn khổ dự án. Quỹ là đơn vị tiên phong trong hoạt động cung cấp Tín dụng xanh cho các dự án đầu tư bảo vệ môi trường theo Phụ lục III Nghị định 40/2019/NĐ-CP, trong đó có cho vay ưu đãi các dự án đầu tư xử lý nước thải tập trung khu công nghiệp, cụm công nghiệp; xử lý chất thải rắn; điện mặt trời và năng lượng tái tạo.

Nếu Quỹ được phân bổ kinh phí trong khuôn khổ *Dự án POP/thủy ngân* để tăng cường năng lực cán bộ, xây dựng hướng dẫn nghiệp vụ, hoàn thiện thể chế về Tín dụng xanh, thì Quỹ sẽ có cơ sở để đẩy mạnh hoạt động cho vay ưu đãi và do đó có thể cam kết cung cấp Tín dụng xanh (co-financing) khoảng 5.000.000 USD (năm triệu đô la Mỹ, tương đương khoảng 115 tỷ đồng) thông qua hoạt động cho vay ưu đãi đối với các dự án đầu tư xử lý nước thải tập trung khu công nghiệp, cụm công nghiệp, xử lý chất thải rắn trên phạm vi toàn quốc (trong đó có thể bao gồm một số dự án đầu tư trong khuôn khổ *Dự án POP/Thủy ngân* nêu trên nếu đáp ứng đủ điều kiện vay vốn theo quy định hiện hành).

2. Quỹ Bảo vệ môi trường cử ông Lê Quang Linh (điện thoại 0986811809, email quanglinhle141@gmail.com), chuyên viên phòng Kế hoạch và Hợp tác quốc tế là cán bộ đầu mối phối hợp với quý Tổng cục.

Trân trọng cảm ơn và mong nhận được sự quan tâm hỗ trợ của quý Tổng cục./.

Nơi nhận:
- Như trên;
- Thứ trưởng Võ Tuấn Nhân (để b/c);
- Phó Giám đốc Dương Thị Phương Anh;
- Các phòng: TDTT, TDKTT;
- Lưu: VT, KH&HTQT. QL.(04)

GIÁM ĐỐC

QUỸ BẢO VỆ MÔI TRƯỜNG VIỆT NAM

Nguyễn Đức Thuận

VIETNAM PLASTICS ASSOCIATION (VPA)
156 Nam Ky Khoi Nghia, District 1, Ho Chi Minh city, Vietnam
Tel: 028-35218552 Fax: 028-35218554 Email: info@vpas.vn

COMMITMENT LETTER OF PROJECT PARTICIPATION

Hanoi, July 31, 2021

To: VIETNAM ENVIRONMENT ADMINISTRATION, MONRE

Cc: United Nations Development Programme (UNDP) in Vietnam

After carefully considering the Project Summary, suggestions of Ministry of Natural Resouces and Environment (MONRE) and the Official Letter No. 1873/TCMT-QLCL dated 5th July, 2021 about co-financing and participating in the Project "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel" (hereinafter the Project) funded by Global Environment Facility (GEF) in GEF7 priod, Vietnam Plastic Association (VPA) would like to give some opinions as following:

We currently has about 400 members (enterprises, companies...) who are carrying out import, export, production and business activities in the plastic industry/field (related to POPs and harmful chemicals). In order to reduce the use and emission of POPs and harmful chemicals and enforce well regulations on environmental protection, we would like to confirm that:

- VPA would like to participate the Project implementation;
- VPA commits to contribute total co-financing for the Project *(such as infrastructure, equipment investment of environment protection and reducing emission of POPs and other harmful chemicals…)* during the period of participating the Project, with US$ 3,500,000 (equal 80,000,000,000 VND).

We would like to appoint a focal point official to coordinate with the Vietnam Environment Administration in the process of project development and implementation in the Annex.

Your sincerely,

President

HỘI NHỰA VIỆT NAM HỘI ĐỒNG QUẢN TRỊ

Ho Duc Lam
Chairman of Vietnam Plastics Association

Annex: FOCAL POINT OFFICIAL IMPLEMENTING THE PROJECT

(According to Official Letter No. 26 dated 31 July, 2021

of Vietnam Plastics Association)

No	Name	Position	Office	Telephone number/Email
1	Huynh Thi My	General Secretary	Vietnam Plastics Association	0908249864/ hongmyvpa68@gmail.com

VIETNAM CORROSION ASSOCIATION (VICORRA)
Room 130, Building A2, No. 18 Hoang Quoc Viet street, Hanoi city, Vietnam
Tel: 024-38680070Fax: 024-38680070 Email: vicorra@gmail.com

COMMITMENT LETTER OF PROJECT PARTICIPATION

Hanoi, July 13, 2021

To: VIETNAM ENVIRONMENT ADMINISTRATION, MONRE

Cc: UNDP Vietnam

After studying the Project Summary and the Official Letter No. 1873/TCMT-QLCL dated 5th July, 2021 regarding the participation in the Project "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel" (hereinafter the Project) sponsored by Global Environment Facility (GEF) in GEF7 priod, we would like to confirm that:

We currently has 62 members (enterprises, companies...) who are carrying out import, export, production and business activities in the corrosion and protection of metals (related to POPs and harmful chemicals). In order to reduce the use and emission of POPs and harmful chemicals and enforce well regulations on environmental protection, we would like to participate the implementation of related activities of the Project and appoint a focal point official to coordinate with the Vietnam Environment Administration in the process of the project implementation in the Annex.

We would like to commit the total co-financing contribution for the Project *(such as such as infrastructure, equipment investment of reducing environment pollution and emission of POPs and other harmful chemicals...)* during the period of participating the Project, with US$ 3,000,000 (equal 69,000,000,000 VND).

Your sincerely,

PRESIDENT

TRUNG ƯƠNG HỘI

Prof. Dr. Nguyen Duc Hung

Annex: FOCAL POINT OFFICIAL IMPLEMENTING THE PROJECT

(According to Official Letter No. dated 13 July, 2021

of Vietnam Corrosion Association)

No	Name	Position	Office	Telephone number/Email
1	Prof. Dr. Mai Thanh Tung	Vice president of Vietnam Corrosion Association (VICORRA)	Hanoi University of Science and Technology	0912316363/ tung.maithanh@hust.edu.vn
2	Dr. Nguyen Thi Thu Huyen	Secretary of Vietnam Corrosion Association (VICORRA)	Hanoi University of Science and Technology	0916833409/huyen.nguyenthithu@hust.edu.vn

VINA FOAM VIETNAM CO.LTD
Address : Lot 9.2 IN, road 4, VSIP Industrial Zone, Cam Dien Ward, Cam Giang District, Hai Duong Province, Vietnam.
Office : Floor 1, TT17-18, Honor Village, 204 Nguyen Tuan street, Thanh Xuan District, Hanoi City, Vietnam.
Tel: 0247 306 2802 Email: info@vinafoam.vn

COMMITMENT LETTER OF PROJECT PARTICIPATION

Hanoi, July…., 2021

To: VIETNAM ENVIRONMENT ADMINISTRATION, MONRE
Cc: UNDP Vietnam

After carefully considering the Project Brief and the Official Letter No. 1873/TCMT-QLCL dated 5th July, 2021 regarding the participation in the Project "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel" (hereinafter the Project) sponsored by Global Environment Facility (GEF) in GEF7 priod, we would like to confirm as following :

Vinafoam is specializing in the production and supply of fire foam concentrates, handling a variety of fire cases, especially for the fields of: industry, aviation, marine, transportation, fire brigade, warehousing, urban, oil and gas exploitation, petrochemical industry... During the process of operation, VinaFoam takes the goal of environmental protection along with product quality as the criterion.

In order to reduce the use and emission of POPs and harmful chemicals and enforce well regulations on environmental protection, we would like to participate in the Project implementation and commit to contribute total co-financing for the Project (*such as infrastructure, equipment ...)* during the period of participating the Project, with the contribution of US$ 2,000,000 *(equal 46,000,000,000 VND).* The specific types of reciprocal capital contribution will be based on the agreement between Vietnam Environment Admistration and Vinafoam Co.,Ltd to match with project progress through documents or reports approved by authority organizations.

We would like to appoint a focal point official to coordinate with the Vietnam Environment Administration in the process of the project implementation in the Annex.

REPRESENTATIVES OF COMPANY

M.S.D.N: 0801230026
CÔNG TY TNHH VINA FOAM VIỆT NAM
H.CẨM GIÀNG - T.HẢI DƯƠNG

CHỦ TỊCH HĐTV
Ngô Hồng Tiến

Annex: FOCAL POINT OFFICIAL IMPLEMENTING THE PROJECT

(According to Official Letter No. dated .... July, 2021 of Vinafoam Vietnam Co.Ltd)

No	Name	Position	Office	Telephone number/Email
1	Dinh Quoc Tuan	Chief of Technical Department	Technical Department	0919526288

Annex 11. 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 12: 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 13: Partners Capacity Assessment Tool and HACT assessment

(File attached separately)

Partner Capacity Assessment Tool - Introduction & Overview

Background: This Partner Capacity Assessment Tool (PCAT) is designed to streamline UNDP's approach to capacity assessments of project Implementing Partners (IPs) and Responsible Parties (RPs). It does this by consolidating all of the existing partner capacity assessment checklists, and eliminating duplicative questions and questions that don't add value. The PCAT also saves time by: (i) providing rapid guidance on which capacity assessments will ensure project risks are identified; and (ii) generating a summary report of the resulting risk assessments, risk mitigation actions and associated budgets for inclusion in the Project Document. The PCAT also includes capacity assessments for new programming instruments, including On-Granting and Performance-Based Payment Agreements.

Purpose: The UNDP Enterprise Risk Management (ERM) Policy identifies 'Capacities of the Partners' as a key Strategic Risk to be managed for the success of UNDP's work. The PCAT is designed to assess the level of risk that is present when UNDP works with Partners to implement programmes and projects. The level of risk is identified by analyzing partner capacity and matching project management and oversight with the level of risk assessed. By identifying areas for capacity improvement, the PCAT should also help to reduce future Partner risk levels if the capacity building actions are implemented and sustained.

Applicability: The PCAT is applicable to all Partners, including IPs and RPs, in all contexts, including crisis contexts. It also applies to Grantees for determining eligibility to receive a grant. The PCAT outlines the minimum requirements for capacity assessments based on UNDP thresholds (such as USD 300,000 for HACT). This does not preclude offices doing additional capacity assessments for Partners that fall below the thresholds should they consider this to be beneficial for their office.

Responsibility and Timing: The PCAT should be completed by the Project Developer as soon as possible during the Project Design phase, with HACT Micro-Assessment inputs from the Third-Party Service Provider where required. The PCAT generates a summary of the results of the Partner capacity assessments that can be attached to the Project Document, eliminating the need to write long-form/narrative reports on capacity assessment results.

How to Use the PCAT: Follow these 4 steps:

Step 1: Review Pre-Requisites for Partnering:	Start the PCAT with 'Pre-Requisites for Partnering.' Here you will enter background information about your office and the Partner, and then review 5 questions to assess whether the Partner meets certain basic criteria for partnering with UNDP (such as not being on UN Sanctions, UNDP Vendor Sanctions or UN Global Marketplace Ineligibility Lists). If the Partner meets the 'Pre-Requisites for Partnering,' you will then move to the next section 'Capacity Assessment Scoping.' If the Partner does not meet the 'Pre-Requisites for Partnering,' you will be advised to do no further assessments as the Partner cannot work with UNDP.	Go to Pre-Requisites for Partnering
Step 2: Complete Capacity Assessment Scoping	The PCAT is a dynamic tool that will display only the capacity assessments you need based on the answers you provide to 9 'assessment scoping' questions. These questions include: (i) whether or not this is a humanitarian project for which a rapid capacity assessment is needed; (ii) what role the Partner will fulfill on the project (IP vs RP vs Other); (iii) what type of organization the Partner is (Govt, CSO/NGO, Private Sector etc); (iv) whether the Partner will receive more than USD 300,000 during the Programme Period; (v) whether a HACT Micro-Assessment has been done; (vi) whether the Partner will be managing construction activities; (vii) whether the Partner will undertake grant-making activities on behalf of UNDP (on-granting); (viii) in the case of RPs, whether a Performance-Based Payment Agreement (PBPA) will be used for the project; and (ix) whether the PBPA will exceed USD300,000. Your answers to these questions will determine which capacity assessments are displayed for completion. You will be provided with a link that will take you straight to the assessment(s) to be completed. Also, all of the background information you entered above for your office and the Partner will automatically be brought forward.	Go to Capacity Assessment Scoping
Step 3: Complete the Capacity Assessment(s)	Complete the capacity assessment(s) as needed. Based on the results of the capacity assessment and the level of assessed risk, you will be asked to identify risk mitigation strategies (such as capacity building actions and/or enhanced monitoring & assurance activities) and the associated budget required to implement those strategies.	Follow the links provided on the Capacity Assessment Scoping page
Step 4: Conclude on the Capacity Assessment(s)	The PCAT will automatically summarize the results of the completed capacity assessments, providing you with a concise document to attach to your Project Document.	Go to Conclude on Capacity Assessment
Optional: Additional Guidance Resources	If you need additional guidance, review the IP and/or RP decision trees, which provide step-by-step overviews of the capacity assessments needed; or try the POPP Points to Remember for important points on HACT and on specific programme/project instruments, such as On-granting or Performance-Based Payment Agreements (PBPAs).	IP Decision Tree RP Decision Tree HACT - POPP Points to Remember On-Granting - POPP Points to Remember PBPAs - POPP Points to Remember

Version 1.2 - February 2019

Partner Capacity Assessment Tool - Step 1: Pre-Requisites for Partnering - applicable to all Partners

Return to PCAT Overview page

Applicability: This 'Pre-requisites for Partnering' section should be completed for all UNDP partners, regardless of whether they are IPs, RPs, Other Partners or grant recipients.

Responsibility & Timing: The Project Developer should complete this 'Pre-requisites for Partnering' as early as possible in the Project Design phase to ensure that the proposed partner is not a prohibited organization and does not engage in practices that are inconsistent with UNDP's social & environmental standards and code of ethics.

Background Information (Enter this information here and it will be carried throughout the PCAT - no need to enter it again)

Region	Asia Pacific	Comments: (Optional)
Office	Viet Nam	Implementing Partner: Ministry of Natural Resources and Enviornment, Vietnam
Programme Start	1-Dec-21	Focal point in MONRE to propose the Project: Vietnam Environment Administration
Programme End	31-Dec-26	Project title: "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel "
Partner Name	Ministry Of Natural Resources and Environment	
Partner budget for this Project (USD)	$4,600,050	

ERM Risk Category	Risk being addressed	Q. #	Pre-requisites for Partnering Questions	What to review to determine your response	Response	Action Needed
Regulatory (6.3, FRR)	Violation of UN sanctions	1	Is the organization listed on the Consolidated United Nations Security Council Sanctions List, the UNDP vendor sanctions list or the UN Global Marketplace Ineligibility List ?	UN Sanctions List UNDP Vendor Sanctions List UN Global Marketplace Ineligibility List (accessible to UNDP Buyer Roles)	No	**Continue to Question 2**
						Comments
Strategic (7.5 Code of conduct & ethics), Social & Environmental (1.1-1.12)	Violation of programming principles and ethical standards	2	Is there any credible evidence that the organization persistently commits acts that violate: (i) UNDP's social and environmental standards (human rights, gender equality, labor conditions, environmental sustainability standards); or (ii) code of conduct/ethics standards to such an extent that UNDP's association with the organization cannot be adequately managed or justified?	* Internet/press search * Donor evaluations, assessments * Significant criticism from donors/CSOs/ media/social media or other significant partners of UNDP locally or globally * Significant criticism from governmental agencies / political parties that makes UNDP's partnering politically sensitive * Recurring local or global public events against the organization (e.g. local demonstrations, online protests, etc) * Relevant legal case in progress/in court etc.	No evidence found	
Strategic (7.6 Public opinion & media)	Damage to UNDP's reputation	3	Has an internet/donor evaluation report search revealed any credible and significant adverse publicity or controversy about the organization that could damage UNDP's reputation by association to such an extent that the association cannot be adequately managed or justified?		No adverse publicity found	
Regulatory (6.3, FRR)	Absence of neutrality	4	If the Partner is a CSO/NGO or private sector organization, is there any credible evidence that the organization has political affiliations that could compromise UNDP's neutrality, perceived or actual, in a way that cannot be adequately managed and justified?		N/A	
Financial (2.3 Corruption & Fraud); Strategic (7.5 Code of Conduct & Ethics)	Fraud, corruption and potential damage to UNDP's reputation	5	If there is a history of fraud and/or any potential Conflicts of Interest (CoI) in relation to this organization, have they been reviewed and satisfactorily resolved or if not, can they be adequately managed or justified in the context of this specific project? (Consider such as issues as the organization employing any individual/s who is/are currently holding any position in UNDP or the UN OR any individual/s who is/are related by blood or affinity to any UNDP or UN staff member.)	* Internet/press search on fraud issues * Donor evaluations or assessments for fraud issues * Discussions and/or documents and/or written confirmation from the Partner disclosing conflicts of interest or such relationships	No evidence of fraud or conflicts found	
Conclusion on 'Pre-Requisites for Partnering' & Next Steps				**Proceed with this Partner. Continue to 'Section 2: Capacity Assessment Scoping'**		

Capacity Assessment Scoping

Partner Capacity Assessment Tool - Step 2: Capacity Assessment Scoping - applicable to all Partners

Purpose: This 'Capacity Assessment Scoping' tool is designed to assist you in identifying the Partner capacity assessments that will help manage risks stemming from UNDP's engagement with IPs, RPs or Other partners. It will lead you through a series of questions and based on your responses, indicate for you the capacity assessments that should be completed, including HACT Micro-Assessments.

Applicability: This 'Capacity Assessment Scoping' should be completed for all UNDP partners, regardless of whether they are IPs or RPs or Private Sector partners fulfilling other roles.

Responsibility & Timing: The Project Developer should complete this 'Capacity Assessment Scoping' as early as possible in the Project Design phase to ensure that the Capacity Assessments needed are identified early and arrangements made for their timely completion.

Background Information (carried forward from 'Partner Pre-requisites' worksheet)		
Region	Asia Pacific	Comments: (Optional)
Office	Viet Nam	Implementing Partner: Ministry of Natural Resources and Enviornment, Vietnam
Programme Start	1-Dec-21	Focal point in MONRE to propose the Project: Vietnam Environment Administration
Programme End	31-Dec-26	Project title: "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel "
Partner Name	Ministry Of Natural Resources and Environment	
Partner budget for this Project (USD)	$ 4,600,050	

Capacity Assessment Scope Questions	Select Responses from the Dropdown menus
1. Is this a humanitarian project for which a rapid CSO/NGO Partner capacity assessment is needed?	No
2. What role will this organization fulfil on this project?	IP
3. What is the nature of this organization? (Govt, CSO etc)	Government
4. Will this organization receive more than US $300,000 during the Programme Period?	Yes
5. Has a Partner Capacity Assessment (including HACT Micro-Assessment) already been performed during the Programme Period?	Yes
6. Will the Partner being implementing construction activities?	No
7. Will the Partner undertake grant-making activities on behalf of UNDP?	No

If you don't see the assessments you expect, please refresh your answers to the questions above starting with Q1.

Capacity Assessments needed for this IP:	Links to these Capacity Assessments
Programmatic & HACT Micro-Assessment not needed	

Conclusion: No Capacity Assessments are needed. No further action is required

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Partner Capacity Assessment Tool: Programme & Project Management Assessment

Purpose: This worksheet is designed to assess the Partner's Programme & Project Management capacity. It covers topics that are not included in the HACT Micro-Assessment.

Responsibility & Timing: The Programme & Project Management capacity assessment should be completed by the Project Developer as soon as possible in the Project Design Phase.

Background Information (carried forward from 'Partner Pre-requisites' worksheet)

Region	Asia Pacific	Comments: (Optional)
Office	Viet Nam	DCC - Department of Climate Change, Ministry of Natural Resources and Environment (MONRE), is the IP
Programme Start	1-Dec-21	
Programme End	31-Dec-26	
Partner Name	Ministry Of Natural Resources	
Partner budget for this Project (USD)	$ 4,600,050	

Guide for determining the relative importance to this project of each capacity assessed below[1]:

The risk categories below should be used to assess the relative importance of each capacity to this specific project:

High Risk: This capacity is **critical** for the success of the project. Without this capacity there is a **high likelihood** that the IP will not fulfil the project goals.

Substantial Risk: This capacity is **very important** for the success of the project. Without this capacity there is a **substantial likelihood** that the IP will not fulfil the project goals.

Moderate Risk: This capacity is **important** for the success of the project. Without this capacity there is a **moderate likelihood** that the IP will not fulfil the project goals.

Low Risk: This capacity is **not important** for the success of this project. Without this capacity there is a **low likelihood** that the IP will not fulfil the project goals.

Programme & Project Management Assessment

ERM Risk Category	Risk Being Addressed	Q.#	Questions	Response (Yes, No or N/A)	Relative Importance of Each Capacity to this Project?[1]	Risk Assessment points	Risk Score based on Response	Remarks/ comments
Political (5.2 Political Will)	Absence of political commitment	1	Is the organization's leadership willing to implement this project?	Yes	High	4	0	
Political (5.3 Political instability; 5.4 Change/turnover in govt; 5.5 Armed conflict and instability)	Difficult Programmatic Context	2	Is there a stable enabling environment for the Partner to operate within, in terms of political changes or social unrest, ongoing conflicts, poor physical infrastructure, natural disasters, humanitarian crises?	Yes	High	4	0	
Strategic (7.3 Partner capacities)	Misalignment of programmatic focus; Inadequate experience	3	Are the project outputs proposed to be delivered by this Partner aligned with its mandate, constituency base, and experience? (Consider scale of project, geographic spread, complexity of results to be achieved).	Yes	High	4	0	
Strategic (7.3 Partner capacities)	Inadequate Programmatic Reporting	4	Does the Partner provide its stakeholders and beneficiaries with an annual or periodic programme performance report and do they have an opportunity to provide feedback on the IP's programme performance, either through public meetings or other grievance mechanisms?	Yes	Moderate	2	0	
Strategic (7.3 Partner capacities)	Poor Communications	5	Does the Partner have established protocols and appropriate infrastructure to communicate internally (including sub-offices and to sub-recipients) and to external stakeholders (donors, partners, other implementers, government, etc.)?	Yes	Substantial	3	0	
Strategic (7.3 Partner capacities)	Absence of Critical Networks	6	If the Partner depends on any upstream organization(s) for its successful performance, is there any evidence that this dependent relationship will cease or be impaired during the duration of this project? (Consider: (i) type of relationship - local or international network, association, affiliated group, municipal or provincial government drawing on central government support; and (ii) nature of dependency - financial, programmatic, administrative)	No	Low	1	0	

ERM Risk Category	Risk Being Addressed	Q.#	Questions	Response (Yes, No or N/A)	Relative Importance of Each Capacity to this Project?[1]	Risk Assessment points	Risk Score based on Response	Remarks/ comments
Strategic (7.3 Partner capacities)	Absence of/weaknesses in Critical Networks	7	Has the Partner assessed the capacity of any downstream partners it will rely upon for the success of the project, and if capacity gaps were found, has it developed a suitable plan to address them (such as capacity building and/or increased monitoring)?	N/A	Substantial	3	0	
Strategic (7.3 Partner capacities)	Absence of Critical Networks	8	Is the Partner party to knowledge networks, coordinating bodies, and other fora that are essential for the successful implementation of this project?	Yes	Moderate	2	0	
Strategic (7.3 Partner capacities)	Inadequate Technical Capacities	9	Do the skills and experience of the Partner's technical professionals match those required for the project and will they be available for the duration of the project (particularly if the project is implemented in remote or challenging geographical areas)?	Yes	Select	0	0	
Strategic (7.3 Partner capacities)	Inadequate Technical Infrastructure	10	Does the Partner have the necessary technical and administrative infrastructure (e.g, offices, laboratories, equipment, software, technical data bases, etc.) to support the implementation of the project), including in remote areas or regions if required?	Yes	Select	0	0	
Strategic (7.3 Partner capacities)	Poor Absorption Capacity	11	If the existing programmatic and financial management capacities (staffing, systems, etc) are not adequate to meet the additional requirements of the project, does the Partner have the ability to strengthen the capacities within a reasonable timeframe so that the project is not significantly delayed? (i.e. can it recruit staff and/or implement a suitable system promptly?)	Yes	Moderate	2	0	
Strategic (7.3 Partner capacities)	Personnel Limitations	12	If the organization has a salary scale that would apply to project personnel, would that scale inhibit hiring the best candidates?	No	Moderate	2	0	
Strategic (7.5 Code of conduct & ethics), Social & Environmental (1.1-1.12)	Violation of programming principles and ethical standards	13	Does the Partner have an internal policy and a training programme for personnel on the prevention of and response to sexual harassment (SH) and sexual exploitation and abuse (SEA)? ?	Yes	Select	0	0	
Strategic (7.5 Code of conduct & ethics), Social & Environmental (1.1-1.12)	Violation of programming principles and ethical standards	14	Does the Partner screen their personnel, and/or partners they engage with, for previous involvement or alleged involvement in SH or SEA?	No	Low	1	1	
Strategic (7.5 Code of conduct & ethics), Social & Environmental (1.1-1.12)	Violation of programming principles and ethical standards	15	Does the Partner have a mechanism in place to report and monitor response to allegations of SH and SEA by and against their personnel? *(Consider available reporting mechanisms such as emails, hotlines, phone numbers, contact person etc.)*	Yes	Low	1	0	
Strategic (7.5 Code of conduct & ethics), Social & Environmental (1.1-1.12)	Violation of programming principles and ethical standards	16	Does the Partner have the capacity - internal or external - to investigate allegations of SH and SEA, and the ability to refer victims to appropriate victim assistance services (e.g. medical, legal or psychosocial)? *(Consider information on available capacity (such as trained investigators or access to external investigation services) and mechanisms (such as identified victim assistance providers) in a written statement.)*	Yes	Low	1	0	
Strategic (7.3 Partner capacities)	Inadequate Safety & Security	17	Does the Partner have protocols and safeguards in place to minimize the risk of harm to project-affiliated people, the environment and assets? (e.g. sexual exploitation and abuse, physical safety & security, social & environmental safeguards, etc)	Yes	Low	1	0	

ERM Risk Category	Risk Being Addressed	Q.#	Questions	Response (Yes, No or N/A)	Relative Importance of Each Capacity to this Project?[1]	Risk Assessment points	Risk Score based on Response	Remarks/ comments
Strategic (7.5 Code of conduct & ethics), Social & Environmental (1.1-1.12)	Violation of programming principles and ethical standards	18	Has the Partner advised employees, beneficiaries and other recipients to whom they should report sexual misconduct or where to they may report fraud, waste or misuse of agency resources or property? If so, does the IP have a policy against retaliation relating to such reporting?	Yes	Low	1	0	
			Overall Risk Score for this Section				**1**	
			Overall Risk Assessment for this Section	**Low Risk**				

Conclusion on Programme & Project Management Assessment	
Overall Risk Assessment	**Low Risk**
Select the risk mitigation strategies that will be employed (i.e. capacity building actions and/or enhanced monitoring and assurance activities)	Capacity building & enhanced monitoring and assurance activities
Describe the capacity building actions and/or enhanced monitoring and assurance activities that will be included in the Project Document	PST
Provide the estimated budget required for these activities (to be included in the Project Budget) ($US)	$ -
Comments on Overall Programme & Project Management Assessment: (Optional)	
LMN	

Return to Capacity Assessment Scoping

ERM Risk Category	Risk Being Addressed	Q.#	Questions	Response (Yes, No or N/A)	Relative Importance of Each Capacity to this Project?[1]	Risk Assessment points	Risk Score based on Response	Remarks/ comments

Partner Capacity Assessment Tool: Step 4: Capacity Assessment Conclusions

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Purpose: This worksheet is designed to capture the results of the Capacity Assessments completed and the resulting mitigation strategies for the risk levels identified. Risk mitigation strategies can include capacity building and/or enhanced monitoring and assurance activities. These activities should be included in the Project Document and the associated Project Budget. When completed, attach this worksheet to the Project Document.

Responsibility & Timing: This Capacity Assessment Conclusion page is automatically generated based on the results of the assessments completed in the PCAT. It should be reviewed by the Project Developer for completeness and accuracy and attached to the Project Document. If changes need to be made to this Conclusion page, they should be done on the relevant Capacity Assessment Worksheet (i.e., Programme-Project Mgt, Construction Assess, On-Granting Assess, PBPA Proposal Due Diligence, Private Sector Due Diligence, etc) so that the corrections will be captured in the relevant assessments and automatically displayed here.

Background Information (carried forward from 'Partner Pre-requisites' worksheet)

Region	Asia Pacific	Comments: (Optional)
Office	Viet Nam	Implementing Partner: Ministry of Natural Resources and Enviornment, Vietnam Focal point in MONRE to propose the Project: Vietnam Environment Administration Project title: "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel "
Programme Start	1-Dec-21	
Programme End	31-Dec-26	
Partner Name	Ministry Of Natural Resources and Environment	
Partner budget for this Project (USD)	$ 4,600,050	

Capacity Assessment Conclusions for this IP

Automatically Generated

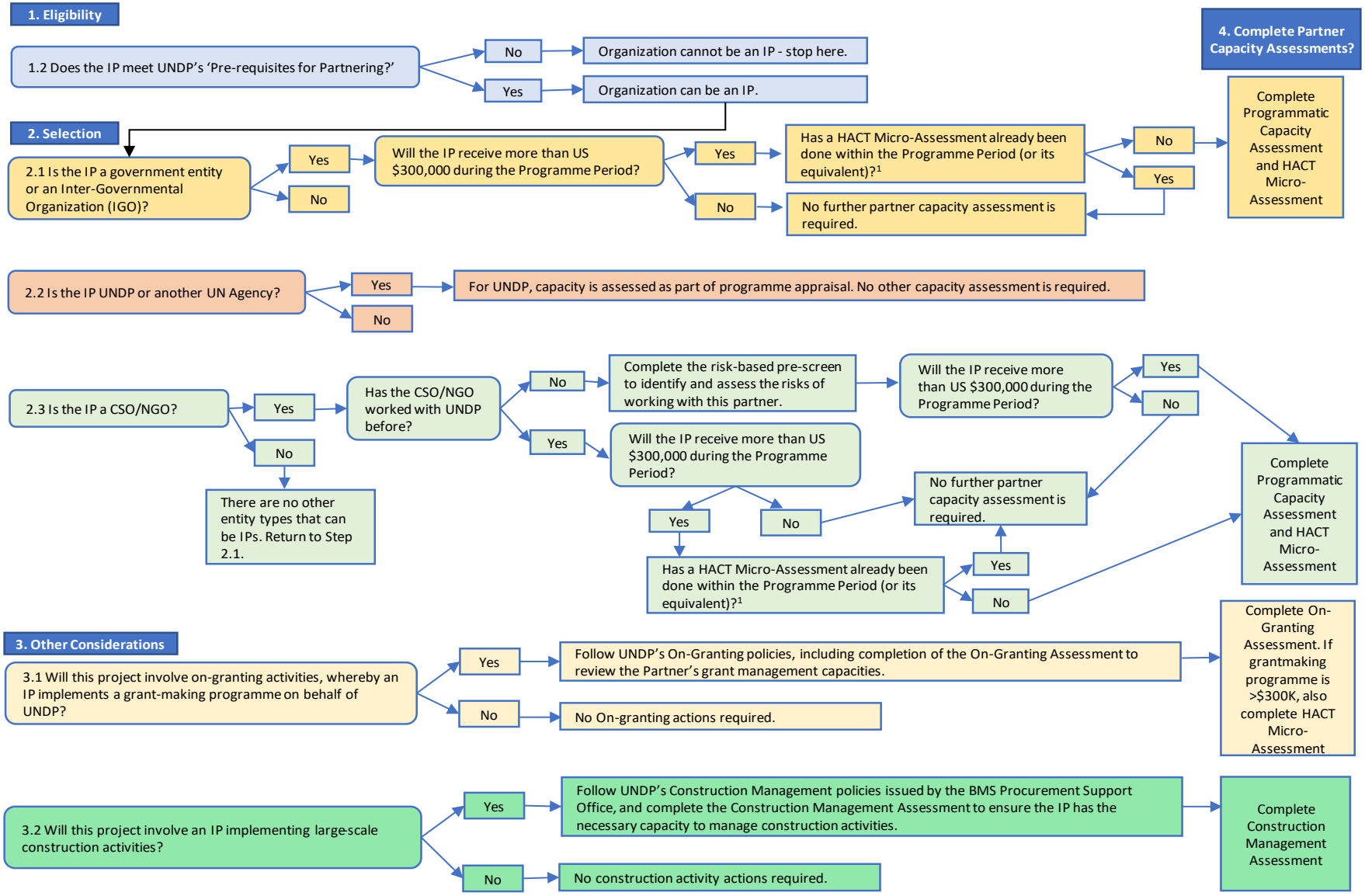
Capacity Assessment Component	Overall Risk Assessment for this Component	Risk Mitigation Strategies (i.e. capacity building actions and/or enhanced monitoring and assurance activities)	Describe the capacity building actions and/or enhanced monitoring and assurance activities that will be included in the Project Document	Estimated budget required for these activities (include in the Project Budget) ($US)	Comments (Optional)
			Total	$ -	

Comments on Overall Capacity Assessments for this IP: (Optional)

Partner Capacity Assessment Tool: Additional Resources

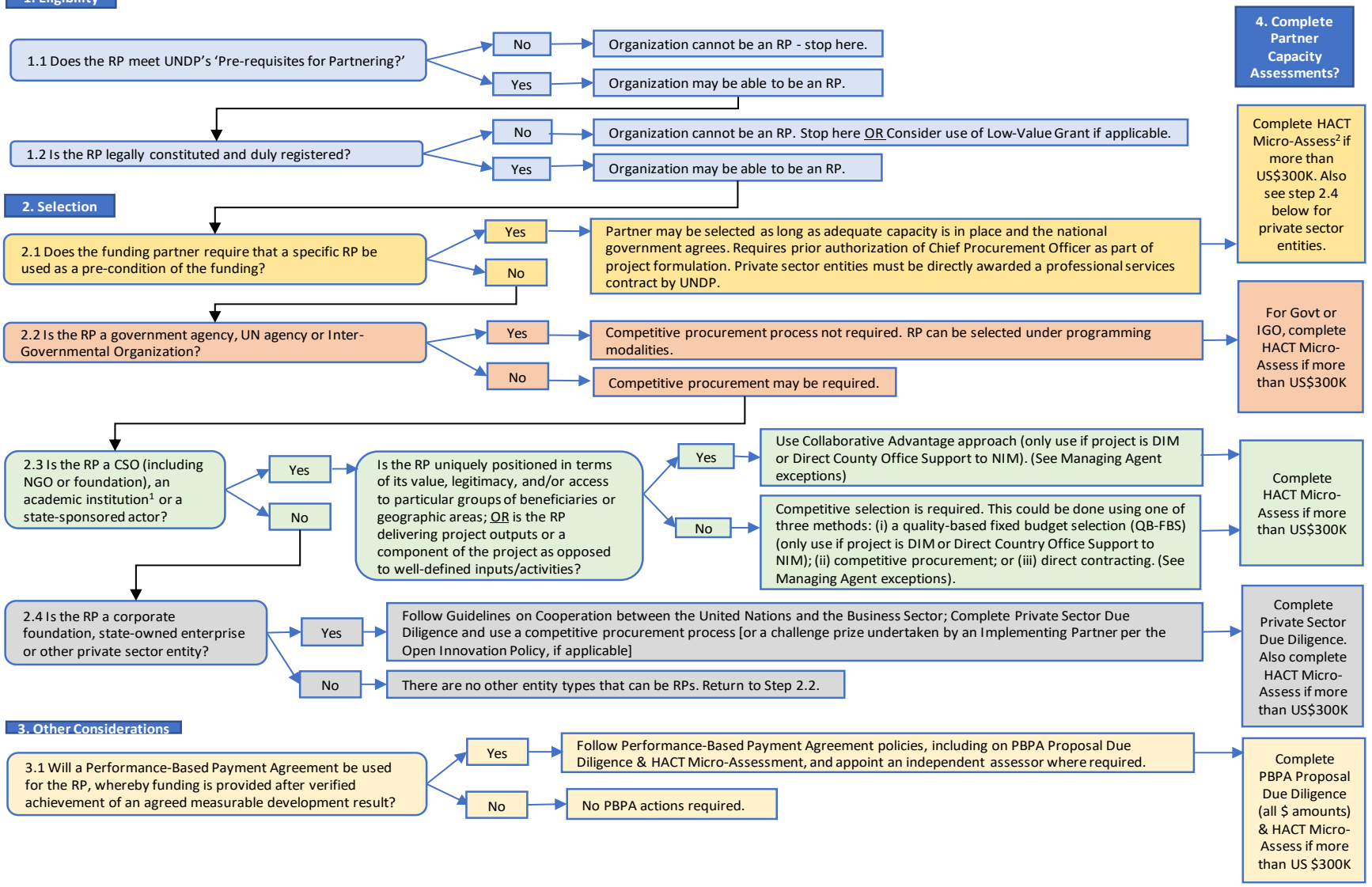
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Implementing Partner Decision Tree



Note 1: If a HACT Micro-Assessment was done in the last year of the previous Programme Period, it remains valid for the 'equivalent of a Programme Period,', notwithstanding that a new Programme has started. For example, if the Programme Period is typically five years and the HACT Micro-Assessment was done in the last year of the previous Programme Period, it remains valid for the first 4 years of the new Programme Period.

Responsible Party Decision Tree



Note 1: Academic institutions, notwithstanding their form of ownership (i.e. public or private) are considered CSOs and are treated as such in UNDP policies.

Note 2: If a HACT Micro-Assessment was done in the last year of the previous Programme Period, it remains valid for the 'equivalent of a Programme Period,', notwithstanding that a new Programme has started. For example, if the Programme Period is typically five years and the HACT Micro-Assessment was done in the last year of the previous Programme Period, it remains valid for the first 4 years of the new Programme Period.

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HACT Micro-Assessments		
For full POPP guidance on HACT, refer to this link:	POPP Guidance on HACT	HACT Performance Dashboard
Note: The HACT Micro-Assessment Questionnaire approved by UNDG must be used for all HACT Micro-Assessments:	UNDG-approved Micro-Assessment Questionnaire (June 2016 version)	

POPP Points to Remember

Purpose: The purpose of the Micro-Assessment is to assess the IP's financial management capacity (i.e. accounting, procurement, reporting, internal controls, etc.) to determine the overall risk rating and assurance activities. The risk rating, along with other available information, is also taken into consideration when selecting the appropriate cash transfer modality for an IP, based on each agency's business model. This assessment applies to both governmental and non-governmental IPs. The Micro Assessment results in an overall risk assessment, which is a key input to determining the Adjusted Risk Rating for the IP and guides the types and frequency of assurance

Applicability: The HACT framework is applicable in every country and in all situations, including emergency, crisis and post-conflict countries. The prescribed procedures apply to all UNDP offices (headquarters, regional offices and country offices) that transfer cash to implementing partners in every country and operational context.

Completion by a third-party service provider: The Micro-Assessment is performed by a third party service provider and includes a site visit to the IP. The assessment primarily consists of interviews with IP personnel and a review of relevant documentation sufficient to complete the micro assessment questionnaire.

Use of HACT framework for IP capacity development activities: HACT is a risk-based approach, and the Framework identifies developing the IP's capacity, with assistance from UNDP and other development partners, as core to managing risk. Identification of and planning to address IP capacity gaps (either through direct assistance by the country team or through other development partners) is an important element of the Framework. Country Offices should use HACT assessment results to help focus future capacity development activities in key thematic and mandated areas of development, and on developing the financial management capacity necessary for any IP. However capacity development activities do not negate the results of the micro-assessment in determining the Cash Transfer Modality (CTM).

Overall Risk Ratings: The Micro-Assessment questionnaire provides an overall risk rating based on responses provided:
- Low risk – Indicates a well-developed financial management system and functioning control framework with a low likelihood of negative impact on the IP's ability to execute the programme in accordance with the work plan.
- Moderate/Medium Risk – Indicates a developed financial management system and control framework with moderate likelihood of potential negative impact on the IP's ability to execute the programme in accordance with the work plan.
- Significant Risk – Indicates an underdeveloped financial management system or control framework with a significant likelihood of potential negative impact on the IP's ability to execute the programme in accordance with the work plan.
- High Risk – Indicates an underdeveloped financial management system and control framework with a high likelihood of potential negative impact on the IP's ability to execute the programme in accordance with the work plan.

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On-Granting Activities		
For full POPP guidance on On-Granting activities, refer to this link:	POPP Grantees (includes On-Granting)	also see the 'Low-Value Grants Operational Guide'

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POPP Points to Remember

Applicability: The On-Granting Assessment should be used for low-value grants that are awarded indirectly via 'on-granting,' an arrangement where UNDP provides funds to a grant-making institution serving as an implementing partner (under national implementation) or responsible party (under direct implementation or direct country office support services). The institution then awards grants to recipient(s) following certain specified guidelines and appropriate due diligence. The 'grant recipient' in both cases is defined as an entity that is the final beneficiary of the grant. In the case of 'on-granting', UNDP and the grant-making institution must sign an agreement that defines the terms and conditions under which UNDP will provide funding to the grant-making institution to perform the grant-making function. Such an agreement defines the implementing partner/responsible party as an entity assessed by UNDP as possessing sufficient financial and grant management skills to bear responsibility for on-granting funds to Grant Recipient(s). UNDP is responsible for assessing the grant-making institution to ensure it has the programmatic, financial and management capacities and systems to effectively undertake its roles. This is achieved through completion of the standard programmatic and financial assessments applied to UNDP's implementing partners, including HACT, AND the completion of the on-granting assessment.

Key Principles: UNDP defines low-value grants as cash awards - selected via programmatic decisions - to civil society and non-governmental partners to generate and solicit development solutions for which no repayment is typically required. If UNDP provides funds to a grant-making institution serving as either an implementing partner (under national implementation) or responsible party (under direct implementation or direct country office support services to NIM), this is called "on-granting." The institution then awards grants to recipient(s) following certain specified guidelines and appropriate due diligence, including being qualified to perform that role after an assessment of their capacity for on-granting by UNDP. The on-granting capacity assessment is based on the following 8 good grantmaking principles:

1. Outcomes are clearly defined
2. Program structure is tailored to its circumstances, target group/s and purpose
3. Governance is clear and strong
4. Risks are identified and managed
5. Decision-making is transparent and criteria-based
6. Information is available and accessible
7. Financial and grant performance are both monitored and reported on; and
8. A contribution is made to the knowledge base of the broader community.

Key Thresholds to Remember: Funding provided to each grant recipient cannot exceed $150,000 per grant and $300,000 on a cumulative basis within the same programme period. To receive multiple grants, the grant recipient must have produced the results agreed to in the prior grant agreement, and a new grant agreement must be approved by the project board or selection committee. The same entity could receive separate grants under different projects with a cumulative ceiling of $300,000 in the programme period. The UNDP business unit is responsible for reviewing proposed grant awards under UNDP projects and confirming that the amount falls under the grant threshold amounts allowable per programme period. If a responsible party oversees implementation of the grant project on behalf of the implementing partner originally selected by UNDP under on-granting, funding provided by it to any individual grant recipient shall not exceed $60,000 per individual grant and $120,000 on a cumulative basis within the same programme period.

Non-exclusivity: The award of grants is not exclusive. Several entities can be awarded separate grants for the same development challenge, or a consortium can be awarded a single grant to foster collaboration. Moreover, LVGs can be used in parallel to other engagement types; for instance the same NGO can concurrently be a grant recipient to develop a new local income-generation scheme and hold a procurement contract to provide logistical services for a workshop (provided there is no conflict of interest; see section below on difference between grants and procurement). All resources provided to the entity by UNDP during the programme period are considered when assessing what, if any, capacity assessments should be done . For example, if the value of a LVG plus procurement contract or responsible party agreement exceeds $300,000 total during the programme period, the relevant capacity assessment must be done for that partner.

Eligibility: Grants can be awarded to civil society and (national or international) non-governmental organizations, including non-governmental academic or educational institutions. Private sector and commercial entities, and governmental organizations (e.g. regional governments, municipalities, etc.) are currently not eligible to receive LVGs. Under exceptional circumstances an individual can be a grantee when legislation prevents excluded and marginalized groups (e.g. LGBTQ people, sex workers, people affected by certain illnesses, etc.) from organizing and attaining legal status. The understanding would be that the individual signing the grant agreement represents the group barred from attaining legal status. If the country office's senior management has determined that the engagement is critical to delivery of results and is in the best interests of UNDP, the head of the Business Unit may authorize the use of the IC modality with one or more of the principals. The value of each individual contract shall be capped at the established threshold for micro purchasing (USD 10,000). Grants **must not** be awarded to any organization or individual appearing on prohibited entity lists, such as the UN Sanctions List, UNDP Vendor Sanctions List, or other barred lists (such as the World Bank Barred List).

Granting is not a substitution for Procurement: a grant cannot be used in lieu of a procurement process to provide commercial goods and services to a project since grants are intended to generate or solicit development solutions. So even in the case of a strategically important non-government entity, if its role is limited to the provision of goods and services, then a procurement process is necessary.

Technical Clearance on Micro-finance Grants: Low-value grants may be made for credit activities, and can be used by the recipient organization to cover the costs of its operations, purchase equipment, hire new staff or capitalize credit funds within the financial limits set out below. On all requests related to credit or microfinance, technical clearance from UNCDF is required. The policies for microfinance, credit and/or loan programmes administered by UNDP and/or UNCDF are covered by the UNDP/UNCDF Microfinance Policy.

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Performance-Based Payment Agreements

For full POPP guidance on Performance-Based Payment Arrangements, refer to this link: Performance-Based Payment Agreements

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POPP Points to Remember

Programmatic Use: Circumstances that might warrant the use of performance-based payments include, but are not limited to: (a) the desire of a donor to use a this approach to ensure results are achieved and mitigate financial risk; (b) particularly volatile development situations that cannot be effectively addressed by standard agreements; (c) specific sectors where performance-based payments are established practice, such as the use of results-based payment schemes by countries for reducing deforestation as supported in various UN Framework Convention on Climate Change decisions; (d) implementation capacities and arrangements exist and can be leveraged; and (e) development approaches and best practices to address the development challenge are readily available.

Project Types: Performance-based payments may be used under a project implemented by UNDP, where a responsible party is selected to take programmatic and financial responsibility for delivering specified results. They may also be used under a nationally implemented project, where UNDP provides direct country office support services to the implementing partner, and those services include engaging a responsible partner using a performance-based payment arrangement.

Types of PBPAs: There are three types of PBPAs, which vary according to funding amount and use of working capital reimbursements. They have different conditions which are summarized at the link shown. Summary of PBPA Types & Conditions

Key Thresholds to Remember: For PBPAs greater than US$300,000, the achievement of specific, pre-agreed results (outputs and/or activities) must be validated through performance measures and quality certified by an independent assessor. Given the cost associated with engaging an independent assessor, it is recommended to use PBPAs of at least US$1,000,000 or more per annum. The project board may verify results for PBPAs of US$300,000 or less.
Eligibility: The selection of a responsible party for a PBPA is a programmatic decision. RPs can include government entities, NGOs/community-based organizations, academic institutions, the private sector and non-UN intergovernmental organizations. PBPAs **must not** be awarded to any organization or individual appearing on prohibited entity lists, such as the UN Sanctions List, UNDP Vendor Sanctions List or the UN Global Marketplace Ineligibility List.

Annex 14: UNDP Project Quality Assurance Report

(to be completed in UNDP online corporate planning system)

Annex 15: Green Financing in Vietnam

(File attached separately)

ANNEX 15

DEVELOPMENT OF GREEN FINANCIAL SYSTEM IN VIETNAM

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SUMMARY

On September 25, 2012, the Prime Minister signed Decision No. 1393/QD-TTg approving the National Strategy on Green Growth for the period 2011-2020 and a vision to 2050. Since then, a series of relevant concepts has emerged such as: green economy, green finance, green tax, green credit, green bonds ...

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; (5) green insurance, for mobilizing and encouraging social resources to invest in green manufacturing industries while reducing investments polluting the environment. Green finance has two main functions: promoting the development of green economy, green manufacturing industries; and protecting the natural environment.

Green finance development in Vietnam is the right direction in implementing the Green Growth Strategy. In Vietnam, the legal system on green finance has been paid attention and built, such as: Decision No. 2183/QD-BTC dated October 20, 2015 on the action plan of the financial sector to implement the National Green Growth Strategy to 2020; Decree No. 95/2018/ND-CP dated June 30, 2018 on the issuance, registration, depository, listing and trading of government debt instruments on the stock market; Circular No. 155/2015/TT-BTC dated October 6, 2015 on guiding information disclosure on the stock market; Decision No. 1552/QD-NHNN dated August 06, 2015 on the action plan of the banking sector to implement the National Green Growth Strategy to 2020; Decision No. 1604/QD-NHNN dated August 07, 2018 on the Green Banking Development Project in Vietnam.

Vietnam commercial banks have made positive progress in developing the green banking system through improving the governance system, enhancing shareholder policy, disclosure information and control risk. The corporate finance for green development is being focused on promoting environmentally friendly good and service production. Credit institutions have built environmental and social risk assessment processes in their internal regulations, and integrated green credit operations in their development strategies.

The survey results on green investment and sustainable development awareness of Vietnam enterprises show that the factors affecting green investment include: infrastructure for green investment; accessibility to finance for green investment activities; preferential policies for accessing to capital for green investment; green investment knowledge/understanding; support from the Government and banks in accessing capital for green investment; special incentives for green investment.

Several organizations in Vietnam are responsible for assistant role in the development of green financial system. The Vietnam Environment Protection Fund (VEPF) has the function of receiving capital sources from the state budget; sponsorship, contribution and trust resources from domestic and foreign organizations and individuals to financially support to environmental protection activities, climate change adaptation and water security improvement

in the Mekong Delta. The Green Credit Trust Fund (GCTF) aimes to promote mid- to long-term investments in cleaner technology used in industrial production and services. The National Technology Innovation Fund (NATIF) has the function of preferential lending, loan interest rate support, loan guarantee, capital support for organizations, individuals and businesses to conduct technology research, transfer, innovation and perfection. The Vietnam Development Bank aimes at state investment credit and export credit development activities, especially in socio-economic infrastructure, supporting industries, rural agriculture, and socialization in the fields of education, health, environmental protection and green technology, clean energy and renewable energy.

Development of a green financial framework in the project “Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel" aimes to sustain the shifting of enterprises toward a non-POPs and a non-Mercury manufacturing, specifically: (1) Support the quality-controlled conversion of production lines, toward less-chemically intensive products and materials, replacement of POPs with non-POPs/non-hazardous chemicals, management of obsolete POPS and mercury stocks; (2) Support the private sector to get incentives policy (eg tax, fee, credit fund, investment equity) in production of eco-friendly products carrying Ecolabel. To achieve this goal enterprises will be assisted in identifying and submitting applications to access finance from green financing schemes, particularly these provided by governmental entities, like the Vietnam Environmental Protection Fund, the National Technology Innovation Fund (when a new charter will be approved), the Vietnam Development Bank, and by bilateral entities like international development banks and foreign donors.

1. Background

The key growth strategy of a green economy is to protect the environment, develop clean production technologies and clean energy, and rapidly achieve sustainable growth. Meanwhile, green finance is an important tool in green growth strategy of all countries in the world.

Transitioning to a green economy, countries need to take the following basic measures: conservative investment in natural resources; job creation and social justice; replacing fossil fuels with renewable energy and low-carbon technologies; encouraging more efficient use of resources and energy; sustainable urban development and low carbon transport; establishing a financial and fiscal mechanism as well as developing suitable legal system and support policies for the above activities.

The transition process of countries' green economic growth models shows the important role of using capital raised from the green financial system to green the economy.

As defined by UNEP 2016[1], green finance involves diversifying financial products and services offered by financial institutions towards sustainable national development. In addition, green finance is defined as financial support towards green growth through significant reductions in greenhouse gas emissions and environmental pollution.

The green financial system includes activities related to mobilizing green finance for use in green investment activities through the green financial market channel and green financial intermediaries. Green banks play an active role in the process of mobilizing green capital for the green financial system.

Greening of the financial system is concerned by many countries around the world for overcoming and minimizing the negative impacts of economic development on the environment through greening the economy. Recognizing that green financial system development is a new area, but plays an important role, Vietnam is initially building a green financial system towards sustainable development.

Green finance development in Vietnam is right direction in implementing the Green Growth Strategy. But like other developing countries, the development roadmap still has many big challenges that need to be overcome in the short term. Raising awareness and understanding of green finance in sustainable development, together identifying opportunities and challenges in the application process are essential in the current period in Vietnam. Key challenges include: (1) limited awareness of green finance; (2) lack of policies and laws to effectively support green financial development; (3) limited green financial products in Vietnam banking; (4) low readiness for green finance; (5) limited financial support for green projects and green products.

It can be said that green finance is seen as the infrastructure for green growth. For developing countries like Vietnam in the early stages of implementing green growth and developing green economy, government active participation and support as well as external

[1] UNEP (2016)- Green Finance for Developing Countries http://unepinquiry.org/wp-content/uploads/2016/08/Green_Finance_for_Developing_Countries.pdf

support for green financial strategy are very important. The government should ensure a minimum profit margin to encourage businesses to invest in industries that use green technologies and produce green products. Based on public awareness raising of environmental protection and green economic development, the demand for green products and green technology will have opportunities for development. In addition, Vietnam needs to actively participate in cooperation with international financial institutions like the World Bank (WB), Asian Development Bank (ADB) and international green financial funds to take advantage of their funds for green development.[2]

2. Green financial development policy and status of green financial system in Vietnam

On September 25, 2012, the Prime Minister signed Decision No. 1393/QD-TTg approving the National Strategy on Green Growth for the period 2011-2020 and a vision to 2050. Since then, a series of relevant concepts has emerged such as: green economy, green finance, green tax, green credit, green bonds ...

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 (CIs) actively participate in building a green financial system including: (1) green credit; (2) green bonds; (3) green stock; (4) green financial fund; (5) green insurance, for mobilizing and encouraging social resources to invest in green manufacturing industries while reducing investments polluting the environment. Green finance has two main functions: promoting the development of green economy, green manufacturing industries and protecting the natural environment.[3]

In Vietnam, the legal system on green finance has been paid attention and built. The Government has issued green financial market development strategy and some implementing Decrees; The Ministry of Finance and the State Bank of Vietnam also issued a number of Circulars providing guidance to encourage development of the green financial market.

The Green Growth Strategy for the period 2011-2020 and a vision to 2050 issued by the Prime Minister of Vietnam focuses on the following three tasks: (1) Reducing greenhouse gas emissions and promoting clean energy and renewable energy use; (2) Greening production; (3) Greening lifestyles and promoting sustainable consumption.

Following the Decision No. 403/QD-TTg dated March 20, 2014 on approving the National Action Plan on Green Growth for the period 2014-2020, the Ministry of Finance issued Decision No. 2183/QD-BTC dated October 20, 2015 on the action plan of the financial sector to implement the National Green Growth Strategy to 2020. Action plan of the Vietnam finance sector determines that the State Securities Commission and the Stock Exchange play important role in the development of green capital markets and financial products. The specific task of the plan is developing and completing a financial policy framework to develop the green capital market and green financial products.

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[2] http://vukhcn.monre.gov.vn/tin-khoa-hoc-cong-nghe-quoc-te/tai-chinh-xanh-la-gi/tt-709

[3] http://baokiemtoannhanuoc.vn/goc-nhin-chuyen-gia/phat-trien-tin-dung-xanh-142913

Decision No. 2183/QD-BTC is a fundamental document in the development of green capital markets in Vietnam. The Ministry of Finance defines the responsibilities of management authorities in the financial sector, including: (1) promoting green capital market products like Green bonds (green corporate bonds released for green projects or green products; government bonds and local government bonds served for green goals, programs and projects); Green indicators, sustainability indicators, carbon indexes; Green investment certificates issued by investment funds; (2) The State Securities Commission (SSC), the Stock Exchange research to develop a green financial framework for the capital market through promulgating regulations and conditions for listing stocks (named green listing), reporting (named sustainability reporting) and monitoring (by green financial criteria).[4]

In Vietnam the green bond market is being operated in accordance with Decree No. 95/2018/ND-CP dated June 30, 2018 on the issuance, registration, depository, listing and trading of government debt instruments on the stock market, in which issuing, registering, depositing, listing and trading bonds have been regulated in detail. However, at present green bond in Vietnam only recognizes government bond. The Ministry of Finance is the focal point to develop a green government bond issuance project to submit to the Prime Minister for approval. Its major contents, including the purpose and volume of distribution; bond terms and conditions; registration, depository, listing and trading… are being developed to deploy in the market.

On the stock market, the Circular No. 155/2015/TT-BTC dated October 6, 2015 guiding the disclosure of information on the stock market. It is the first mandatory document for businesses to disclose social, environmental and sustainable development information. Specifically, when businesses publish their Annual Reports, they will have to announce their sustainable development goals (environment, society and community) and their main program in the short and medium term. At the same time, the application of this Circular also provides an additional criterion for investors to consider, thereby facilitating green securities products to be selected more easily.

The State Bank has also issued green banking development policies such as: The action plan of the banking sector to implement the National Green Growth Strategy to 2020 (Decision No. 1552/QD-NHNN dated 6/82015), The Green Banking Development Project in Vietnam (Decision No. 1604/QD-NHNN dated 7/8/2018). In addition, commercial banks have initially adopted green credit policies like credit programs that contribute to efficient use of resources, create livelihoods and improve people's living standards, and step by step enhance environmental and social issues; give priority to the development of a number of branches and fields using high technology ...

Vietnam commercial banks have made positive progress in developing the green banking system through improving the governance system, enhancing shareholder policy, disclosure information and control risk. Commercial banks have also focused on developing environmental and social risk management systems. As a result, 3 commercial banks have applied the Environmental and Social Responsibility Management System (ESMS), 17

[4] https://thitruongtaichinhtiente.vn/thi-truong-tai-chinh-xanh-tai-viet-nam-thuc-trang-kinh-nghiem-quoc-te-va-giai-phap-25485.html

commercial banks have built internal regulations of environmental and social risk appraisal, and most of them have implemented environmental and social risk assessments in credit activities. However, the majority of commercial banks do not have their own department specializing in green banking and green credit development.

In general, Vietnam green finance legal system is still in primitive, incomplete and asynchronous.[5]

Regarding the green financial market, a number of activities and products have been introduced to the market but have not really became an investment and development trend. First of all, green finance policies in Vietnam are just in the direction of development. Specific regulations on market implementation and operation are still being studied and not been issued. Typically, the policy on green bonds is only in an experimental form, and it is just government bonds, but not corporate bond. For green stocks, there is no policy framework for market development as well as specific regulations on products (specifications, issuance conditions...).

In the implementation of green credit, the most existing challenge is large amount of capital and long investment period, while the financial efficiency is not high. For example, the current loan period for solar and wind power projects is about 11-15 years, and the long term will lead to large interest rate requirement. Besides, technical issues and experience in green project appraisal are also major limitations for commercial banks in Vietnam. Investors and banks experience of new technology and project are not much, so it can lead to high risks.

Green investment awareness are being focused on promoting environmentally friendly good and service production. Enterprises are aware of the position and importance of providing clean, environment-friendly and healthy products for consumers. This is a good sign for developing green economy in Vietnam, but the biggest obstacle is that the financial resources of enterprises cannot meet the investment needs for production and trading projects according to green growth criteria. Therefore, credit capital sources play important role in overcoming this weakness. Credit capital is provided through two forms: state credit capital through support and incentive programs for eco-friendly trading and production, and credit capital through business operations of credit institutions. In the early stages of the transition to a green economy, credit capital from the state preferential programs is dominant. When the economy has developed according to the green growth criteria, credit capital from credit institutions dominates. Then, ensurement of environmental standards is one of the criteria for obtaining credit. The current legal regulations on credit granting proactively empower credit institutions the right to select customers and investment projects, and take responsibility for credit evaluation results.[6]

Credit institutions have built environmental and social risk assessment processes in their internal regulations, and integrated green credit operations in their development strategies; some commercial banks are also actively participating in projects funded by international financial institutions on environmental protection and green credit, so green credit activities

[5] https://vjst.vn/vn/tin-tuc/3675/he-thong-tai-chinh-xanh--yeu-to-tien-quyet-cho-phat-trien-kinh-te-xanh.aspx

[6] http://tapchinganhang.gov.vn/chinh-sach-phat-trien-tin-dung-xanh-va-nhung-van-de-dat-ra-trong-cac-quy-dinh-phap-luat-ve-cap-tin-d.htm

have made positive progress. By the end of June 2019, credit balance for green projects is about 317,600 billion VND, in which medium and long term loans account for 76% of green credit balance; short-term green loan interest rate is 5-8% / year, medium - 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 finance to 2020, the proportion is already a significant source of domestic capital for green growth. Moreover, greening credit flows will contribute to restructure the economy towards green growth and sustainable development. Outstanding green credit mainly focuses on green agriculture, accounting for 45% of total green credit balance; renewable energy and clean energy accounts for 17%; sustainable water management in urban and rural areas - 11% and sustainable forestry - 5%.[7]

In May 2020, VPBank officially announced the Green Credit program for customers who meet green criteria (loans for project, production, trading, and consumption activities to prevent climate change, reduce carbon emissions and promote the transition to sustainable, environmentally friendly economy). This program is applied to customers wishing to borrow capital for investing in eco-friendly plans and projects, which can be named as: Renewable Energy; Efficient electricity generation and reduced carbon emissions; Energy Efficiency; Green Buildings; Water Efficiency; Waste treatment; Agriculture, forestry and sustainable land use; Pollution prevention and control;...

To support growth in the green asset portfolio, VPBank has developed the Green Loan plan. These loans are based on the Green Credit Principles 2018 (GLP 2018) framework co-issued by the Loan Market Association (LMA) and the Asia Pacific Loan Market Association (APLMA). Accordingly, VPbank has issued the Green Credit Framework aimed at providing a green loan using and managing process for borrowing projects that meet green criteria. The green credit framework is built based on the four criteria of the Green Credit Principles 2018: (1) Loan use purpose; (2) Project evaluation and selection process; (3) Loan management and use; (4) Reporting.[8]

Sacombank spends up to 8,500 billion dong with loan interest rates of 6% / year for new and existing corporate customers who have a need for production and trading in a "green" field or have activities that do not only not affect, but also capable of protecting natural resources and environment…, and some other priority fields. For individuals and households, Sacombank is spending loans of VND 500 billion with preferential interest rates to buy solar power equipment plus insurance products for encouraging customers to use natural energy sources.[9]

At BIDV, by the end of 2019, the total outstanding balance for green projects were more than 20 trillion dong, accounting for about 1.8% of the bank total outstanding loans. In particular, the green project loans have increased sharply since the end of 2019. In the fourth quarter alone, the proportion of revenue from loans of BIDV to green projects accounted for 47.85% of the whole year of 2019. Currently, BIDV has issued a specific credit package (7,000

[7] http://tapchitaichinh.vn/ngan-hang/tao-dong-luc-thuc-day-phat-trien-tin-dung-xanh-330111.html
[8] https://www.vpbank.com.vn/ve-chung-toi/phat-trien-ben-vung/khung-tin-dung-xanh
[9] https://tuoitre.vn/ngan-hang-day-manh-tin-dung-xanh-20200817105227635.htm

billion VND) reserved for customers investing in green fields with a maximum loan term of 10 years and preferential interest rate up to 5 years to support small and medium-sized enterprises for sustainable development. BIDV is also accessing the SUNREF capital under green credit package sponsored by the French Development Agency (AFD) with worth of $100 million to finance investment projects in renewable energy, clean energy and energy saving.[10]

- Sacombank spends up to VND 8500 billion with loan interest rates of 6% a year for new and existing corporate customers who have a need for production and trading in a "green" field or have activities that do not only not affect natural resources and the environment, but also capable of protecting them and some other priority fields. For individuals and households, Sacombank is spending loans of VND 500 billion with preferential interest rates to buy solar power equipment plus insurance products for encouraging customers to use natural energy sources.

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Green investment projects have large scale of investment capital, relatively long implementation period and prolonged capital recovery, so the consideration of whether to invest or not is also a great pressure for businesses when making decision. The survey results on green investment and sustainable development awareness of Vietnam enterprises show that the factors affecting green investment include: infrastructure for green investment; accessibility to finance for green investment activities; preferential policies to access to capital for green investment; green investment knowledge; support from the Government and banks in accessing capital for green investment; special incentives for green investment. Most companies surveyed do not really know about green investment funds and green loans such as green bonds, green credit and other green capital mobilization tools.

3. Current status of green financial market development in Vietnam

It can be assessed that the green financial market in Vietnam is in its infancy. The market activities are mainly at the start-up stage. The green bond market is being in the pilot stage and implementing programs to propagate and introduce green bonds to the subjects in the market. The green stock market is being strengthened by putting the VNSI index into operation at the same time with issuing regulations requiring listed companies to provide information related to environment, society and community.[11]

[10] https://thoibaokinhdoanh.vn/ngan-hang/vi-sao-ngan-hang-chua-the-bung-tin-dung-xanh-1074004.html
[11] https://thitruongtaichinhtiente.vn/thi-truong-tai-chinh-xanh-tai-viet-nam-thuc-trang-kinh-nghiem-quoc-te-va-giai-phap-25485.html

3.1. Green bond market

According to the ASEAN Green Bond Standards, Green Bond refers to bonds financed or refinanced in whole or in part for Green projects providing benefits to environment including: (1) Renewable energy; (2) Energy efficiency; (3) Pollution prevention and control; (4) Environmental sustainable management of land use and natural habitats; (5) Conservation of terrestrial and aquatic biodiversity; (6) Clean transportation; (7) Sustainable water and wastewater management; (8) Climate change adaptation; (9) Economic adaptive and efficient production processes and technologies; (10) Green buildings certified or met international, regional and domestic recognized standards.[12]

The green bond market in Vietnam is piloting, and has not products widely released on the market. The authorities are running programs to raise awareness and introduce green bonds.

a) Pilot issuance of green bond

Since the end of 2015, the Hanoi Stock Exchange (HNX) has built a project to develop the green bond market under the cooperation program between the State Securities Commission and the German Development Cooperation Organization (GIZ). On October 20, 2016, the Ministry of Finance approved the local government green bond pilot issuance scheme and directed relevant units to implement it. Accordingly, green bonds are built to mobilize capital for green projects on irrigation, environmental protection, wind power... Hanoi Stock Exchange (HNX) gives assistance to owners to issue Green bond products piloted in some localities having demand about capital mobilization.

Up to now, Ho Chi Minh City and Ba Ria - Vung Tau are the first two localities implementing this project. The bonds are issued in the form of local government bonds with a term of 3-5 years. According to preliminary statistics, Ho Chi Minh City issued green bonds of 3 trillion dong for 34 projects, in which there are 11 green projects based on the "Green Project Catalog" issued by the State Bank (SBV); Ba Ria - Vung Tau issued green bonds of 500 billion dong with a term of 5 years for 8 projects. These projects aim at sustainable development tagets in local.

b) Implementation of other programs

In order to soon put the green bond market into official operation, the authorities have promoted activities to propagate, introduce and promote the development of the market, as follows:

(1) The State Securities Commission, with the support of GIZ, has implemented training and capacity building programs for subjects participating in the green bond market. Target groups of these activities are institutional investors such as: investment funds, insurance companies, retirement funds ...

(2) Ministry of Finance, State Bank, State Securities Commission, HNX, Ho Chi Minh City Stock Exchange (HOSE) with the support of international organizations like GIZ,

[12] http://tapchinganhang.gov.vn/trai-phieu-xanh-viet-nam-trong-no-luc-bat-nhip-voi-ky-nguyen-tai-chinh-xanh-toan-cau.htm

International Finance Corporation (IFC) are developing a project to develop corporate green bonds and institutional green bonds, with which green corporate bonds are issued in pilot.

(3) HNX researches to build a green bond index, deploy products combining credit, bonds and international preferential capital.

3.2. Green stock market

The green stock market in Vietnam is still in its infancy. Authorities develop programs and indicators for encouraging businesses to focus on sustainable development. The main activities implemented to date can be divided into three groups: (i) improving market understanding of green finance; (ii) encouraging the participation of businesses in green finance; (iii) building and applying the sustainable development index of the whole market.

First, market-wide understanding of green finance is achieved through training activities on integrating environmental, social and corporate governance (ESG). Since 2012, the SSC has cooperated with IFC, the Global Reporting Initiative (GRI), HNX and HOSE to implement many capacity building training programs for listed companies to disclose ESG information. The concept of sustainability report has been introduced to listed companies since 2013. Up to now, HOSE still regularly organizes training courses on sustainable development and reporting standards according to Global Reporting Initiative (GRI)...

Second, encourage the participation of businesses in green finance through activities such as: (1) guiding enterprises to implement ESG report, in which in 2016 the SSC with the support of the IFC has announced ESG Report Implementation Manual for Listed Companies. Businesses can follow the steps for implementing easily ESG report, because it also provides detailed guidance and recommendations for work items that businesses need to comply with to elaborate a complete ESG report; (2) since 2013 HOSE and Securities Investment Newspaper have given criteria for full disclosure of ESG information as a condition for voting the best annual reports of businesses. This award creates more dynamic force for businesses to disclose information on sustainable development activities.

Third, to build and apply the sustainable development index of the whole market, at the end of March 2017, HOSE has announced the Vietnam Sustainability Index (VNSI) and officially put into operation from end of July 2017. The index is researched and deployed by HOSE in collaboration with GIZ and SSC. Sustainable development assessment criteria are researched and built based on the International Reporting Standard of Global Sustainability Reporting (GRI), the Corporate Governance Code of The Organisation for Economic Co-operation and Development (OECD) and the provisions of the Securities Law in Vietnam. The VNSI Index aim at: defining standards for sustainable development for listed companies; assisting institutional and individual investors in identifying “green” businesses to invest in; improving sustainable development trend of the whole economy; defining criteria for environmental, social and governance best practice; adding a new investment tool for contributing to the growth of the stock market and the economy.

VNSI is a reference tool for individual and institutional investors and is also used as a base asset for investment products (like Exchange Traded Fund ETFs and future derivatives). Currently, the VNSI index including 20 enterprises with the best sustainability scores in the

Top VN100 listed on HOSE, is calculated in real time every 5 seconds (similar to the VNIndex).

Thus, according to SSE's operational frameworks, Vietnam (specifically HOSE) has performed the following contents: (1) Conducting ESG training; (2) Implementing sustainable development report (from 2016); (3) Guiding enterprises to implement ESG report; (4) Developing ESG index for the whole market (VNSI index); (5) Applying minimum ESG standards to allow businesses to go listing stocks (Circular No. 155/2015/TT-BTC dated October 6, 2015 on guiding information disclosure on the stock market).

It can be seen that Vietnam green financial market has had a number of activities and products introduced to the market, but has not really become an investment and development trend. Currently, green financial development in Vietnam still has challenges that need to be overcome soon, as follows:

- Vietnam general institutional challenge: Green finance policies in Vietnam are still in suggestive development directions. Specific regulations on market implementation and operation are still being studied and have not been issued. For example, the new green bond policy is experimental, and only government bonds are recognized, not yet green corporate bonds. For green stocks, there is no policy for market development and product regulations (specifications, issuance conditions ...). For green banks, credit actively develop products come from international support capital or commercial banks, new green credit policies only focus on incentives, but not on clear mechanisms to apply. The current credit granting legislation does not yet have sufficient regulations on credit products for green growth. Therefore, credit institutions have not yet strongly invested in the development of green credit products to meet the requirements of green growth. The absence of regulations on green credit products is a huge barrier for organizations and individuals that need capital for green growth.[13]

- People, businesses and organization responsibility perception for environmental protection in general and green finance in particular is still quite limited. People, businesses and organizations have been mobilized to participate in environmental protection activities, but basically their awareness in daily activities has not clearly formed. The concepts of green growth and green finance have not been widely disseminated to all subjects in society, especially businesses have not the occation to access to green finance, and the people almost unknow about the concept of green finance.

4. Role of some organizations supporting the development of a green financial system in Vietnam

4.1. Vietnam Environment Protection Fund

The Vietnam Environment Protection Fund (VEPF) is a state financial institution under the Ministry of Natural Resources and Environment, operating not for profit but must preserve its charter capital and compensate for its management costs, being exempt from tax and other payments to state budget for its activities in the field of environmental protection according to

[13] http://tapchinganhang.gov.vn/chinh-sach-phat-trien-tin-dung-xanh-va-nhung-van-de-dat-ra-trong-cac-quy-dinh-phap-luat-ve-cap-tin-d.htm

the provisions of the tax law and the state budget law. VEPF operates openly, transparently and equally in accordance with the legal regulations. VEPF is subject to inspection, control and audit of the financial state management agency and the State Audit.[14]

VEPF has the function of receiving capital sources from the state budget; sponsorship, contribution and trust resources from domestic and foreign organizations and individuals to financially support to environmental protection activities, climate change adaptation and water security improvement in the Mekong Delta.

The operating capital of VEPF is formed from the following sources: (1) Charter capital, supplemented from the State budget in accordance with the legal regulations and the Development Investment Fund; (2) Annual supplementary operating capital from (a) State budget spending on environmental protection activities compensated to annual tasks; (b) Compensations for damage to the environment and biodiversity paid into the state budget in accordance with the law; (c) Fees for selling and transferring license of certified emission reductions (CERs) from CDM projects implemented in Vietnam; (d) Sponsorships, supports, voluntary contributions, investment trust of domestic and foreign organizations and individuals for environmental protection and climate change adaptation; (e) Supplement from the annual difference in revenues and expenditures as prescribed; (g) Other legal capital sources as regulated by law.

VEPF capital is used to:

(1) Lending capital with preferential interest rate for environmental protection projects in whole country.

(2) Loan interest rate support for environmental protection projects with funds from credit institutions in accordance with the law.

(3) Financing and co-financing environmental protection activities in accordance with the law, but not overlapping with the State budget allocated to ministries, branches and localities for spending these activities.

(4) Implementing a number of financial mechanisms and policies for investment projects under the Clean Development Mechanism (CDM), including: (a) Organizing, monitoring, managing, and collecting fees for selling certificates of certified emission reduction (CERs) issued by the International Executive Board on CDM for CDM projects implemented in Vietnam; (b) Supporting CDM project awareness raising and dissemination activities, CDM project document review and approvement, CDM project management and monitoring; (c) Contributing price subsidy for CDM project products.

(5) Supporting electricity price for grid-connected wind power projects according to the Decision of the Prime Minister and current law provisions.

(6) Supporting finance for climate change adaptation activities in accordance with the law.

[14] Thông tư 61/VBHN-BTC ngày 31/12/2020 hướng dẫn cơ chế quản lý tài chính đối với Quỹ Bảo vệ môi trường Việt Nam

(7) Implementing programs, projects and other tasks assigned by the Prime Minister and MONRE in accordance with the law.

(8) Investmenting in basic construction and fixed asset procurement for the operation of VEPF.

(9) Use idle capital to deposit at commercial banks with good operating quality as classified by the State Bank of Vietnam for the purpose of capital preservation and development of the Fund. The Board of Directors of VEPF issues the regulations to manage and invest idle capital in commercial banks to implement.

Borrowers of VEPF: Organizations and individuals having investment projects for environmental protection in the following fields:

(1) Concentrated domestic wastewater treatment with a design capacity of 2,500m³ of wastewater or more per a day and night for urban areas of grade IV or higher;

(2) Technical infrastructure construction for environmental protection in craft villages, industrial clusters and parks (including concentrated wastewater treatment station, treatment ponds, regulating ponds...);

(3) Conventional solid waste collection, transportation and concentrated treatment;

(4) Hazardous waste co-treatment and/or treatment

(5) Environmental pollution treatment and improvement in public areas;

(6) Producing and importing special-use machinery, equipment and means directly used in waste collection, transportation and treatment; environmental monitoring and analysis; renewable energy production; environmental pollution treatment; environmental incident response;

(7) Production of environmentally friendly products labeled with Vietnam Green Label by MONRE, products from solid waste recycling and treatment activities of waste treatment facilities (domestic, industrial and hazardous waste);

(8) Environmental monitoring.

In addition to the priority areas for loans mentioned above, VEPF also provides loans with preferential interest rates for other fields as stipulated in Decree 40/2019/ND-CP dated May 13, 2019 by the Prime Minister amending and supplementing a number of articles of decrees regulating the implementation of the Law on Environmental Protection.

Up to now, Vietnam has 41 Environmental Protection Fund organizations, including 1 Central Environment Protection Fund (Vietnam Environment Protection Fund), 39 Local Environmental Protection Funds and 1 Environmental Protection Fund for coal industry. Provincial People's Committees decide the establishment, organization and operation of Local Environmental Protection Funds. The Local Environmental Protection Fund belonged to the Department of Natural Resources and Environment, is subject to the financial state management of the Department of Finance.

4.2. Some other organizations

Green Credit Trust Fund

The Green Credit Trust Fund (GCTF) was established in 2007 in Vietnam from the initiative to support the promotion of technological innovation by Swiss State Secretariat for Economic Affairs (SECO). The aim of the GCTF is to promote mid- to long-term cleaner technology investments in industrial production and services.

Most small and medium enterprises in Vietnam often have difficulty in capital and have not enough collaterals to access credit loans at commercial banks. This difficulty has reduced the motivation for technological innovation to increase production efficiency and reduce environmental impact. GCTF is a financial support solution to help Vietnam SMEs be more brave in new technology investment process to replace existing outdated technology.

National Technology Innovation Fund

The National Technology Innovation Fund (NATIF) as a non-profit state management agency under the Ministry of Science and Technology (MOST), is also a State financial institution operating for non-profit purposes, having the function of preferential lending, loan interest rate support, loan guarantee, capital support for organizations, individuals and businesses to conduct technology research, transfer, innovation and perfection.

Projects funded by the Fund include: (1) New technologies, advanced technologies and high technologies research and development to create new products and services; (2) New product technology incubation and test production; (3) Science and technology staff training for technology transfer and application; (4) Technology transfer, perfection and creation to produce core products, key products and national products.

The fields accepted preferential loans, loan interest subsidies, and loan guarantees include: (1) Technology transfer encouragement (including technology transfer in Vietnam and from abroad to Vietnam) pursuant to Article 9 of the Law on Technology Transfer; (2) Science and technology enterprise incubation; (3) Production and business development and expansion in science and technology enterprises; (4) Technology transfer for agricultural and rural development.

Vietnam Development Bank

On September 3, 2015, the Prime Minister signed Decision No. 1515/QD-TTg promulgating the Charter on organization and operation of the Vietnam Development Bank. Accordingly, the Vietnam Development Bank is a policy bank operating under the model of One-Member Limited Company with 100% charter capital held by the State.

The Vietnam Development Bank has a legal status according to Vietnam law; has charter capital, seal, accounts at the State Bank of Vietnam, the State Treasury, domestic and foreign commercial banks, so it eligible for joining the payment system with banks and providing payment services in accordance with the law.

The state is the owner of the Vietnam Development Bank. The Government uniformly manages the right and obligation implementation of the state owner over the Vietnam

Development Bank. The Prime Minister directly handles the owner rights and obligations as assigned by the Government, or authorizes to the Ministry of Finance.

The Vietnam Development Bank aimes at state investment credit and export credit development activities, especially at socio-economic infrastructure, supporting industries, rural agriculture, and socialization in the fields of education, health, environmental protection and green technology, clean energy and renewable energy.

5. Some proposals to develop green finance in Vietnam

5.1. General recommendations

On the basis of assessing the current state of green finance development in Vietnam and the experience in the world, some recommendations for green finance development in Vietnam can be proposed as follows:[15]

Development Goals

- By 2025, pilot model of green banking, green investment funds, and green investment enterprises will be established.

- By 2040, the indicator system for evaluating the level of greening of the green finance system will be comprehensively applied, in which it is divided into two phases: (1), applying separately each set of component indicators, including Green banking sub-index (GBI), Green investment sub-index (GII), green stock sub-index (GSI), and Sustainable sub - index (SSI); (2) applying the green financial aggregate index (GFI).

- On that basis, by 2050, the green financial system will be fully operated with 4 main pillars: green financial intermediaries, green capital mobilization tools, green investment enterprises and green financial markets.

Development roadmap

In order to develop green financial system in Vietnam, it is necessary to have development roadmap as well as participation of all stakeholders. The green financial development roadmap can include steps:

Step 1: Set up a green growth plan, including: (1) Define development and growth goals; (2) Identify and examine current green growth plan (if any); (3) Assess economic, social, environmental, political, institutional conditions and policy, legal framework, and impacts on green growth.

Step 2: Evaluation by industrial sector including: (1) Assess sectoral potential/need for green growth to achieve economic and development goals; (2) Prioritize investment by sector; (3) Evaluate the efficiency of priority sectors.

Step 3: Prepare policy, including: (1) Identify ecological standards and requirements; (2) Identify certification reports and verification methods; (3) Determine penalties for non-compliance.

[15] PGS.TS Trần Thị Thanh Tú, ThS Nguyễn Hồng Minh https://vjst.vn/vn/tin-tuc/3675/he-thong-tai-chinh-xanh--yeu-to-tien-quyet-cho-phat-trien-kinh-te-xanh.aspx

Step 4: Provide funds, including: (1) Provide funding options; (2) Evaluate tax; (3) Allocate between private sector and public sector.

Step 5: Implement the policy.

Involvement of stakeholders

- From the State: should play a leading role in the greening of the financial system. Develop a green financial system is a long-term process that may not bring benefits in the short term, so it should be combined with the green development strategy as well as the general development strategy of the Government. Specifically, give priority to Government investment and spend in the fields stimulating greening economic sectors; attract private investment in green economy; formulate and announce a roadmap for transition to a green economy in Vietnam from now to 2050, in which priority sectors and fields must be identified for green economic development.

- From relevant ministries, departments and sectors: the Ministry of Planning and Investment needs to build the list and evaluation criteria for green business and production branch; the Ministry of Finance and the State Securities Commission need to prepare and submit to the Government a Decree on green bond issuance support as well as regulations on information disclosure control, capital use and project monitoring. For the areas issued green bonds, it is necessary to define specific areas, list of priority projects and clear and specific criteria for green project selection. There are also a number of other issues that need to be addressed such as developing green indexes, evaluating green investment certificates issued by investment funds for green projects, programs and sectors…

- From banks: need to play an active role in building and developing green banks in Vietnam. Banks should be aware that the development of green banking is an inevitable trend in the present and future period. Currently, there is no bank in Vietnam considered as a green bank, but only some bank providing green banking services or lending activities linked to environmental commitments.

- From credit institutions: need to pay more attention to building environmental risk management strategies as well as natural resource risk management (land, water resources ...) in business and production activities process. Besides, promoting the role of microfinance organizations has important implications in the development of green financial system. Microfinance institutions need to develop strategies to mobilize socialized capital from domestic and international donors.

- From investors and enterprises: need to invest in technological innovation towards green technology, public dissemination of corporate social responsibility reports. Business managers need to raise by themselves awareness of social and environmental issues, as well as position and importance of providing clean, environmentally friendly and healthy products. Green investors play an important role in building a network to encourage potential investors to invest in green sectors. Participating in the market individuals should also diversify their investments and increase expectations for sustainable development in the future. Take advantage of the idle money to invest in green projects will bring many values to the society.

- From consumers, individuals and households: need to have a sense of responsibility for environmental protection, green jobs and green skill development. Green consumers play an important role in the balance of supply - demand in the market, stimulating the green economy. If more and more people raise awareness and switch to using green products to protect the environment, more businesses and organizations will participate in green fields, thereby the development of green financial system will be promoted in Vietnam.

5.2. Some specific recommendations for the management authorities

For the Government

First, strongly commit to implement the development strategy of the country towards the transition to the green economy model, specifically:

- Establish strategic directions for the creation of green industries and sustainable growth.

- Develop stable policy with clear commitments to support the formation of green industries.

Second, in the early stage of green financial market development should implement support measures to attract financial resources for the green economy, including:

- Prioritize allocating adequate funds from central and local budgets for implementing green growth strategies, especially improving energy efficiency and renewable energy development.

- Ensure a minimum profit level for encouraging businesses to invest in industries that use green technologies and produce green products.

- Issue policies for encouraging the financial system to fund green industry development and sustainable growth, and to develop new financial products to support a low carbon economy.

Third, support to raise people's awareness of environmental protection through:

- Increase education and propaganda about environmental protection, waste separation, and economical natural resource use…

- Advocate consumption habit change with increasing choice of green, clean and environmentally friendly products.

For the Ministry of Finance, the State Securities Commission

First, continue to perfect the green capital market development orientation:

- Complete the green government bond issuance project to submit to the Government for approval to broadly implement.

- Develop and implement supporting policies for green capital markets such as: fiscal policies (taxes, fees) as well as guarantee mechanism facilitating green sectors.

Second, develop policies to support green capital markets through:

- Actively participate in cooperation with international financial institutions like WB, IFC, ADB... and international green financial funds to take advantage of their green development capital.

- Consider on establishing a green credit-finance fund for professionalizing green credit for important projects.

6. Green financial framework design recommended in the project "Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel"

Goal of developing a green financial framework

Development of a Green Finance Framework, to sustain the shifting of enterprises toward a non-POPs and a non-Mercury manufacturing.

Green Finance framework designed, funded and implemented to support private sector on getting incentives policy (eg tax, fee, credit fund, investment equity). Ecolabel improved, funded and properly communicated, building on national and other finance institutions (eg the VietNam Environment Protection Fund (VEPF)).

A Green Finance Framework will be developed with the purpose to:

- Support the quality-controlled conversion of production lines, toward less-chemically intensive products and materials, replacement of POPs with non-POPs/non-hazardous chemicals, management of obsolete POPS and mercury stocks;

- Support the private sector to get incentives policy (eg tax, fee, credit fund, investment equity) in production of eco-friendly products carrying Ecolabel.

Implementation orientation

Under this output, the project will therefore identify and implement green finance instruments aimed at:

(1) Speeding up the process of replacing mercury products (thermometers, lights) with non-mercury products;

(2) Implementing Extended Producer Responsibility (EPR) schemes to ensure that mercury containing products at their end of life stage are properly processed and disposed of;

(3) Supporting industries on the investments related to the design and instalment of air pollution control systems, aimed at reducing emission of mercury and U-POPs (as very often these technologies can reduce both);

(4) Support industries on environmentally sound design of article and materials which are intrinsically compliant with flame-retardant or water-repellence standards and therefore do not need chemical treatment.

To achieve this goal, enterprises will be assisted in identifying and submitting applications to access finance from green financing schemes, particularly these provided by governmental entities, like the Vietnam Environmental Protection Fund, the National Technology Innovation Fund (when a new charter will be approved), the Vietnam Development Bank, and by bilateral entities like international development banks and foreign

donors. More specifically, applicants will be guided on how overall Ecolabelling/EPR scheme and related policies will have the access to finance mechanism.

The project will also assist VEPF on training event for partners to raise the awareness of enterprises on possible green finance instruments, and to facilitate their access to competitive loan and grants, in order to support quality-controlled conversion of production lines, and to manage obsolete POPS and mercury stocks. A grant financial support with a high leverage factor (1/10) will be provided to support projects in the field listed above.

(5) One or more Green-Financing entities will be identified (VEPF has already committed to work as a Green Financing entity for the project);

(6) The existing rules or list of eligible project under the Green-Financing entity will be updated to include new eligible projects identified by the project;

(8) The project will assist enterprises to submit their projects to the Green-Financing entity, and will provide the Co-financing entity with a small grant intended to cover part of the operational expenses;

(9) The Co-financing entity will fund the project at an agree interest rate applied only to projects identified under the project, for an overall budget of USD 5,000,000, and with an interest rate of 2.5% over max. 10 years.

In this way, considering that the commercial interest rate in Vietnam is around 6.5%, and that the Green Financing Entity (VEPF or others) will provide loan at around 2.5% interest rate for an overall amount of 5,000,000 USD, the direct co-financing from VEPF over a total loan of 5,000,000 disbursed over 10 year may be calculated as ((6.5%-2.5%)×10) ×5,000,000) = 2,000,000 USD; the cash co-financing from the enterprises subscribing the loan would be 5,000,000 USD plus 14,000,000 USD from direct investment, and the GEF grant contribution to cover technical assistance and initial investment for the enterprises applying for the Green Fund would be 1,500,000. In other words, the leverage mechanism established under this green-financing scheme could mobilize 19,000,000 USD cash against a GEF financing of 1,500,000 USD, and will be entirely accountable and traceable.

The project will develop a Green Financing Framework, consisting in (1) eligibility criteria for projects to be submitted by the industry, to be established under the project in compliance with Stockholm and Minamata convention; (2) Investment mobilized from private sector of 19,000,000 USD, for supporting projects submitted by the industries, disbursed with a competitive interest rate (around 2.5%); (3) a grant covering part of the investment made by the industries (up to 1,500,000 USD) covering the incremental cost of their projects; (4) technical support to facilitate the preparation of technical documents and layouts for submission to the Green Financing Framework. It is expected that, given the above favorable conditions, and the stricter regulations enacted by the GOV on POPs and mercury, the available fund placed under the Green Financing Framework will be completely booked very quickly through the projects submitted by the industry. Therefore the combined financial support ensured through the reduced interest rate provided by the Green Financing entity, the technical assistance, and the GEF grant of 1,500,000 USD will mobilize investment from industries for an overall amount of 19,000,000 USD.

The project envisages mobilization of capital for an amount of around 2,925,000 USD from MONRE (VEA+VEPF), recurrent expenditure from VEA up to 2,225,000 USD, plus a more limited amount coming from MOIT and MOH (300,000 USD each). As indicated in the PIF, Vietnam is quite keen on investment on POP management. The PM approval of National Target Program (NTP) in 2018 at Decision No. 807/QD-TTg allocates 20 million USD cash for cleanup of POP contaminated sites. Investment on monitoring is significantly increasing.

Vietnam Chemicals Agency (Vinachemia) under MOIT is now implementing activities for reduction and phasing out of Mercury used products and manufacturing process. Vinachemia is planning to develop a draft Decree for implementation of Minamata Convention in Vietnam. Similarly in MOH, Health Environment Management Agency (VIHEMA) also looks forward to eliminating the use of mercury health devices in the sector and have been carrying out some initial training and public awareness raising on the harm from mercury contained products and phasing out the use of mercury amalgam. Specific details on the implication of these activities on investment mobilization, currently estimated conservatively in 300,000 USD for MOIT and 300,000 USD for MOH, will be provided at PPG stage.

On the side of MONRE, the VEPF (Vietnam Environmental Protection Fund), as a department of the Ministry of Natural Resources and Environment, is at the core of the state financial strategy for the implementation of environmental projects. The VEPF holds a total chartered capital of VND 1 trillion (approximately USD 43.15 million), including VND 727 billion (approximately USD 31.38 million) allocated by the state budget, and now has submitted the Plan to the Government to raise the chartered capital to VND 2 trillion during the period 2020-2021. Access to this fund is currently granted to eligible environmental activities, established under the Annex III of Decree No. 19/2015/ND-CP dated 14/02/2015, amended at Decree No. 40/2019/ND-CP guiding implementation of Vietnam Environmental Protection Law.

The project intends also to support VEPF on the revision of the "List of environmental protection activities eligible for preferential support" under Annex III of decree No. 19/2015/ND-CP dated 14/02/2015, 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 air pollution control systems. Ecolabelling criteria for alternatives to mercury products (lights, thermometers, sphygmomanometers) and POPs free alternative products from plastic paint, polymers and other sectors will be developed and proposed for inclusion under the list of eligible projects to be funded with the Green Financing Framework.

Annex 16: Cost of air pollution treatment technology for small enterprises in Vietnam

(File attached separately)

ANNEX 16

Cost of air pollution treatment technology for small enterprises in Vietnam. Technical and financial considerations

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1. Control of mercury releases.

Article 8 of the Minamata Convention on Mercury is concerned with controlling and, where feasible, reducing emissions of mercury and mercury compounds to the atmosphere from point sources falling within the source categories of:

- coal-fired power plants and coal-fired industrial boilers
- cement clinker production
- waste incineration
- primary non-ferrous metal smelting

Together, these sectors are estimated to account for about 50% of total global atmospheric mercury emissions. (1). Mercury emissions from these sources originate from thermal treatment or combustion of materials containing trace amounts of mercury, such as fuels (e.g. coal), raw materials (e.g. mineral ores, limestone) and wastes (e.g. municipal, hazardous, medical wastes). The combustion of coal is one of the main sources of release in the environment. UNEP carried out a revision of the inventory of mercury worldwide in 2008, based on which emerged that coal combustion from coal combustion plants or from residential coal combustion accounts for around 46% of the overall releases (2).

During thermal processing of these materials, mercury undergoes physical and chemical transformations, subsequently ending up in the flue gases. Mercury in the flue gases can be classified into three major forms (speciation); gaseous elemental mercury (Hg^0), gaseous oxidized mercury (Hg^{2+}), and particulate-bound mercury, Hg(p), which can be either Hg^0 or Hg^{2+}.

The speciation is largely determined by properties of the input materials, the operating conditions of the processing plant and installed Air Pollution Control (APC) systems. The different emissions sources can have therefore different mercury speciation profiles, which should be considered for selecting appropriate mercury control strategies.

- Primary measures need to be established to reduce mercury content in input materials prior to thermal treatment, thus avoiding or reducing mercury entering the flue gas systems;
- Secondary measures need to be set up to control mercury emissions after the thermal treatment process, e.g. by applying multi-pollutant ''co-benefit'' techniques and/or mercury-specific abatement techniques.

Co-benefit techniques may be classified in the following categories:

Techniques that, by removing particulate, also contributes to the removal of particulate-bound mercury (like Electrostatic Precipitators or Fabric Filters);

Techniques that, by promoting the oxidation of Hg^0 to Hg^{2+}, contributes to the increase of the of particulate bound mercury which may be then removed by techniques for the removal of particulate (like Selective Catalytic Reduction);

Other techniques capable to remove mercury in their reduced stage (like Wet Scrubbing or Flue Gas Desulfurisation).

A summary of the effectiveness of different technologies for the removal of mercury from fluegas is reported in table below:

Table 1: Mercury retention in different emission reduction systems. Average mercury capture in % of mercury input to reduction device

Post-combustion Control Strategy	Post-combustion Emission Control Device Configuration	Average Mercury Capture by Control Configuration (no. of tests in study in brackets)		
		Coal Burned in Pulverized-coal-fired Boiler Unit		
		Bituminous Coal	Sub-bituminous Coal	Lignite
PM Control Only	CS-ESP	36 % (7)	3 % (5)	- 4 % (1)
	HS-ESP	9 % (4)	6 % (4)	Not tested
	FF	90 % (4)	72 % (2)	Not tested
	PS	Not tested	9 % (1)	Not tested
PM Control and Spray Dryer Adsorber	SDA+ESP	Not tested	35 % (3)	Not tested
	SDA+FF	98 % (3)	24 % (3)	0 % (2)
	SDA+FF+SCR	98 % (1?)	Not tested	Not tested
PM Control and Wet FGD System (a)	PS + FGD	12 % (1)	-8 % (4)	33 % (1)
	CS-ESP+FGD	74 % (1)	29 % (3)	44 % (2)
	HS-ESP+FGD	50 % (1)	29 % (5)	Not tested
	FF+FGD	98 % (2)	Not tested	Not tested

Source (3)

Note: SCR: Selective catalytic reduction; CS-ESP - Cold-side electrostatic precipitator; HS-ESP - Hot-side electrostatic. precipitator; FF - Fabric filter; PS - Particle scrubber; SDA - Spray dryer adsorber system; FGD – Flue gas desulfurization.

As the project indeed deal with small / medium manufacturing enterprise, the focus should be mainly on the implementation of effective system for the reduction of particulate, noticing that several manufacturing plant in Viet Nam either completely lacks dust control technologies, or they are equipped with cyclone filters that are capable only to remove the coarser fraction of the particulate.

2. Control of PCDD/F releases

PCDD/F may be releases by several manufacturing sources, although the common factor for the generation and releases of dioxins in the atmosphere is the presence of a combustion process in the manufacturing.

Based on the updated NIP inventory, which utilized statistical data of industrial sectors and UNEP toolkit emission factors, the waste incineration sector still accounts for the largest amount of release of PCDD/F in the environment (288g/Teq in the air and 178 g/Teq in the waste). The metal industry contributes an overall amount of 48g/Teq, and cement production with 18g/Teq.

Recent sampling and analysis carried at the stack of waste incinerators and industrial plants in the Binh Duong province under the recently concluded “Vietnam POPS and Sound Harmful Chemicals Management Project” (GEF 5067), revealed that 8 out of 9 incineration plants have Dioxin/Furan flue gas concentrations exceeding 1.23 - 40 times the regulatory limit of 0.6 ngTeq/m3 set by QCVN 30:2012/BTNMT, and Metal production facilities have PCDD/F level of 2.18 - 2.57 times higher than the regulatory limit of 0.6ngTeq/Nm3 set by QCVN 51:2013/BTNMT. Considering that the regulatory limit is already 6 times higher than the recommended Stockholm Convention BAT value, these data are obviously worrisome.

Technologies for the reduction of the release of PCDD/F are usually rather complex and expensive, for the following reasons:

- The regulatory limits and the BAT level are extremely low (in the order of tenths of ng per normal cubic meter of flue gas, or even lower), therefore the technology have to be highly efficient to ensure the abatement down to the regulatory level;
- The incineration flue gas are usually released at high temperature, humidity and with a low pH, representing therefore an heavy corrosive environment for the APCS equipment;
- As PCDD may be reformed in the fluegas at certain temperature and chemical conditions, the process should ensure a fast and effective control of the temperature.

Based on the latest BAT conclusion established in Europe (biblio), waste incineration requires the following processes for an effective reduction of the PCDD/F from the stack (Table xxxx). From the table it can be seen that some of the proposed techniques are active at the same time for both PCDD/F and mercury.

Technique description	Purpose	Effectiveness to remove PCDD/F and mercury simultaneously.
1) Optimisation of the incineration process:;	To ensure that proper temperature and oxygen are achieved in the process, so that PCDD/F are completely destroyed and not reformed.	Limited to PCDD/F
2) Control of the waste feed:	To prevent the incineration of waste with high content of mercury or chlorine;	Effective for both PCDD/F and mercury
3) On-line and off-line boiler cleaning;	Efficient cleaning of the boiler bundles to reduce the dust residence time and accumulation in the boiler,	Limited to PCDD/F
4) Rapid flue-gas cooling:	To prevent the generation of the PCDD/F through the de-novo process;	Limited to PCDD/F
5) Dry sorbent injection:	Injection of lime powder, activated carbon, sulfur-activated carbon is effective to neutralize HCl, HF and to reduce the release of PCDD/F and mercury);	Effective to both PCDD/F and mercury.
6) Fixed- or moving- bed adsorption;	Fixed or moving bed filter (lignite, activated carbon, others) to absorb pollutants.	Effective to both PCDD/F and mercury.
7) SCR.	Used to reduce NOx emission but also effective in PCDD/F reduction;	In addition to PCDD/F destruction, helps the oxidation of Hg0 in Hg2+ and subsequent removal as particulate
8) Catalytic filter bags:	Special bag filters which can ensure the adsorption and destruction of PCDD/F;	Limited to PCDD/F
9) Carbon sorbent in a wet scrubber	The addition of carbon sorbent in the wet scrubber enhances the	Effective to both PCDD/F and mercury.

	removal of PCDD/F from the flue gas.	

3. Two examples of APCS retrofitting of small manufacturing plants

UNIDO undertook the calculation for the retrofitting of two medium size plant in Vietnam with a more efficient air pollution control system[1].

In one case, (Duong Giang floating glass factory) the calculation basically concerned the retrofitting of the plant with an ESP (electrostatic precipitator). As stated in the UNIDO report, "*ESP are among the most common APCS adopted to reduce the emission of particulate in the atmosphere from glass furnaces. Although an ESP would not prevent the de-novo formation of PCDD/F, it would greatly reduce the release of dust to which large part of PCDD/F emission are adsorbed. This condition however would be only verified if the temperature of the flue gas is well below 350°C, which is the boiling point for PCDD/F. If the temperature is in the order of 200°C or less, it may be assumed that around 80% of the PCDD/F is adsorbed to the particulate. Therefore, a removal efficiency of 99.5 would result in a PCDD removal efficiency of around 79.6."*

The result of the calculation were that, for an ESP with an overall SCA (specific collection area) ranging from 427 $m^2/(m^3/s)$ to 873 $m^2/(m^3/s)$, and a fluegas rate of 5.5. Nm3/s the cost would be in the order of 320,000 USD. That cost was in the range of the cost calculated by USEPA as 20 to 40 USD/SFCM (Standard Cubic Foot per Minute) (700 to 1400 USD/Nm^3/Min, or 11.7 to 23.3 USD//Nm^3/hr).

For the same plant, the company reported a planned investment for a lime-slurry injection system (to remove SO2) with a cost estimated in the order of 50,000 USD. What is interesting is that the cost of that plant is significantly lower than the estimated cost in Europe for a similar plant, as literature data provides much higher investment cost estimate, in the range of 174,000 to 620,000 eur[2] for plants of similar size.

For another plant (Changxin Company Ltd), UNIDO did not calculate the cost but reported as potential retrofitting, the option to install an ACI (activated carbon injection) system. The estimation of the flue gas flowrate was in the order of 2000 Nm^3/hr. Based on the estimates provided in the section xxxx, that would lead to an investment cost in the order of

4. Cost of APCS technologies

The following technologies have been taken into consideration:

- Activated Carbon and/or Lime Injection: based on the report from ICAC (biblio), "The costs for activated carbon injection consist of two components: 1) capital costs for the sorbent storage and injection equipment and 2) the operating costs associated with the expendable sorbent. The capital costs for the equipment are approximately one million dollars for all plants up to approximately 500 MW. For larger power plants, a second silo may be required which will increase the capital costs by approximately 50 percent " The same report states that *" Cost analyses by both EPA and DOE have shown that greater than 80 percent reduction in mercury emissions can be achieved at a cost ranging from $1-3 per MWh"*.
- Fabric filter
- Electrostatic Filter
- Rapid quencher

Depending on the typology of the emission, their concentration and temperature, APCSs may be capable to abate at the same time (although at different rates) PCDD/F and mercury compounds. Table 3, extracted and

[1] Carlo Lupi (2019):Reassessment of the potential dioxin release reduction in two industrial plants and proposal for improvement of the current APCS. Prepared for UNIDO under the project "Implementation of eco-industrial park initiative for sustainable industrial zones in Vietnam - project ID 100052. 2013

[2] https://emis.vito.be/en/techniekfiche/dry-lime-injection

rearranged from the EU BAT conclusions[3], lists the technologies that may be considered to effectively remove PCDD and mercury simultaneously.

Table 1: Effectiveness of APCSs for the simultaneous abatement of mercury and PCDD/F

Technique description	**Purpose**	**Effectiveness to remove PCDD/F and mercury simultaneously**
10) Optimization of the incineration process	To ensure that proper temperature and oxygen are achieved in the process, so that PCDD/F are completely destroyed and not reformed	Limited to PCDD/F
11) Control of the waste feed	To prevent the incineration of waste with high content of mercury or chlorine	Effective for both PCDD/F and mercury
12) On-line and off-line boiler cleaning	Efficient cleaning of the boiler bundles to reduce the dust residence time and accumulation in the boiler	Limited to PCDD/F
13) Rapid flue-gas cooling	To prevent the generation of the PCDD/F through the de-novo process	Limited to PCDD/F
14) Dry sorbent injection	Injection of lime powder, activated carbon, sulfur-activated carbon is effective to neutralize HCl, HF and to reduce the release of PCDD/F and mercury	Effective to both PCDD/F and mercury
15) Fixed- or moving-bed adsorption	Fixed or moving bed filter (lignite, activated carbon, others) to absorb pollutants	Effective to both PCDD/F and mercury
16) SCR	Used to reduce NOx emission but also effective in PCDD/F reduction	In addition to PCDD/F destruction, helps the oxidation of Hg0 in Hg_2^+ and subsequent removal as particulate
17) Catalytic filter bags	Special bag filters which can ensure the adsorption and destruction of PCDD/F	Limited to PCDD/F
18) Carbon sorbent in a wet scrubber	The addition of carbon sorbent in the wet scrubber enhances the removal of PCDD/F from the flue gas	Effective to both PCDD/F and mercury

Table 4 reports a summary of the investment and operation costs, either international or specific for Vietnam, gathered during research carried out in the course of the project preparation. From the summary, it may be seen that the investment cost, expressed as USD/Nm^3/h, is higher for small plants (over 12 USD/ Nm^3/h for a small incinerator in Vietnam), while it is relatively low for large plants (2.6 USD/Nm^3/h for a large glass factory). Investment for the treatment of an overall amount of 1,000,000 Nm^3/h would be in the order of 2.6–12 million USD in Vietnam, depending on the typology of plants to be retrofitted.

Table 2: Summary of costs analysis for APCS capable to treat both mercury and PCDD/F - International and Vietnam costs

Technology	**Suitable for**	**Investment cost / Nm^3**	**Operational cost / Nm^3**
Dry sorbent Injection (lime, activated carbon)	Incinerators, secondary metal	An investment cost in the order of 1.5 USD per Nm^3/h based on the following estimates: Nm^3/h per MW of coal: 1296 Nm^3; investment cost around 1 million USD for a plant with a capacity of 500 MW.	An average of 1–3 USD per MWh (around 0.0007–0.0023 USD per Nm^3/h) for a removal factor of around 80%

[3] DECISIONS - COMMISSION IMPLEMENTING DECISION (EU) 2017/1442 of 31 July 2017 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants

Activated carbon filter beds	Incinerators, glass furnaces, secondary metal	5–10 EUR / Nm^3/h without regeneration system 0.86–6 EUR/Nm^3/h incl. carbon filling (4–5 tons)	600–1300 EUR per ton of non-impregnated activated carbon incl. re-collection of saturated carbon 1700–2500 EUR per ton of non-impregnated activated carbon incl. re-collection + carbon processing 3000–4500 EUR per ton of impregnated activated carbon incl. re-collection of saturated carbon 4000 EUR per ton of activated carbon
Dust filter cyclone; Solution Absorption Tower; Moisture separation tower; Activated carbon adsorption tower	Secondary metal, incinerators in Vietnam	Investment cost for • a flow gas rate of 16,600 Nm^3/h: USD 110328. (6.64 USD/Nm^3/h) a flow gas rate of 5626 Nm^3/h: 69501. (12.36 USD/Nm^3/h	Data not available for operational cost
Exhaust cooling tower -Solution absorption tower Dehumidification tower; Bag Filter, Activated carbon adsorption tower	Glass factory in Vietnam	Investment cost: Glass factory with a capacity: 300 tons/day and an exhaust smoke volume: 150,000 Nm^3/h USD 389185 (2.6 USD/Nm^3/h)	Data not available for operational cost

https://emis.vito.be/en/welcome?language=en for cost estimation.

5. Cost Estimates provided by Vietnamese Manufacturers (data provided by Mecie LTD, Hanoi).

5.1. Cost estimate for the Air Pollution Control System in a secondary Aluminum recycling factory.

Design parameters: - Capacity: 10,000 tons/year –

Flow rate:: 16,600Nm3/h

- Expected emissions components include: Temperature, Aluminum dust, COx, NOx, SOx, Hg compounds, dioxin/furan, Fluorine gas compounds, other organic compounds
- Proposed treatment technology: Negative pressure fan; exhaust gas collection pipe; Exhaust cooling tower; dust filter cyclone ; Solution Absorption Tower ; Moisture separation tower; Activated carbon adsorption tower.

#	Item	Unit price USD	Total USD
1	Ducts and suction system - Main duct D 600mm - Suction hood designed according to the furnace (maximum 02 furnaces) 2mm thick CT3 steel material	10957	10957
2	Exhaust fan (22KW)	2374	2374
3	Exhaust cooling tower - direct cooling - Device size D 2200* H3500mm - 3mm thick steel 304	11870	23739

4	Cyclone dust filter Diameter D 1400mm Material 304 stainless steel 2mm thick	4337	4337
5	Cooling water cooling tank - Brick tank (can be built by the factory itself) - Dimensions: 4000*8000*H1200mm	5478	5478
6	Solution absorption tower - Dimensions D2200*H4600mm - 3mm thick steel 304	15978	15978
7	Dehumidification tower - Dimensions D2200*H3500mm - 3mm thick steel 304	12783	12783
8	Carbon adsorption tower - Dimensions: 2910*1500*2500mm - Material CT3 Steel 2mm .	10043	10043
9	Control cabinet - use inverter - wiring from cabinet to equipment	3652	3652
11	Transportation costs	0.10	2283
12	Installation fee	8674	8674
	Total		100298
	Total including VAT		110328

5.2. Cost estimate for an Air Pollution Control System for a small incinerator.

Initial parameters:

- Capacity: 2 tons/h
- Exhaust smoke volume: 5,626Nm3/h

Expected emissions components include: Temperature, Dust, COx, NOx, SOx, Hg compound, dioxin/furan, fluorine compound, organic gas compound...

Proposed treatment technology:

- Basically, the elements to be treated in the exhaust gas of an incinerator are similar to those of an aluminum recycling plant, so the treatment technology used is the same.
- Exhaust gas collection pipeline -> Exhaust gas cooling tower -> Dust filter cylinder -> Solution absorption tower -> Moisture separation tower -> Activated carbon adsorption tower.

#	Item	Unit price USD	Total USD
1	Ducts and suction system - Main duct D 400mm 2mm thick CT3 steel material	18261	18261
2	Exhaust fan (11Kw)	1461	1461
3	Exhaust cooling tower direct cooling – Device size D 1500* H3500mm - 2mm steel 304	5478	10957
4	Cyclone dust filter Diameter D 800mm Material 304 stainless steel 2mm thick	2009	2009
5	Cooling water cooling tank - Brick tank (can be built by the factory itself) - Dimensions: 4000*8000*H1200mm	5478	5478
6	Solution absorption tower - Dimensions D1500*H4000mm - 2mm thick steel 304 material	7304	7304

7	Dehumidification tower - Dimensions D1500*H3500mm - 3mm thick steel 304	6391	6391
8	Carbon adsorption tower - Dimensions: 2410*1500*1500mm - Material CT3 Steel 2mm . thick	4565	4565
9	Control cabinet - use inverter - wiring from cabinet to equipment	2739	2739
10	Chimney – CT3 steel	2191	2191
11	Transportation cost	0	1826
2	Installation cost	18261	18261
			63183
			69501

5.3. Cost estimate for an Air Pollution Control System in a Glass recycling factory

Initial parameters:

- Capacity: 300 tons/day
- Exhaust smoke volume: 150,000Nm3/h

Expected emissions components include: Temperature, Dust, inorganic and organic gas mixtures... Hg compounds, dioxins/furans.

Proposed treatment technology:

- Suction capture system, exhaust gas collection pipeline -> Exhaust cooling tower -> Solution absorption tower -> Dehumidification tower -> Cloth bag dust filter tower -> Activated carbon adsorption tower.

Cost calculation:

- Note: It should be considered to divide the 150,000Nm3/h exhaust gas treatment system into 3 gas treatment systems, each of which treats 50,000Nm3/h

Below is an estimate for an exhaust gas treatment system with a flow rate of 50,000Nm3/h

#	Item	Unit price usd	Total USD
1	Duct and suction system D1000mm Steel 2mm	68478	68478
2	Exhaust fan 75kw	11413	11413
3	Exhaust cooling tower - direct cooling - Device Dimensions Length * Width * Height = 2400*8000*4000mm - 2mm thick steel 304	57065	57065
4	Cooling water cooling tank - Brick tank (can be built by the factory itself) - Dimensions: 5000*12000*H1500mm	8217	8217
5	Exhaust gas cooling tower + dehumidifier - PP direct cooling - Device Dimensions Length * Width * Height = 2400*8000*4000mm - 2mm thick steel 304 material	73043	73043
6	Cloth bag filter tower Dimensions: length x width x height = 8000x2200x6000mm	57065	57065

	Material: 2mm . thick CT3 steel		
7	Carbon adsorption tower - Dimensions: 5400*1950*2800mm - Material CT3 Steel 2mm . thick	24652	24652
8	Control cabinet - use inverter - wiring from cabinet to equipment	13696	13696
9	Chimney Ct3 steel	13696	13696
10	Transport	0	3652
11	Installation	22826	22826
			353804
			389185

Annex 17: Preliminary list of industries for the survey

(File attached separately)

Annex 17. List of industries with potential use of POPs in the manufacturing process, to be visited during project implementation

Industrial sector	Company name and location
Polystirene, XPS/EPS	Dong A Company: Lot 36, Tan Tao Industrial zone, Tan Tao road, Tan Tao A ward, Binh Tan district, Ho Chi Minh city
	Panel Dingsen Vietnam, C1, Dai Dong Industrial zone, Bac Ninh; Tel: 0985263822; email; rockway.panels.vn@gmail.com
	Bac Viet Plastic Company, Battalion 65, Trai Ban, Phu Thi, Gia Lam district, **Ha Noi.** Tel: 0984 482 345, 094 949 6568; chinhtran80@gmail.com; www.epsbacviet.com.vn
	Loc Phat Company, 141 Xuan Hong road, 12 ward, Tan Binh district, **Ho Chi Minh city.** Tel (028) 39481664, Hotline: 0908 448 507; locphat008@yahoo.com; www.mopxoplocphat.bizz.vn; www.locphat.znn.vn
	Thacopart company (technical plastic), Chu Lai Industrial zone, Quang Nam, Tel: 0901.806.310
	Nguyen Giang Plastic company, Bui Thi Xuan road, Tan Binh ward, Di An city, Binh Duong, Vietnam; Tel: (0274) 3772355, 0937.616.864
Fire retardant additives for plastic	DAI A Plastic, Hanoi. Floor 16, Nam Cuong Building, Km 4, To Huu Street, La Khe Ward, Ha Dong District, Hanoi City, Tel: (+84) 243200 6580, (+84) 24.3200 6581, Hotline: (+84) 948881678
	DAI A Plastic, HCM. Floor 2, PLS Building - Y12 Hong Linh, Ward 15, District 10, City. Ho Chi Minh. Phone: (+84) 2836366648, Hotline: (+84) 988113881
Paint manufacturing	Nishu paint (already included in the Green Chemistry Project)
	Hanoi Synthetic Paint JSC, Cau Buou St., Thanh Liet Ward, Thanh Tri District, Hanoi, Vietnam. Tel. +84 24 36880086, 36883283, +84 24 36884284
	Nippont Paint in Hanoi/HCMC
	AkzoNoble Company in HCMC
Information on SCCP as plasticizers and PFOS/PFOAS in leather and textile industry	LG Vina (Join Venture): production and trading plasticizers (DOP and others) Add: Room 1101 Sun Wah Building, 115 Nguyen Hue Str., Dist 1, HCMC Tel: (84-8) 38278070/(84-61) 3 Email: lgvina@lgvinachem.com
	Mr. Le van Huynh, STAHL Company, 364, Tan Binh Dist. HCMC Institute of Leather and Shoes of Vietnam (Hanoi) Textile and Garment Group (Hanoi) Website: www.lgvinachem.com

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Annex 18: Tentative list of hospitals for the demonstration of non-mercury thermometer

(File attached separately)

Annex 18. : List of health-care facilities for the demonstration of mercury thermometer replacement

The list of healthcare facilities has been preliminarily compiled taking into account the need to involve hospital from different areas of Viet Nam, including private hospitals, and hospital administered by municipalities, provincial or military administration. The hospital listed were reportedly using mercury thermometers when the list was compiled.

No	Name		Type	Location	Note
	Vietnamese	English			
State hospitals in national/central level					
1	Bệnh viện Bạch Mai	Bach Mai Hospital	General	Hanoi	
2	Bệnh viện Châm cứu Trung ương	National Hospital of Acupuncture	Specialized		
3	Bệnh viện Y học cổ truyền Trung ương	National Hospital of Traditional Medicine	Specialized		
4	Bệnh viện E	E Hospital	General		
5	Bệnh viện Hữu Nghị	Friendship Hospital	General		
6	Bệnh viện K	K Hospital	Specialized		
7	Bệnh viện Phổi Trung ương	National Lung Hospital	Specialized		
8	Bệnh viện Mắt Trung ương	Central Eye Hospital	Specialized		
9	Bệnh viện Nhi Trung ương	Vietnam National Children's' Hospital	Specialized		
10	Bệnh viện Nội tiết Trung ương	National Hospital of Endocrinology	Specialized		
11	Bệnh viện Phụ sản Trung ương	National Hospital of Obstetrics and Gynecology	Specialized		
12	Bệnh viện Tai Mũi Họng Trung ương	Central Ear, Nose and Throat Hospital	Specialized		
13	Bệnh viện Việt Đức	Viet Duc Hospital	General		
14	Bệnh viện Nhiệt đới Trung ương	National Hospital for Tropical Diseases	Specialized		
15	Bệnh viện Lão khoa Trung ương	National Geriatric Hospital	Specialized		
16	Bệnh viện Da liễu Trung ương	National Hospital of Dermatology	Specialized		
	Bệnh viện Răng Hàm Mặt Trung ương Hà Nội	Hanoi Central Dental Hospital	Specialized		
17	Bệnh viện 108	Hospital 108	General		Military Hospitals
18	Viện Y học cổ truyền Quân đội	Military Hospital of Traditional Medicine	Specialized		
19	Bệnh viện Quân y 103	Military Hospital 103	General		
20	Viện Bỏng quốc gia Lê Hữu Trác	Le Huu Trac National Burn Hospital	Specialized		
21	Bệnh viện Chợ Rẫy	Cho Ray Hospital	General	Ho Chi Minh city	
22	Bệnh viện Thống Nhất	Thong Nhat Hospital	General		
23	Bệnh viện Răng Hàm Mặt Trung ương TP. Hồ Chí Minh	Central Dental Hospital (Ho Chi Minh city)	Specialized		
24	Bệnh viện Quân y 175	Military Hospital 175	General		
25	Bệnh viện Trung ương Huế	Hue Central Hospital	General	Thua Thien-Hue	
26	Bệnh viện Đa khoa Trung ương Thái Nguyên	Thai Nguyen National Hospital	General	Thai Nguyen	
27	Bệnh viện Đa khoa Trung Cần Thơ	Can Tho National Hospital	General	Can Tho	
28	Bệnh viện Đa khoa Trung ương Quảng Nam	Quang Nam Central General Hospital	General	Quang Nam	

No	Name		Type	Location	Note
	Vietnamese	English			
29	Bệnh viện Việt Nam - Cuba Đồng Hới	Vietnam-Cuba Hospital Dong Hoi	General	Quang Binh	
State hospitals at provincial level					
30	Bệnh viện Đống Đa	Dong Da Hospital	General	Hanoi	
31	Bệnh viện Xanh-Pôn	Saint - Paul Hospital	General		
32	Bệnh viện Việt Nam-Cu Ba	Vietnam-Cuba Hospital	General		
Private hospitals					
33	Bệnh viện Thu Cúc	Thu Cuc Hospital	General	Hanoi	
34	Bệnh viện Đa khoa quốc tế Vinmec Times City	Vinmec Times City International Hospital	General		
35	Bệnh viện Đa khoa Trí Đức	Tri Duc General Hospital	General		