GEF-8 PROJECT IDENTIFICATION FORM (PIF)

TABLE OF CONTENTS

General Project Information

Project Title	
Life Cycle Management Project in Plastic Industry in China	
Region China	GEF Project ID 11543
Country(ies) China	Type of Project FSP
GEF Agency(ies): UNDP	GEF Agency ID UNDP: 9797
Executing Partner Foreign Environmental Cooperation Center (FECO), Ministry of Ecology and Environment (MEE)	Executing Partner Type Government
GEF Focal Area (s) Chemicals and Waste	Submission Date 3/20/2024
Project Sector (CCM Only)	

Taxonomy

Capacity, Knowledge and Research, Knowledge Generation, Targeted Research, Knowledge Exchange, Innovation, Enabling Activities, Learning, Indicators to measure change, Theory of change, Adaptive management, Capacity Development, Influencing models, Strengthen institutional capacity and decision-making, Convene multi-stakeholder alliances, Transform policy and regulatory environments, Demonstrate innovative approache, Deploy innovative financial instruments, Stakeholders, Type of Engagement, Partnership, Information Dissemination, Consultation, Participation, Local Communities, Indigenous Peoples, Communications, Behavior change, Awareness Raising, Public Campaigns, Education, Civil Society, Trade Unions and Workers Unions, Community Based Organization, Academia, Private Sector, SMEs, Financial intermediaries and market facilitators, Large corporations, Individuals/Entrepreneurs, Beneficiaries, Focal Areas, Chemicals and Waste, Emissions, Waste Management, Persistent Organic Pollutants, Unintentional Persistent Organic Pollutants, Gender Equality, Gender results areas, Access and control over natural resources, Access to benefits and services, Knowledge Generation and Exchange, Participation and leadership, Gender Mainstreaming, Sex-disaggregated indicators, Women groups, Gender-sensitive indicators, Climate Change, Climate Change Mitigation, Sustainable Urban Systems and Transport, Disposal, Industrial Emissions, Plastics, Best Available Technology / Best Environmental Practices, Sound Management of chemicals and waste, Green Chemistry

Type of Trust Fund GET	Project Duration (Months) 60
GEF Project Grant: (a) 20,265,000.00	GEF Project Non-Grant: (b) 0.00
Agency Fee(s) Grant: (c) 1,823,850.00	Agency Fee(s) Non-Grant (d) 0.00
Total GEF Financing: (a+b+c+d)	Total Co-financing

22,088,850.00	182,385,000.00
PPG Amount: (e) 300,000.00	PPG Agency Fee(s): (f) 27,000.00
PPG total amount: (e+f) 327,000.00	Total GEF Resources: (a+b+c+d+e+f) 22,415,850.00
Project Tags CBIT: No NGI: No SGP: No Innovation: No	

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B "project description".(max. 250 words, approximately 1/2 page)

The current unsustainable plastics production and consumption patterns in the world result in toxic chemicals release, high production related GHG emission, high volumes of waste generation, environmental degradation, and harm to wildlife and ecosystems. The continued market demand for plastics materials, when combined with limited circular approach, will further exacerbate global toxic chemicals and plastic pollution. China is one of the world's largest producer and consumer of plastics, with plastics production accounting for nearly one-third of total global production. As such, China has an important role to play in ending the plastic pollution. Despite continuous efforts the country has made to prevent pollution over the last decade, there are still significant gaps towards adopting a full life cycle management system for China to ending the plastic pollution and improving resource efficiency.

The project aims to eliminate the production and use of problematic and avoidable plastics, reduce and prevent toxic and hazardous chemicals release, improve the plastic reuse and recycling system, and promote the utilization of low-value plastic waste, thus facilitating the transformation of plastics industry towards circularity and zero waste in China. Women and men play different roles and responsibilities within the life cycle of plastic management, and women face specific needs and challenges in this sector. In all activities engaging stakeholders, gender experts and women's groups and association representatives will be involved.

The project designed a wide range of upstream-midstream-downstream interventions in the plastic value chain and national policy framework, including: 1) development of policy and regulatory framework on plastics to introduce a list of chemicals and polymers of concern subject to prohibition or restrictions and applicable control measures, as well as capacity building activities for effective enforcement of regulations; 2) demonstration of environmentally friendly alternatives to plastics and BAT/BEP for reduction of plastic wastes, microplastics, and POPs, through technology and business model innovation, products eco-design, green packaging, sustainable logistics, green procurement, smart sorting, promotion of certification for recycled plastics, etc. 3) establishment of innovative financing mechanisms (e.g. Public-Private-Partnership (PPP), Extended Producer Responsibility (EPR), Deposit Refund System (DRS), Eco-environment-oriented Development (EOD)), business models, dedicated green finance platform and partnerships for sound management of plastics and wastes; and (4) effective data and knowledge management, information exchange, awareness raising, monitoring and evaluation.

The improvement of life cycle management system on plastics in China through this initiative will result in significant global environment benefits, including removing and/or disposing of 71,476 metric tons of POPs

in the plastic products, avoiding 42.89g-TEQ POPs emission to air, reducing generation and leakage of 1,429,522 tons plastic wastes, and mitigating GHG emission of 9,002,700 metric tons CO_2-eq.

Indicative Project Overview

Project Objective

The project aims to eliminate the production and use of problematic and avoidable plastics, reduce and prevent toxic and hazardous chemicals release, improve the plastic reuse and recycling system, and promote the utilization of low-value plastic waste, thus facilitating the transformation of plastics industry towards circularity and zero waste in China.

Project Components

1. Policy and regulatory framework strengthened along the life cycle of plastic.

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
3,000,000.00	27,000,000.00

Outcome:

1.1 Policy and regulatory framework strengthened on the plastic polymer and chemicals in plastic products.

1.2 Policy and regulatory framework strengthened on the plastic products.

1.3 Policy and regulatory framework strengthened on sound management of plastic wastes.

1.4 Capacity Building for national managerial capacity, enforcement, supervision of plastic and plastic products.

Output:

1.1.1 Conduct gender-sensitive studies on the Criteria for the identification of chemicals and polymers of concern, such as plasticizers, flame retardants, antioxidants, or PVC. Social and economic impact assessment of prohibitions and restrictions on chemicals and polymers of concern. Identify synergies among MEAs on chemicals and international instruments relevant to addressing plastic pollution.

1.1.2 Development and assessment on the List of chemicals and polymers subject to prohibition or restrictions and applicable control measures, such as PVC restriction in single-use packaging for the food industry taking into consideration specific gender-related aspects.

1.2.1 Update and improve the List of problematic and avoidable plastic products, including short-life and single-use plastic products and intentionally added microplastics, and establish the criteria for the identification of plastic products taking into consideration specific gender-related aspects.

1.2.2 Regulatory policies development on design and performance criteria for plastics and plastic products, while recommending targets for reduction, reuse, refill and repair of plastics and plastic products, such as

standards and regulations related to green packaging and green logistics in the fields of e-commerce, express delivery, and food delivery. Also recommending quality control standards for post-consumer recycled plastics.

1.3.1 Formulation and improvement of gender-responsive standards related to safe and environmentally sound collection, reuse, recycling and disposal, such as technical standards or specifications related to traceability and certification, environmental protection standards for the resource utilization of plastic waste, etc.

1.4.1 National managerial capacity, enforcement, supervision policies of plastic and plastic products strengthened with a focus on ensuring that women and gender experts are engaged.

1.4.2 Capacity building for monitoring methods of plastic polymer, products, and waste (including microplastic).
1.4.3 Conduct training for stakeholders including government authorities, relevant enterprises and researchers to improve their management and research capacity with a focus on ensuring that women and gender experts are engaged.

2.Reduction of POPs and GHG emissions throughout the life cycle of plastic products by introducing technological innovations.

Component Type	Trust Fund
Investment	GET
GEF Project Financing ($)	Co-financing ($)
12,300,000.00	110,700,000.00

Outcome:

2.1 Promote the sustainable production and consumption of plastics through product design.

2.2 Reduce plastic use through alternatives or innovative models.

2.3 BAT/BEP demonstration to ensure that plastic waste is managed in a safe and environmentally sound manner throughout different stages (including handling, collection, transportation, storage, marking, recycling, certification and final disposal).

Output:

2.1.1 Demonstration on green design, including avoiding hazardous additives in the lifecycle, maximizing recycled content, single material design of packaging and adopting other design measures to make the plastic production process more circular.

2.2.1 Assessment on application scenarios and promotion pathways for substitutes of problematic and avoidable plastic products, and plastic reduction technology options.

2.2.2 Demonstration on green packaging and green logistics models in logistics, e-commerce, express delivery sectors, including reduce the amount of plastics and other materials in use by extending product lifespan, promote measures such as reuse and recycle.

2.2.3 Plastic reduction demonstrations in university campuses, large shopping centers or supermarkets, including trialing green procurement measures, and circular business modalities.

2.3.1 Demonstration of collection models for low-value recyclable plastics[1][1] in coastal and riverine cities. Including awareness-raising and training for informal recyclers.

2.3.2 BAT/BEP demonstration on intelligent and efficient segregation of plastic waste and high value utilization of low value recyclable plastics.

2.3.3 Demonstration on microplastic reduction, such as microplastic abatement and disposal in sewage treatment plants and washing industry.

2.3.4 Demonstration of digital tracking and certification scheme for recyclable plastics in coastal area.

[1] Low-value recyclable plastics in this context usually refer to plastic packaging boxes, plastic lunch boxes, plastic bags, Styrofoam, plastic toys and plastic insulation materials, etc.

3. Financial model for green recycling of plastics.

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
3,000,000.00	27,000,000.00

Outcome:

3.1 Study on Innovative Financing Mechanisms and Business Models for Plastic Pollution Management.

3.2 Establishment of green finance platforms and partnerships.

Output:

3.1.1 Incentives for the transition to a plastic circular economy assessed, including analysis of existing gender inequalities in women's access to and knowledge of financial mechanisms and business models.

3.1.2 Research on innovative financing and business models to support green production, consumption and recycling of plastic products.

3.1.3 Development of programme to promote the application of key financial mechanisms and business models in China (e.g. Public-Private-Partnership (PPP)/Extended Producer Responsibility (EPR) /Deposit refund system (DRS)/Eco-environment-oriented Development (EOD)).

3.2.1 Establishment of a database on green financial services for plastic pollution control and promote circularity in plastics industry.

3.2.2 Establish a platform for cooperation between enterprises and financial institutions to tackle plastic pollution, including an innovative fund to leverage resources and investment in green design, alternative solutions, and sustainable consumption model.

3.2.3 Carry out activities based on the platform to promote dialogues, cooperations and joint actions among governments, the private sectors, financial institutions, and other stakeholders.

M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
1,000,000.00	9,000,000.00

Outcome:

4.1 Project Monitoring and Evaluation.

4.2 Knowledge sharing and information dissemination for relevant stakeholders.

Output:

4.1.1 Periodic monitoring implemented.

4.1.2 Midterm review and terminal evaluation conducted.

4.2.1 Knowledge products on best practices, experiences and lessons learned (including on gender mainstreaming and women's empowerment) are documented and shared both nationally and internationally to facilitate knowledge exchange in the international plastics industry.

4.2.2 Strengthen scientific case studies and establish knowledge hubs to disseminate lessons learned nationally, regionally and globally to facilitate international cooperation and information exchange.

4.2.3 Awareness-raising activities on life-cycle management of plastics products for various stakeholders including the general public, NGOs, women and youth.

Component Balances

Project Components	GEF Project Financing ($)	Co-financing ($)

1. Policy and regulatory framework strengthened along the life cycle of plastic.	3,000,000.00	27,000,000.00
2.Reduction of POPs and GHG emissions throughout the life cycle of plastic products by introducing technological innovations.	12,300,000.00	110,700,000.00
3. Financial model for green recycling of plastics.	3,000,000.00	27,000,000.00
M&E	1,000,000.00	9,000,000.00
Subtotal	**19,300,000.00**	**173,700,000.00**
Project Management Cost	965,000.00	8,685,000.00
Total Project Cost ($)	**20,265,000.00**	**182,385,000.00**

Please provide justification

PROJECT OUTLINE

A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

Global environmental issues

The cumulative global production of primary plastic between 1950 and 2017 was estimated at 9.2 billion metric tons (mt) and forecasted to reach 34 billion mt by 2050. Out of 7 billion mt of plastic waste generated globally so far, less than 10 per cent has been recycled (Geyer 2020[1][2]). The rate of plastics recycling in China is still relatively low, 31% in 2021 for instance, even though waste management capacities of municipalities continue to improve.

Around a quarter of the over 10,000 unique chemicals used in plastics are of potential concern to human health and safety (H. Wiesinger,2021[2][3]). These chemicals are either added deliberately during the production process (including additives such as fillers, flame retardants, plasticizers, antioxidants, antimicrobial agents, ultraviolet stabilizers, pigments and catalysts trapped in plastic resins), or unintentionally added by-products, breakdown products or contaminants. In an analysis of common plastic products, around 20 additives per product were found on average (L. van Oers ,2011[3][4]). Many chemical additives are of concern (including POPs) with no transparency to downstream users/recyclers. These POPs include hexabromocyclododecane (HBCD),

polybrominated diphenyl ethers (PBDEs, including Penta-BDE, Octa-BDE and Deca-BDE), short chain chlorinated paraffins (SCCPs), perfluorooctanoic acid (PFOA), and perfluoro octane sulfonic acid (PFOS) and its salts, perfluoro octane sulfonyl fluoride (PFOSF).

Plastics containing POPs additives have adverse effects on human health and environment through direct leakage of additives during all life cycle stages and release of UPOPs by the lack of waste management capacity. Plastics may also act as a sink and transportation media for chemicals and POPs, which accumulate on the surface of plastics while in seawater. Plastic waste and products that contain POPs additives contribute to global POPs pollution, through direct leakage of additives during manufacture, use and disposal life cycle stages (Fig. 1). In the absence of interventions, the current situation will deteriorate, exacerbating global environmental problems.

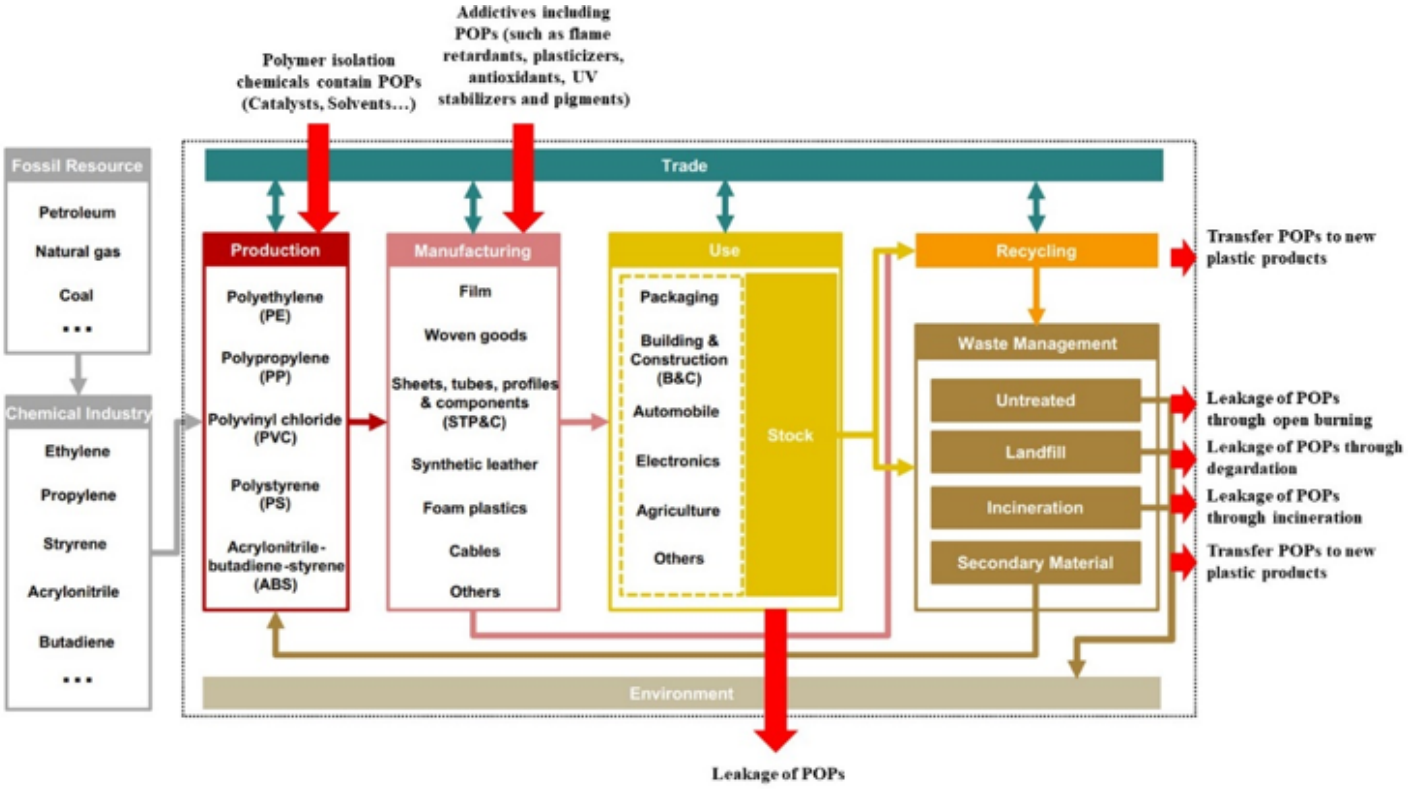

Fig.1 Leakage of POPs in plastic lifecycle[4][5]

The current production and use of plastics is far from circular. The large-scale production of plastics has also exacerbated global warming and hindered sustainable development. It is acknowledged that the plastic industry consumes substantial amount of energy, potentially resulting in high level of GHG emitted. Most plastics in use today are virgin plastics, made from crude oil or gas. Due to the fossil-based feedstock and the high energy consumption during refining, most GHG emissions from plastics can be attributed to the production stage. GHG emissions from the plastics lifecycle in 2019 are estimated to be 1.8 billion mt, or 3.4% of global emissions, with 90% of these emissions from the production and conversion of plastics from fossil fuel feedstock.

Baseline status

There are about 400 million tonnes of plastics produced annually in the global, of which 36% is used for packaging[5][6]. China is one of the world's largest producer and consumer of plastics, with plastics production accounting for nearly one-third of total global production. Since the end of the 20th century, rapid industrial development has led to growing production and demand for plastics in China[6][7]. At the same time, China has reportedly accepted nearly half of the world's nonindustrial plastic waste imports –approximately 106 MT of plastic waste – over the past 25 years[7][8]. However, the flood of imported plastic waste has seriously damaged the environment.

The Chinese government attaches great importance to addressing plastic pollution and has issued several regulations over the years. In 2007, the China State Council issued the "Notice on Restricting the Production and Sale of Plastic Shopping Bags" [8][9], which stipulated that plastic shopping bags shall not be provided for free in supermarkets. In 2018, the Express Package Supplies Standards were issued to reduce plastic use in express packaging[9][10]. To address the pollution from imported plastics waste, "the Implementation Plan on Banning the Entry of Foreign Waste and Promoting the Reform of the Solid Waste Import Management System" was issued by the General Office of the State Council in July 2017,[10][11]which permanently banned the import of non-industrial plastic waste from January 2018 onwards. The ensuing "Opinions on Further Strengthening the Control of Plastic Pollution" (Abbreviated as OFSCPP)[11][12] was jointly promulgated by National Development and Reform Commission and the Ministry of Ecology and Environment jointly on January 16, 2020. This Rule built upon previous plastic control policies through presenting a timeline for the control of disposable plastic products in China and establishing a management system for the life cycle of plastic products. The policy including 6 chapters and 17 items (Fig. 2) covers a variety of plastics items involved and clear timeline of prohibition. It is recognized as "the most stringent plastic restriction order" by China. This policy took effect on January 1, 2021.

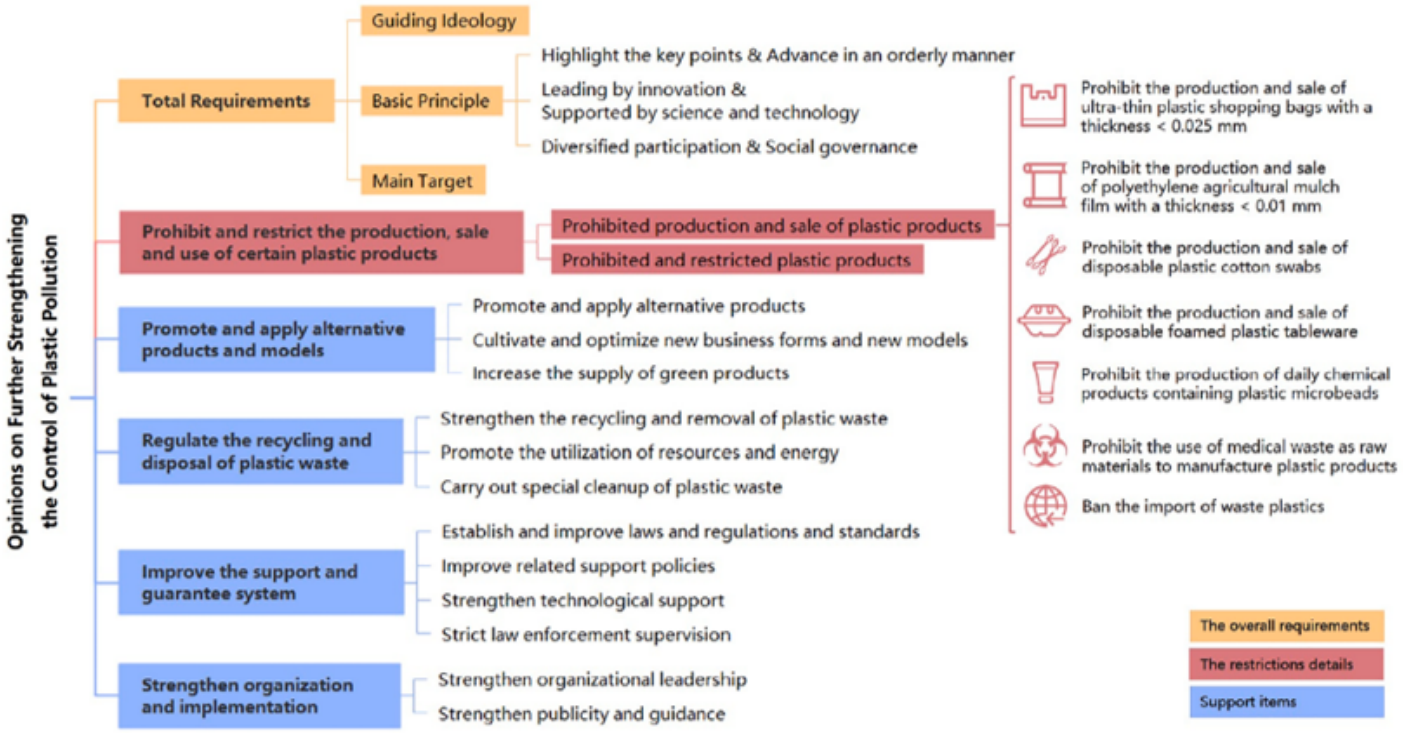

Fig. 2 The abstract of OFSCPP

Barriers and Causes

Despite the continuous efforts the country has made over the last decade, there are still gaps in terms of transforming the plastics industry towards life cycle management of plastics. These gaps include: (1) Full life cycle management framework (policy, legislation, standards, etc.) for plastics has not been established, and the conceptual and institutional framework have yet to be improved and optimized. (2) Deficiencies exist in innovative technologies and models for plastics reduction, substitution and recycling; plastic recycling, especially the recycling system of low-value recyclable plastics has yet to be optimized, tracking and certification system for recyclable plastics needs to be established, and the path of high-value utilization has yet to be explored. (3) Lack of long-term and stable financial support for the life cycle management and pollution control of plastic. (4) The ability to regulate the full life cycle of plastics and the public's awareness and participation in plastics pollution management have yet to be improved.

Therefore, it is of great significance to further improve China's full life cycle management framework for plastics with GEF support. The project aims to eliminate the production and use of problematic and avoidable plastics, reduce the use of toxic and hazardous chemicals additives, improve the plastic waste recycling system, promote the high-value utilization of plastic waste, establish and enhance traceability of recyclable plastics, and facilitate the transformation of China's plastics industry from a linear to a circular economy by strengthening the life cycle management.

Key elements of the system

The proposed project aims to reduce plastic waste and chemical pollution throughout the life cycle based cross-cutting approach in line with circular economy, green chemistry, and waste hierarchy principles (Reduce, Reuse, Recycle, Recovery, Disposal) for sustainable production and consumption.

The system transition toward circularity is designed with four components. All project Components and Outcomes incorporate all aspects for the life cycle management of plastics.

(1) Policy, regulation, and institutional framework enhancement.

- Development and assessment the criteria for the identification of chemicals and polymers of concern, such as plasticizers, flame retardants, antioxidants or PVC.

- Eliminate avoidable and problematic plastics and chemicals, expand safe circularity via reuse, durability and recycling.

- Ensure the controlled disposal of waste that cannot be prevented or safely recycled, enhance the sound management, traceability and certification of plastic waste, and reduce microplastics releases into the environment.

(2) Full life-cycle demonstration of business model and technological innovations.

- In the production process, promote key enterprises in the plastics industry to adopt and strengthen the sustainable design, reduce the use of plastics, improve recyclability and avoid the addition of toxic and hazardous chemicals;

- In the consumption process, promote technology and management innovation in logistics and superstores to reduce and reuse of plastics; and in the reuse, recycling and disposal process, improve the segregation, collection and recycling system for low-value recyclable plastic waste, establish tracking and certification scheme for recyclable plastics, to promote intelligent and high-value utilization.

(3) Financing platform.

- Promote the application of key financial mechanisms and business models in China (e.g. PPP/EPR/DRS/EOD).

- Establish a platform for cooperation between enterprises and financial institutions to tackle plastic pollution, including an innovative fund to leverage resources and investment in green design, alternative solutions and sustainable consumption model.

- Promote dialogues, cooperation and joint actions among governments, the private sectors, financial institutions and other stakeholders based on the platform.

(4) Capacity building.

- Improve the management and monitoring capacity across China's plastics industry, as well as the stakeholders' awareness and participation in the whole life cycle management of the plastics through training, capacity building and international exchanges;

- Sharing the outcomes and experience of the project through South-South cooperation, contributing to the global plastics pollution governance.

Relevant stakeholders, private sector and local actors and their roles in the system

Private sector engagement in project activities is considered from multiple angles. The project will take a life cycle approach based on the waste hierarchy theory (Reduce, Reuse, Recycle, Recovery, Disposal) to comprehensively tackle plastic pollution, and endeavor to involve all the private sectors which are relevant in this industry, from phasing out problematic chemicals, polymers and products, promoting green design, improving green value chain, prompting efficient reuse and recycle pathway, to the establishment of environmental sound and traceable waste management system.

The project will develop, roll out, and scale up financial and business models for enterprises. The project will work with financial institutions to provide capacity building and strengthen the private sector's access to green finance.

The project will fully mobilize stakeholders and involve them in the design of specific project activities, as well as in the whole process of project implementation. The project will collaborate with NGOs such as Ellen MacArthur Foundation (EMF), World Wide Fund for Nature (WWF) etc., and incorporate with the existing global plastic initiatives or programme to promote the exchange on best practices and lessons learned in sustainable plastic management.

Through the above activities, public-private, cross-sectoral and inter-agency collaboration will be established to mainstream plastic reduction practices and ensure policy coherence across different government agencies and business sectors.

FECO/MEE will take over the coordination responsibilities under the project. The project will involve a wide range of private and public stakeholders across China. Project steering committee and the corresponding coordination mechanism will be established and operationalized by FECO during project implementation period for stakeholder involvement. The Steering Committee set up under the project will act as a mechanism for regular monitoring and coordination of project activities.

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[1] Geyer, R. (2020). Production, use and fate of synthetic polymers in plastic waste and recycling. In Plastic Waste and Recycling: Environmental Impact, Societal Issues, Prevention, and Solutions. Letcher, T.M. (ed.). Cambridge, MA: Academic Press.13-32. https://www.sciencedirect.com/science/article/pii/B9780128178805000025?via%3Dihub.

[2] H. Wiesinger, Z. Wang and S. Hellweg, "Deep Dive into Plastic Monomers, Additives, and Processing Aids", Environmental Science and Technology, vol. 55, no. 13 (July 2021), pp. 9339–9351.

[3] L. van Oers, E. van der Voet and V. Grundmann, "Additives in the plastics industry". In B. Bilitewski, R. Darbra and D. Barceló (eds.), Global Risk-Based Management of Chemical Additives I. Production, Usage and Environmental Occurrence (Berlin, Heidelberg, Springer, 2011), pp. 133–149.

[4] Xiaobin Jiang, Tao Wang, Meng Jiang, et al. Assessment of Plastic Stocks and Flows in China: 1978-2017. Resources, Conservation & Recycling. 2020, 104969.

[5] UNEP.2021. From pollution to solution. A global assessment of marine litter and plastic pollution.

[6] Peir´o, et al., 2013. Material flow analysis of scarce metals: sources, functions, end-uses and aspects for future supply. Environ. Sci. Technol. 47, 2939–2947. https://doi.org/10.1021/es301519c.

[7] Brooks, A.L., Wang, S., Jambeck, J.R., 2018. The Chinese import ban and its impact on global plastic waste trade. Sci. Adv. 4 (6), eaat0131.

[8] The State Council of the PRC, 2007. Notice on Restricting the Production and Sale of Plastic Shopping Bags. http://www.gov.cn/zwgk/2008-01/08/content_852879.htm .

[9] General Administration of Quality Supervision, Inspection and Quarantine and National Standards Committee, 2018. Express Package Supplies Standards.

[10] Chinese General Administration of Customs, 2017. Chinese General Administration of

Customs Launches a Campaign “Natiaonal Sword” to Combat Smuggled Waste. URL: http://www.customs.gov.cn/customs/302249/302425/636280/index.html ,Accessed 13 Jul. 2019.

[11] National Development and Reform Commission (NDRC), Ministry of Ecology and Environment (MEE). Opinions on Further Strengthening the Treatment of Plastic Pollution. FGHZ [2020] No. 80. https://www.mee.gov.cn/xxgk2018/xxgk/xxgk10/202001/t20200120_760495.html

B. PROJECT DESCRIPTION

Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF’s policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

Theory of Change

The following project´s theory of change has been developed which takes into account and include previously identified barriers and challenges to deliver proper interventions and effective actions to address them, for the achievement of the project´s objective:

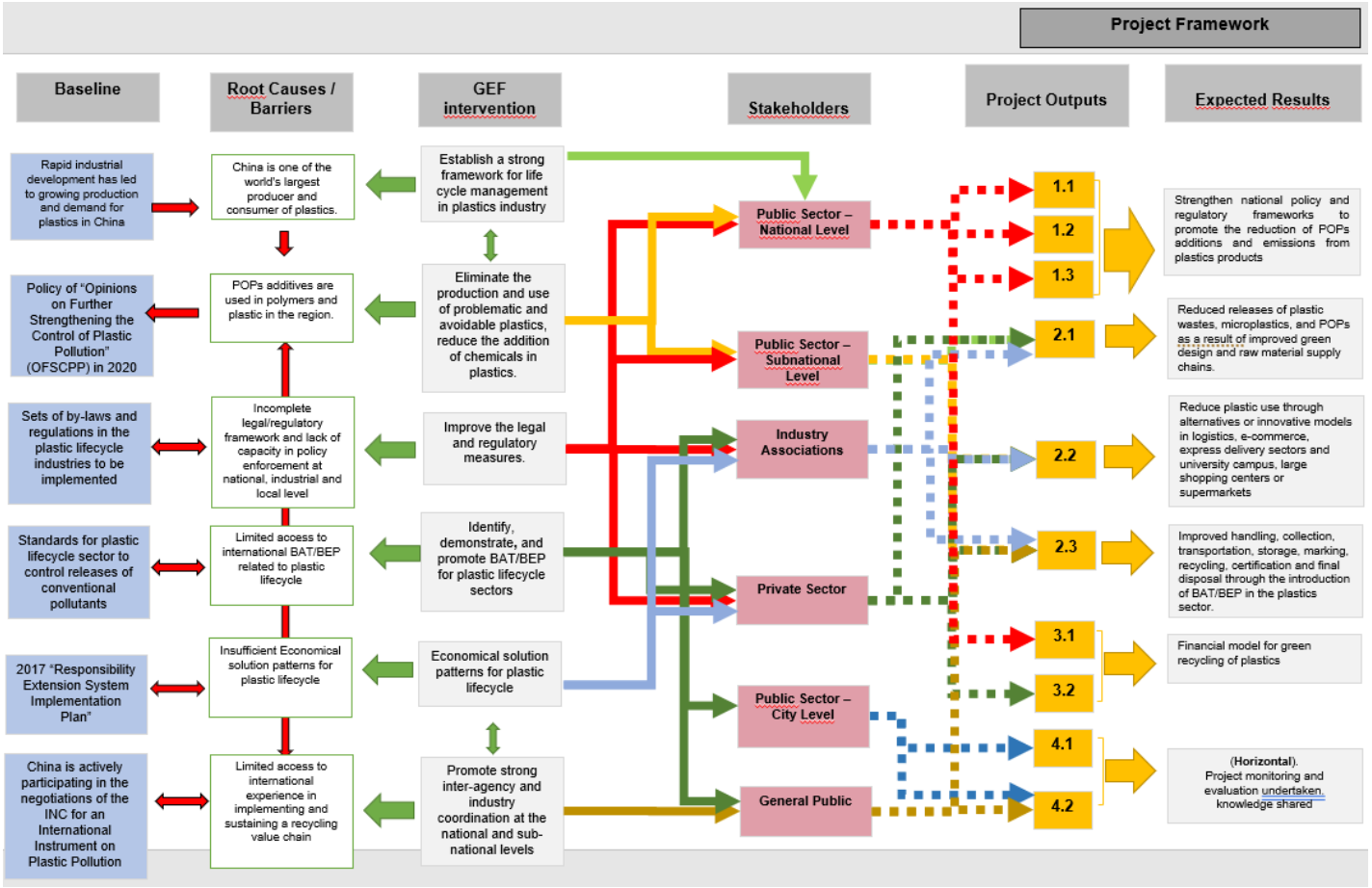

Fig.3 Theory of change

Project components and expected results

Society-wide circular economy can only be achieved when value chain actions are incorporated upstream, midstream and downstream and cross-sectoral efforts are considered. To this point, institutional development and regulation framework enhancement to align with the national policies and regulations provides long-lasting guidance for the transformation of the plastics sector to circular economy, demonstration activities along the full life-cycle of plastics will apply not only the best available technologies but also sound business and financial models to find the most feasible market-based approach in China, while financial platform and capacity building plan will further leverage resources to fill in the existing gaps. Both national and local authorities, producers and consumers, public and private sectors will be involved to ensure an integrated and transformative solution to the country's plastic industry.

Based on the previous analysis, the project is proposed to be structured through four main Components as described below:

Component 1 Policy and regulatory framework strengthened along the life cycle of plastic.

Reducing the environmental impacts of plastics requires a comprehensive set of complementary policy instruments, aiming at constraining demand, designing for circularity, enhancing reuse and recycling, closing leakage pathways, and doing cleaning up.

(a) Constrain demand: reduce the excessive number of plastics and other materials in use by promoting longer product lifespans, reuse, a demand shift to services and other upstream measures.

(b) Design for circularity: make the plastic production process more circular by avoiding hazardous materials in the lifecycle, maximizing recycled content and adopting other design measures. The selection of chemicals at the design stage determines health and environmental impacts along the entire lifecycle of a product. For example, Ortho phthalates or phthalates are a large group of chemicals that can, among other things, be used as a plasticizer for PVC to make the rigid material flexible.

(c) Enhance recycling: close material loops by sorting and recycling plastic waste.

(d) Close leakage pathways and cleanup: decrease losses into the environment through, among others, effective waste plastic collection and disposal (e.g. disposal in sanitary landfills) and effective waste water treatment plants (WWTP).

Outcome 1.1 Policy and regulatory framework strengthened on the plastic polymer and chemicals in plastic products.

Through this output the project will conduct gender-sensitive studies on the Criteria for the identification of chemicals and polymers of concern, such as plasticizers, flame retardants, antioxidants or PVC. Social and economic impact assessment of prohibitions and restrictions on chemicals and polymers of concern. Identify on synergies among MEAs on chemicals and international instruments relevant to addressing plastic pollution. The activity will also promote the development and assessment on the List of chemicals and polymers subject to prohibition or restrictions and applicable control measures, such as PVC restriction in single-use packaging for the food industry taking into consideration specific gender-related aspects.

Outcome 1.2 Policy and regulatory framework strengthened on the plastic products.

Through this output the project will support the research and improvement the List of problematic and avoidable plastic products, including short-life and single-use plastic products and intentionally added microplastics, and

establish the criteria for the identification of plastic products taking into consideration specific gender-related aspects.

The activity will also promote the regulatory policies development on design and performance criteria for plastics and plastic products, while recommending targets for reduction, reuse, refill and repair of plastics and plastic products, such as standards and regulations related to green packaging and green logistics in the fields of e-commerce, express delivery, and food delivery taking into consideration specific gender-related aspects. Also recommending quality control standards for post-consumer recycled plastics taking into consideration specific gender-related aspects.

Outcome 1.3 Policy and regulatory framework strengthened on sound management of plastic wastes.

Through this output the project will support the formulation and improvement of standards related to safe and environmentally sound collection, reuse, recycling and disposal, such as technical standards or specifications related to traceability and certification, environmental protection standards for the resource utilization of plastic waste, etc.

The development of international instruments on plastic pollution has led to widespread concern in the global community about plastic pollution control. The project will promote sustainable production and consumption in China's plastic industry by strengthening the life cycle management.

Outcome 1.4 Capacity building for national managerial capacity, enforcement, supervision of plastic and plastic products.

Through this output the project will support the national managerial capacity, enforcement, supervision policies of plastic and plastic products strengthened with a focus on ensuring that women and gender experts are engaged. The activity will also focus on promoting the capacity building for monitoring methods of plastic polymer, products, and waste (including microplastic), along with providing trainings to relevant stakeholders, such as government authorities, enterprises, and researchers with a focus on ensuring that women and gender experts are engaged. The goal is to improve their management and research capacity in this area.

Component 2: Reduction of POPs and GHG emissions throughout the life cycle of plastic products by introducing technological innovations.

Technology demonstration and technology diffusion activities under the project will attract significant private sector funding, while the Carbon Peaking and Carbon Neutrality Strategy and Zero-Waste Cities Strategy will drive local public sector funding. GEF grant funding will also attract significant co-financing from other stakeholders in the public and private sectors.

Outcome 2.1 Promote the sustainable production and consumption of plastics through product design.

Through this output the project will support the demonstration on green design, including avoiding hazardous additives in the lifecycle, maximizing recycled content, single material design of packaging and adopting other design measures to make the plastic production process more circular. Many factors including the following have been considered when selecting demonstration provinces: location in coastal and riverine area, strong commitment to carry out demonstration activities, capacity, and financing. During PPG stage, interested provinces will be requested to submit letters of interest to apply, a list of detailed criteria will be developed and used to screen and select project sites. For the selection of enterprises, consultations will be held with key stakeholders, including plastic product producers, logistics and e-commerce enterprises, large shopping malls and supermarkets, low value plastic sorting and high-value utilization enterprises, and the provincial and local level Environmental Protection Bureaus/Departments. The enterprises selected shall: 1) have the capacity to conduct pilot and can provide co-financing; 2) strong commitment to carry out demonstration activities; 3) meet

industry standards and national environmental management requirements, 4) committed to adopt and operationalize pilot technologies in a stable, continuous manner for more than five years after project completion.

The project will refine the selection criteria at the PPG stage and launch a public tender exercise to solicit expressions of interest on demonstration enterprises. Environmental and Social Impact Assessments and relevant due diligences will be conducted as soon as project sites are finalized, latest by the end of first year of implementation.

The generation of plastic waste is strongly related to how plastics are used. Reducing plastics can be done by optimizing product design and reusing can be done by shifting from single use to more durable plastic products, which can lower the energy use per consumption cycle.

Outcome 2.2 Reduce plastic use through alternatives or innovative models.

Through this output the project will support the assessment on application scenarios and promotion pathways for substitutes of problematic and avoidable plastic products, and plastic reduction technology options.

The activity will also promote the demonstration of green packaging and green logistics models in logistics, e-commerce, and express delivery sectors, including reduce the amount of plastics and other materials in use by extending longer product lifespan, promote measures such as reuse, and recycle. And the activity will also promote the plastic reduction demonstrations in university campus, large shopping centers or supermarkets, including trialing green procurement measures and circular business modalities.

Almost two-thirds of plastic waste comes from relatively short-lived products such as packaging and consumer products. Packaging has an extremely short average lifespan while plastic applications in the construction sector may be in use for several decades. Therefore, packaging waste constitutes a large share (42%) of total plastic waste generated. The predominance of PP, PET, LDPE and HDPE are often used for packaging applications with short lifetimes, which will become wasted rapidly after its initial use. By contrast, PVC is mainly used for applications with long lifecycles.

Outcome 2.3 BAT/BEP demonstration to ensure that plastic waste is managed in a safe and environmentally sound manner throughout different stages (including handling, collection, transportation, storage, marking, recycling, certification and final disposal).

Through this output the project will support the demonstration of collection models for low-value recyclable plastics in coastal and riverine cities. Including awareness-raising and training for informal recyclers. Low-value recyclable plastics in this context usually refer to plastic packaging boxes, plastic lunch boxes, plastic bags, Styrofoam, plastic toys and plastic insulation materials, etc.

The activity is to showcase and promote the BAT/BEP demonstration on intelligent and efficient segregation of plastic waste and high value utilization of low value recyclable plastics. And the activity will also promote the demonstration on microplastic reduction, such as microplastic abatement and disposal in sewage treatment plants and washing industry. The activity will also promote the demonstration of digital tracking and certification scheme for recyclable plastics in coastal areas.

Recycling also has an important role to play in lowering plastics' environmental footprint alongside strategies to reduce plastic waste through reduced consumption and reuse systems. The separate collection of plastics for recycling helps to keep plastic waste out of landfills (where plastics can emit harmful compounds and leachates), and incineration, during which plastics generate flue gases and other harmful emission. The availability of secondary (recycled) plastics can also help lower demand for primary (virgin) plastics. Globally, almost 40% of plastics collected for recycling, or close to 22 Mt, are lost during recycling and end up being incinerated,

landfilled or mismanaged. In informal waste systems, waste pickers selectively target high-value plastics (such as PET) at the point of collection, reducing the mass lost when they are cleaned and sorted to get the maximum price. Therefore, low-value plastics recycling can divert more plastic waste from harmful waste management practices. Moreover, if not sorted properly and kept apart from other waste streams such as organic waste, collected plastic waste is of little value for secondary material production.

Component 3: Financial model for green recycling of plastics.

Outcome 3.1 Study on Innovative Financing Mechanisms and Business Models for Plastic Pollution Management

Through this output the project will support the incentives for the transition to a plastic circular economy assessed including analysis of existing gender inequalities in women's access to and knowledge of financial mechanisms and business models.

The activity will also promote the research on innovative financing and business models to support green production, consumption, reuse, and recycling of plastic products. And the activity will also promote the development of programmes to promote the application of key financial mechanisms and business models in China (e.g. PPP/EPR/DRS/EOD). For example, households can be encouraged to sort plastic waste at source through deposit-refund (such as deposit-refund systems for beverage bottles). Recycling can be encouraged through financial incentives such as plastics taxes, recycled content targets and EPR.

Outcome 3.2 Establishment of green finance platforms and partnerships.

Through this output the project will support the establishment of a database on green financial services for plastic pollution control and promote circularity in plastics industry.

The activity will facilitate the establishment of a platform for cooperation between enterprises and financial institutions to tackle plastic pollution, including an innovative fund to leverage resources and investment in green design, alternative solutions and sustainable consumption model.

Furthermore, the undertaking will foster endeavors grounded on the platform to promote dialogues, cooperations and joint actions among governments, the private sectors, financial institutions and other stakeholders.

Component 4: Project Monitoring, Evaluation and Knowledge Management.

Outcome 4.1 Project Monitoring and Evaluation.

Through this output the project will support the periodic monitoring implemented. The activity will also promote the Midterm review and terminal evaluation conducted.

Outcome 4.2 Knowledge sharing and information dissemination for relevant stakeholders.

Through this output the project will support the knowledge products on best practices, experiences and lessons learned are documented and shared both nationally and internationally to facilitate knowledge exchange in the international plastics industry. Good practices and lessons learned on gender mainstreaming/women's empowerment will also be documented.

The activity will also promote scientific case studies and establish knowledge hubs to disseminate lessons learned nationally, regionally and globally to facilitate international cooperation and information exchange. The knowledge management system of this project will include training sessions for practitioners participating in the project activities to determine the knowledge management activities, in particular, the potential synergies in

the methodologies and content to be adopted. The project will provide special training for those responsible for the plastic industry. One of the outputs of the project is the establishment of an operational information exchange network to disseminate knowledge on chemicals reduction in plastic relating industry within the relevant departments in China. The results of the project activities could be shared with other developing countries.

Furthermore, the activity will also promote the awareness-raising activities on life-cycle management of plastics products for various stakeholders including the general public, NGOs, women and youth.

Incremental/Additional Cost Reasoning

The project baseline described many obstacles and challenges to reduce the life cycle impact from the plastic sector in China. The project, with GEF financing, will introduce international experience through improved legal and regulatory measures, BAT/BEP demonstration, financing mechanisms and business models, strengthened capacity for effective management, in order to eliminate the production and use of problematic and avoidable plastics, reduce and prevent toxic and hazardous chemicals release, improve the plastic reuse and recycling system, and promote the utilization of low-value plastic waste, thus facilitating the transformation of plastics industry towards circularity and zero waste in China.

Without GEF support, it is expected that China will continue its efforts to improve plastic waste disposal, but without paying much attention to the green design, financial models and low-value plastic waste. At this point in time, when a significant growth of the sector is expected to occur, it is more than ever important to ensure that the sector starts operating in accordance with environmental laws and standards.

In a business-as-usual (BAU) scenario, most plastic waste will be disposed by incineration. However, large low-value plastic waste cannot be separated to recycle and financially in China's plastic sector. Without GEF support it is unlikely that BAT/BEP technologies and financial models will be introduced.

Furthermore, it is expected that very limited efforts will be undertaken to access the criteria for the identification of chemicals and polymers of concern from the sector, which would lead to inadequate enforcement of newly developed chemicals policies and standards for plastic sector. Simply stated, it is foreseeable that chemicals and polymers issues would be simply ignored under a BAU scenario.

Scale of impact and sustainability.

The project will actively organize and participate in regional and global forums, connect with other Global Plastics Platform participating countries to learn and share relevant lessons and facilitate multi-stakeholder dialogue on building a circular plastic industry. The best practice model will also be replicated in different regions and the whole country. Several aspects contribute to sustaining the project's results beyond the project's duration:

- Creating an enabling environment for a circular economy in plastic life cycle management through improved national legislative and regulatory frameworks. By adjusting and introducing upstream policy to eliminate problematic and avoidable plastics and promote green and sustainable design of plastic products in China, the project will induce sustainable and long-term impact after accomplishment.

- Strong emphasis on financial and business model innovation in support of the sustainability of project outcomes. The project will maximize the function of GEF as seed fund, establish a financing platform for plastic pollution control, to promote green design, alternative solutions and sustainable consumption patterns in China's plastics industry.

- Involving key private sector partners along plastic life cycle that have a financial interest in sustainable investment in China to transform plastic economy from linear to circular, the experience and practices of the successful sustainable business models will be replicated in more enterprises and at larger scale.

- Developing guidance and providing training on plastic design, additives analysis and monitoring, waste management that can be regularly replicated to a wide range of stakeholders. The training will be designed and implemented with the support of FECO and UNDP. All guidance and training materials will continue to be accessible on the green finance for plastic platform website beyond the project's duration.

- Implementing targeted awareness raising of all those involved in and/or impacted by plastic waste management.

Project sustainability is further strengthened by the inclusive participation of a comprehensive list of stakeholders from design to implementation. The Plastic Processing Industry Association and the National Resources Recycling Association are two key players. Private sector enterprises along the whole life cycle-plastic production, distribution, recycling to disposal enterprises will participate in project activities. Financial institutions will be involved in developing/piloting financial models and business models for green recycling of plastics, with the vision to establish green finance platforms and partnerships dedicated to plastics.

Coordination and Cooperation with Ongoing Initiatives and Project.

Does the GEF Agency expect to play an execution role on this project?

No

If so, please describe that role here. Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing

According to the introduction of Circular Solutions to Plastic Pollution Integrated Program (IP), packaging, particularly single-use related to the food and beverage sector, will be the priority for the Plastic IP since it is the main source of plastic waste in developing countries. The project will eliminate and phase out the production and use of problematic and unnecessary plastics, a large portion of which are packaging materials for the food and beverage industry, by strengthening the whole life-cycle management of plastics, and the results of the project will contribute to the achievement of the objectives of the GEF Plastics IP project. In addition, the project will promote the results of the project and China's experience in managing plastic pollution along the whole chain through South-South cooperation, contributing Chinese solutions to global plastic pollution management. The project will maintain close cooperation with other GEF projects implemented in China, as well as global and regional projects implemented by UNDP, so as to learn from the implementation experience of other projects on the one hand, and make use of the platforms and conditions created by the existing projects on the other hand, to promote the implementation of this project, in order to make this project more effective.

In August 2020, the China National Light Industry Council, the China Petroleum and Chemical Industry Federation, the China Plastics Processing Industry Association and the China Packaging Federation issued a Joint Initiative on Working Together for the Sustainable Development of Plastics. The Initiative proposes to take recycling, easy recovery, and degradation as the guide, increase scientific and technological innovation, and research and develop plastic materials and products that meet the performance standards, are green, environmentally friendly, and economically applicable. At the same time, it will accelerate the development of relevant standards, improve the standard system regarding the recycling of plastics, issue the Guide to Classification and Labelling Requirements for Degradable Plastics and a series of standards for recycled plastics, carry out the evaluation and identification of green design products in accordance with the green design evaluation standards for degradable plastics, and provide technical support for the establishment of an industrial system regulating the recycling and reuse of plastics.

In April 2022, China National Light Industry Council, China Consumers Association, China National Food Industry Association, China Association of Bakery & Confectionery Industry, China Alcoholic Drinks Association, China Paper Association, China Cleaning Industry Association and other 14 units jointly issued the initiative of 'Opposing excessive packaging of commodities and practicing the concept of simplicity and moderation' to the majority of operators and consumers. 'The initiative is mainly related to nine aspects. The initiative involves nine aspects, including consciously fulfilling legal obligations, exploring the establishment of packaging recycling mechanism, consciously resisting the use of commodity packaging as a gimmick to induce or mislead consumers to make purchases.The initiative is of great significance in reducing plastic pollution at source and promoting the plastic circular economy. During implementation, the project will maintain close communication and collaboration with relevant associations and stakeholders to promote the implementation of the initiatives and will continue to expand their scope of influence through publicity and promotional activities.

The relevant initiatives are of great significance in reducing plastic pollution at source and promoting a plastic circular economy. In the course of implementation, the project will maintain close communication and collaboration with relevant associations and stakeholders to promote the implementation of the initiatives, and will continue to expand their scope of influence through publicity and promotion activities.

The implementation modality is proposed to be National Implementation Modality.

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	9002700	0	0	0
Expected metric tons of CO_2e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)				
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	9,002,700			
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting	2027			
Duration of accounting	8			

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)

Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 9 Chemicals of global concern and their waste reduced

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
71,476.00	0.00	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
Hexabromocyclododecane (HBCDD)	35,738.00			
Short-chain chlorinated paraffins (SCCPs)	35,738.00			

Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.3 Hydrochloroflurocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.6 POPs/Mercury containing materials and products directly avoided

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.7 Highly Hazardous Pesticides eliminated

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.8 Avoided residual plastic waste

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
1,429,522.00			

Indicator 10 Persistent organic pollutants to air reduced

Grams of toxic equivalent gTEQ (Expected at PIF)	Grams of toxic equivalent gTEQ (Expected at CEO Endorsement)	Grams of toxic equivalent gTEQ (Achieved at MTR)	Grams of toxic equivalent gTEQ (Achieved at TE)
42.89			

Indicator 10.1 Number of countries with legislation and policy implemented to control emissions of POPs to air (Use this sub-indicator in addition to Core Indicator 10 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
18			

Indicator 10.2 Number of emission control technologies/practices implemented (Use this sub-indicator in addition to Core Indicator 10 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
25			

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Female	500,000			
Male	500,000			
Total	**1,000,000**	**0**	0	**0**

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

Project Core Indicator on GHG reduction has been revised and accounted for a total of eight years: three years of project implementation, plus five years post-completion. Other Core Indicators adopt a timeline of three years (of project implementation). This duration takes into account the time needed to initiate and operationalize project demonstrations.

Core Indicator 6: Greenhouse gas emission mitigated.

GHG avoidance will be achieved through different interventions resulting in an improvement of current plastic waste management and disposal practices, reduction of waste going to MSW incineration as well as increased recycling rates, for instance:1) green design of plastic products, demonstration of green plastic packaging and logistics; 2), demonstration of low-value plastic collection in coastal and riverine urban areas; and 3 demonstration of low-value plastic waste recycling. For the baseline calculations, GHG emissions from waste sector for demonstration cities were considered.

Indicator 6.2 - Emissions avoided outside AFOLU sector (direct)

The green design of plastic products (Activity 2.1.1), green plastic packaging and logistics demonstration (Activity 2.2.2 and Activity 2.2.3), demonstration for low-value plastic waste recycling (Activity 2.3.1), and BAT/BEP demonstration (Activity 2.3.2) will result in a reduction of plastic, which will result in direct GHG reduction. Using a timeline of eight years in total, direct GHG reduction is calculated to be 9,002,700 tCO2eq (accrued value).

According to the research data from Beijing University, the carbon emission intensity of the plastics production process for in China is 2.5 tCO2eq/t, which is in line with the carbon emission intensity in Europe. Meanwhile, the average carbon emission intensity of the plastic waste disposal process (including incineration, landfill, etc.) is 2.7 tCO2e/t. Carbon emissions from the use of plastic products have a much lower emission intensity than production and end-of-pipe treatment, which are not taken into account in this document. Therefore, this document adopts an average carbon emission of 5.2 tCO2e/t of plastic produced, consumed and disposed in China.

The green design of plastic products, green plastic packaging and logistics, plastic reduction in university campus, large shopping centers or supermarkets demonstration will result in a reduction of plastic. Based on the emission factor of 5.2 tCO2e/t on plastic production and disposal, the GHG reduction during project implementation and 5 years after implementation will be 6,302,700 t CO2e

800,000t and 200,000t plastic waste can be recycled through the demonstration of low-value plastic collection in coastal and riverine urban areas and the demonstration of low-value plastic waste recycling respectively. Based on an emission factor of 2.7 tCO2e/t of plastic waste disposal, an emission reduction of 2,700,000 t CO2e can be achieved in project implementation and 5 years after implementation.

As in all, during the project implementation (3 years) and 5 years after implementation, plastics waste avoidance will be 9,002,700 tCO2eq. (6,302,700+2,700,000).

All of the details on assumptions, emission factors, and sources are included in the excel sheet.

Core Indicator 9: Chemicals of global concern and their waste reduced.

POPs reduction will be achieved through different interventions (improving waste collection, recycling and disposal, phase out POPs containing products). POPs containing waste reduction will be 71,476 metric tons (for 3 years).

Indicator 9.1 - Persistent Organic Pollutants (POPs) removed or disposed (POPs type) (in metric tons)

Based on 5 % BFRs (2.5% SCCP and 2.5% HBCDD) in plastics, 35,738 t of SCCP and 35,738 t of HBCDD in plastics can be reduced. In total, this results in 71,476 metric tons of reduction in POPs containing waste.

Considering that the total plastic and waste reduction for the project is estimated at 829,522 ton for Activities 2.1.1, 2.2.2, 2.2.3, 2.3.1, and 2.3.2, plastics and waste reduction from PVC policy is estimated at 600,000 in total. The total amount of plastics and waste reduction is 1,429,522 tons. According to UNEP, BFRs contents in plastics range from 5-30%. A low factor of 5% is used here, out of which half is SCCP and half HBCDD. POPs removed or disposed is 5 percent of 1,429,522, equaling 71,476 tons, with 35,738 tons of SCCP and 35,738 tons of HBCDD reduced.

Indicator 9.8 - Avoided residual plastic waste

As detailed above, 1,429,522 tons plastic waste will be reduced through policy, technology demonstration and regional promotion during project implementation (3 years).

Core Indicator 10: Persistent organic pollutants to air reduced.

POPs reduction will be achieved by avoiding plastic waste being inadequately incinerated, as well the upgrading of current treatment and disposal facilities. For the baseline emissions calculations the Stockholm Toolkit (adopting an emission factor of 30g TEQ/t) was used considering treatment and disposal practices. POPs will be reduced by 42.89 g TEQ during project implementation (3 years).

• Indicator 10.1 – 24.89g TEQ will be achieved by voiding plastic waste being inadequately incinerated, which through policy implemented to control plastic waste and POPs emission from incineration.

• Indicator 10.2 - 18g TEQ reduction through policies restricting the use of PVC in food packaging.

Core Indicator 11: People benefiting from GEF-financed investments.

The number of direct beneficiaries from project activities is estimated at 500,000 female and 500,000 male. The types of beneficiaries include: informal waste workers in pilot provinces; people in participating pilot enterprises and living in its vicinity, participants in capacity training, as well as access to financing, business model innovation, and people who benefit from alternatives in logistics, supermarkets, campuses, and demonstration provinces.

Project Core Indicator on GHG reduction has been revised and accounted for a total of eight years: three years of project implementation, plus five years post-completion. Other Core Indicators adopt a timeline of three years (of project implementation). This duration takes into account the time needed to initiate and operationalize project demonstrations.

Core Indicator 6: Greenhouse gas emission mitigated.

GHG avoidance will be achieved through different interventions resulting in an improvement of current plastic waste management and disposal practices, reduction of waste going to MSW incineration as well as increased recycling rates, for instance:1) green design of plastic products, demonstration of green plastic packaging and logistics; 2), demonstration of low-value plastic collection in coastal and riverine urban areas; and 3 demonstration of low-value plastic waste recycling. For the baseline calculations, GHG emissions from waste sector for demonstration cities were considered.

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The green design of plastic products (Activity 2.1.1), green plastic packaging and logistics demonstration (Activity 2.2.2 and Activity 2.2.3), demonstration for low-value plastic waste recycling (Activity 2.3.1), and BAT/BEP demonstration (Activity 2.3.2) will result in a reduction of plastic, which will result in direct GHG reduction. Using a timeline of eight years in total, direct GHG reduction is calculated to be 9,002,700 tCO2eq (accrued value).

According to the research data from Beijing University, the carbon emission intensity of the plastics production process for in China is 2.5 tCO2eq/t, which is in line with the carbon emission intensity in Europe. Meanwhile, the average carbon emission intensity of the plastic waste disposal process (including incineration, landfill, etc.) is 2.7 tCO2e/t. Carbon emissions from the use of plastic products have a much lower emission intensity than production and end-of-pipe treatment, which are not taken into account in this document. Therefore, this document adopts an average carbon emission of 5.2 tCO2e/t of plastic produced, consumed and disposed in China.

The green design of plastic products, green plastic packaging and logistics, plastic reduction in university campus, large shopping centers or supermarkets demonstration will result in a reduction of plastic. Based on the emission factor of 5.2 tCO2e/t on plastic production and disposal, the GHG reduction during project implementation and 5 years after implementation will be 6,302,700 t CO2e

800,000t and 200,000t plastic waste can be recycled through the demonstration of low-value plastic collection in coastal and riverine urban areas and the demonstration of low-value plastic waste recycling respectively. Based on an emission factor of 2.7 tCO2e/t of plastic waste disposal, an emission reduction of 2,700,000 t CO2e can be achieved in project implementation and 5 years after implementation.

As in all, during the project implementation (3 years) and 5 years after implementation, plastics waste avoidance will be 9,002,700 tCO2eq. (6,302,700+2,700,000).

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Indicator 9.8 - Avoided residual plastic waste

As detailed above, 1,429,522 tons plastic waste will be reduced through policy, technology demonstration and regional promotion during project implementation (3 years).

Core Indicator 10: Persistent organic pollutants to air reduced.

POPs reduction will be achieved by avoiding plastic waste being inadequately incinerated, as well the upgrading of current treatment and disposal facilities. For the baseline emissions calculations the Stockholm Toolkit (adopting an emission factor of 30g TEQ/t) was used considering treatment and disposal practices. POPs will be reduced by 42.89 g TEQ during project implementation (3 years).

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Core Indicator 11: People benefiting from GEF-financed investments.

The number of direct beneficiaries from project activities is estimated at 500,000 female and 500,000 male. The types of beneficiaries include: informal waste workers in pilot provinces; people in participating pilot enterprises and living in its vicinity, participants in capacity training, as well as access to financing, business model innovation, and people who benefit from alternatives in logistics, supermarkets, campuses, and demonstration provinces.

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	The initial social and environmental screening has revealed that there is potential for climate change risks due to the flooding or structural damage posed to storage facilities. Rising sea levels and risks related to coastal flooding, storm surges, and coastal erosion threaten China's densely populated low-elevation coastal cities. Facilities may therefore be vulnerable to weather events and flash floods, which need to be taken into consideration when determining areas where they will be sited. While the climate change risk has been rated as moderate, the project

		will conduct a climate risk/vulnerability assessment during the PPG phase, applying, as a minimum, the STAP Guidance on Climate Risk Assessment.
Environmental and Social	Moderate	The initial social and environmental screening has revealed that there is potential for economic displacement through loss of income for informal workers, pollution, insufficient labour standards, community health and safety, and/or negative impacts on poor or marginalized groups due to the project's activities. To mitigate these potential risks, the project will include activities that aim to assess the potential social and environmental impacts of the new policies, plans, laws, regulations, and guidance supported by the project or build in safeguards as part of the demonstration projects. For example, an environmental and social risk assessment of major plastic substitutes and alternative technology options will be prepared. The project will also invest early to ensure proper stakeholder engagement, including early stakeholder analysis and engagement in design stage and prepare a Stakeholder Engagement Plan to support the project's implementation.
Political and Governance	Moderate	Change of Government, City councils might result in new management and technical appointees within entities that are project partners, requiring additional efforts to ensure buy-in for project support and timely implementation. In the situation that this would happen, technical personnel from related UNDP CO and the UNDP RTA will do their utmost to inform and convince new decision-makers on the importance of the project, the reasons why it was developed and the positive impact it will have on human health and the environment in selected cities.
INNOVATION		
Institutional and Policy	Low	Policies, regulations and programs may not be adequately adopted and implemented, this can be done by engaging decision makers early on in the project preparation phase and building their understanding of the initiative. By keeping them involved throughout the design and implementation process, they can provide valuable insights and support that can help ensure successful adoption and implementation. Additionally, it is important to provide capacity building programs that are tailored to the specific needs of policymakers and institutions. This will help to equip them with the skills and knowledge they need to navigate any challenges that may arise during implementation.
Technological	Low	UNDP has a wide experience in chemicals and waste management: through funding from the GEF, MLF and bilateral sources, UNDP supports actions on sustainable production and consumption that eliminate hazardous chemicals and waste in products' design, production process in sectors of agriculture, healthcare, mining, energy, secondary metals, plastics, electronics, textiles, construction, as well as waste recycling and disposal. As of 2023, UNDP had active chemicals and waste projects funded by GEF supporting the elimination of hazardous

		chemicals in multiple sectors such as healthcare, energy, secondary metals, electronics, plastics, agriculture, and promoting green production and consumption, waste recycling, green chemistry approach, green procurement, and green financial mechanisms. In addition, the design of the project foresees the involvement of key stakeholders (at municipal, national and international level) within the scope of the activities to ensure accurate design of interventions and effective results. Therefore, risks related to the technical design of the project are low.
Financial and Business Model	Low	A lack of collaboration among businesses, public institutions, and banks may hamper the effective implementation of the financial and business model. This could lead to little or no use of the insufficient assistance in achieving the goal of reducing plastic pollution and promoting a circular economy. The success is heavily dependent on the active participation of these stakeholders, and any lack of interest or commitment may significantly hinder progress towards achieving the desired outcomes.
EXECUTION		
Capacity	Low	There may be cases where project partners may not be able to sustain the project activities or where project implementation is seriously delayed. UNDP conducts capacity assessments of implementing agencies for HACT as well as arranging financial audits annually for monitoring. The Steering Committee set up under the project will also act as a mechanism for regular monitoring and coordination of project activities, and UNDP will support the implementing agency in managing the relevant activity agreements to ensure the funds and co-financing will be regularly monitored.
Fiduciary	Low	N/A
Stakeholder	Low	Please see the project's pre-SESP for details.
Other	Low	None
Overall Risk Rating	Moderate	This project is identified as Moderate risk at this stage. During the PPG phase, the project will involve a Social and Environment Safeguards expert, who will conduct a more specific screening based on the designed project activities and potential demonstration areas, and give guidance on potential SES assessment and management plans that will be required.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Describe how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how. (max. 500 words, approximately 1 page)

The Project is consistent with the Action Plan of China's National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (NIP) placed a high priority on reduction of POPs and UPOPs release.

The project will deliver on the objectives of the Chemical and Waste Focal Area set for the GEF 8 Programming Directions since hazardous chemicals, including chemicals listed in Stockholm and SAICM, are used in or emitted from one or more supply chains making them widely present in plastic waste streams.

The project will support China's national goals and actions such as Carbon Peaking and Carbon Neutrality target and Zero-waste cities construction, and will be directly and strongly supported by the whole-chain management for plastic pollution action as stipulated in national policies including the Opinions on Further Strengthening Plastic Pollution Control and the 14th Five-Year Action Plan on Plastic Control.

The Initiative will deliver on:

Objective 1: Creation, strengthening and supporting the enabling environment and policy coherence to transform the manufacture, use and sound management of chemicals and to eliminate waste and chemical pollution.

On this Objective, the project will contribute by developing and strengthening policies and regulatory frameworks as well as building capacities in government institutions, private sector and CSOs to support the long-term objective of plastic management. The Life cycle management project in plastic industry in China through its different interventions in close coordination with key stakeholders will contribute to evidence at municipal level practices, knowledge, strategies and planning for improving existing plastic waste stream management in line with waste hierarchy principles, as well as, the adoption of sustainable policies (such as green procurement) and fiscal/financial incentives encouraging plastic waste prevention and circularity of materials in line with a circular economy. Financing mechanism and incentives will be assessed, developed and implemented to allow for access to finance for environmental sound management of different plastic, sustainable recycling practices, development of circular business models, and to sustain and scale project results. Furthermore, the Life cycle management project in plastic industry in China will contribute to the implementation of green and sustainable production principles. Mainly in collaboration with the private sector, the Life cycle management project in plastic industry in China will support manufacturers in introducing life cycle assessments (LCA) throughout the value chain and set innovation targets for the design and scale-up of safer, more sustainable products, production processes and services to improve resource efficiency (e.g. sustainable materials management), phase out the use of chemicals of concern and lower the impact of products and processes, including at the end of life.

Objective 2: Prevention of future build-up of hazardous chemicals and waste in the environment.

The Life cycle management project in plastic industry in China will contribute to the prevention of future build-up of plastic waste and hazardous chemicals mainly through the interventions planned within Component 1 and 2 which aims to provide upstream and midstream solutions to promote circular economy and sustainable materials management. The project will promote LCA of value chains with focus on eliminating the use of hazardous chemicals (including POPs) in plastic products and processes, as well as the introduction of best available techniques and best environmental practices to minimize and eliminate emissions of unintentionally produced POPs and GHG in plastic waste streams management. The project also builds on the support to the implementation of international agreements and initiatives: Stockholm Convention and SAICM. Through its proposed Life cycle management project in plastic industry in China has the potential to generate multiple global environmental and socioeconomic benefits, including facilitating equal access of women and men to

financial services and productive assets, as well as the formalization of informal waste management workers and activities to boost their livelihoods. The project is developed in line with the following GEF-8 principles: Cost effectiveness; Sustainability; innovation; Private Sector Engagement; Facilitates women's participation and decision-making opportunities; Facilitates gender sensitive awareness raising and communication.

Lastly, the project will positively contribute to combat the triple planetary crisis on the three main interlinked issues: climate change, biodiversity loss and pollution, which fully align with GEF's objective for a healthy planet and healthy people.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment:

We confirm that gender dimensions relevant to the project have been addressed as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during PIF development as required per GEF policy, their relevant roles to project outcomes and plan to develop a Stakeholder Engagement Plan before CEO endorsement has been clearly articulated in the Project Description (Section B).

Yes

Were the following stakeholders consulted during project identification phase:

Indigenous Peoples and Local Communities: Yes

Civil Society Organizations: Yes

Private Sector: Yes

Provide a brief summary and list of names and dates of consultations

Gender

To better understand the gender realities within the framework of the project activities in each of the demonstrations, a gender analysis will be carried out as a first step during PPG phase. This analysis will help identifying the different roles and responsibilities of women and men within the whole life Cycle of plastic management, as well as identifying the specific needs and challenges faced by women in this sector. Based on this diagnosis, a Gender Action Plan will be developed to mainstream the gender approach in the execution of the project, which will make it possible to maximize results taking into account the realities and needs differentiated by sex, as well as to make visible the contribution of women and men to the achievement of inclusive sustainable development in the different components and activities proposed, within a gender-sensitized environment. Likewise, the project will seek to strengthen and promote the wide range of development opportunities that the paradigm shift around "life cycle management", the move away from incineration and landfilling towards plastic waste prevention, reuse, recycling and recovery, and the circular economy offer, where women can thrive in all areas of the industry, from entrepreneurs in waste recycling, to development workers, researchers, high-level managers, government officers and Ministers.

The following objectives will be pursued: Develop gender-sensitive policies. Policies to be developed by the project will incorporate gender considerations throughout its design, implementation, monitoring, and evaluation processes. This should involve ensuring that women and men have equal access to resources, opportunities, and benefits, and that gender-based discrimination and biases are eliminated. It will include specific interventions that address the specific needs and priorities of women and other marginalized gender groups, gender-sensitive indicators to track progress towards gender equality and empowerment, and gender responsive budget to ensure resources are adequately allocated. Increase women's participation. Improve the spaces for participation and empowerment of women as agents of change to ensure that the prioritized sectors are free of POPs and their residues. Women's participation will be increased by providing them with training and capacity-building opportunities to improve their skills and knowledge in different sectors covered by the project. Women will also be encouraged to take on leadership roles, supporting them with leadership trainings and/or mentoring programs. Women´s representation in decision-making positions will be also ensured.

Stakeholder

The roles of each key stakeholder are identified and defined as follows, however these roles will be worked out further during the PPG phase of the project:

1) United Nations Development Programme (UNDP): As an international executive institution, responsible for day-to-day supervision and management of the project, technical support, disbursement of funds, etc.

2) Foreign Environmental Cooperation Center (FECO): As an internal executive institution, responsible for subcontracting and implementation of projects, use of project funds, hiring of project experts, etc.

3) Ministry of Finance (MOF): a) Overall responsibility for national GEF program; b) Review, endorse and supervise preparation and implementation of this proposal as the Country GEF Focal Point.

4) Ministry of Ecology and Environment (MEE): a) Ongoing management of the project; b) Issue national policy and standards to regulate environmental performance of China's plastic related sectors; c) Supervise enforcement of environmental policies.

5) Ministry of Industry and Information Technology (MIIT): Provide technical and policy support to MOF and MEE on development and implementation of the plastic related industry management system including identification of technology requirements.

6) National Development and Reform Commission (NDRC): a) Issue and enforce overall national industrial policies; b) Policy level scope definition of plastic related industry management.

7) State Administration for Market Regulation (SAMR): a) Responsible for drafting laws and regulations related to market supervision and management, and formulating relevant regulations, policies, and standards. b) Responsible for the unified registration of market entities. c) To be responsible for organizing and guiding the comprehensive law enforcement work of market supervision.

8) Local Government and Local Environmental Protection Bureaus: a) Local planning and development approvals; b) Support public information dissemination and local social impact mitigation; c) Monitor environmental performance; d) Enforce environmental policies and requirements applicable to plastic related sectors management.

9) Industrial associations on plastic: Including China Plastics Processing Industry Association (CPPIA) and so on. Researching and guiding the direction of industry development, preparing industry development plans, coordinating the relationship between industrial chain enterprises and the industry; reflecting the opinions and

requirements of the industry; organizing technical exchanges and training, implementing industry guidance, and promoting industrial development.

10) Private Sector: a) Participate in project activities; b) Carry out investment on waste and chemicals reduction; c) Comply with national and local environmental policies and standards.

11) General Public: a) Improve consumers' awareness on UPOPs issues related to the plastic sector; b) Exercise consumers' rights to influence the environmental performance of the related sectors.

List of names and dates of consultations:

1. On 13 February 2023, the project objectives and activity design were discussed with the All China Environment Federation, the China Petroleum and Chemical Industry Federation, and the China National Resources Recycling Association by FECO, to understand the production situation and problems in the plastics industry.

2. On 26 February 2023, FECO participated in the Summit Forum on High Value Recycling of Recycled Plastics to learn about recycling and utilization of recycled plastics in China and held a discussion with the China Plastics Processing Industry Association to discuss the project activity design.

3. On April 21, 2023, FECO jointly held the kick-off meeting of the Global Action Dialogue on Plastic Pollution Governance project with the Ellen MacArthur Foundation, and held a meeting with the relevant direct agencies of the National Development and Reform Commission and the Ministry of Ecology and Environment, as well as the World Wide Fund for Nature, Carbon Disclosure Project (CDP), ClimateWorks Foundation CWF, All China Environment Federation, the China Petroleum and Chemical Industry Federation, the China Plastic Processing Industry Association, China National Resources Recycling Association , Tsinghua University, Beijing University of Chemical Technology, Meituan, Coca-Cola, Walmart, Nestle, Jiangxi Green Recycling Co., Ltd., Xiamen Luhai Pro-environment Inc., etc. The exchange of hot topics of concern for the negotiation of the international instrument on plastic pollution control and domestic and international policy dynamics were discussed.

4. On April 26, 2023, multiple consultations and discussions have been conducted among the governmental departments, industrial institutions, plastic production, using and recycling enterprises, and relevant research and design institutions to define the goal, outcomes, and activities of this project.

5. On July 7, 2023, a dialogue meeting on global action on plastic pollution governance was jointly held with the Ellen MacArthur Foundation. Representatives from the WWF, China Plastics Processing Industry Association, China National Resources Recycling Association, China Synthetic Resin Association, China Research Academy of Environmental Sciences, and Shenzhen Bureau of Ecology and Environment, etc., focused on the hot issues of policy and industry, and shared information on the progress of the current global action on plastic pollution governance and the international trend development, and carried out exchanges and discussions on the extended producer responsibility system and typical plastic product pollution control measures.

6. On 30 August 2023, a roundtable discussion on global action on plastic pollution governance was jointly organised with the Ellen MacArthur Foundation, and potential modes of launching initiatives related to plastic pollution governance were discussed with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the World Economic Forum (WEF), the Consumer Goods Forum (CGF), the China Packaging Federation (CPCF), Xiamen Luhai Pro-environment Inc., and Taurang Environmental Technology Company (TETC).

7. In the above consultations, the general public, including majority and minority ethnic groups and local communities, was invited to a) raise their awareness on the environmental and social issues related to the plastic sector; b) exercise their rights as consumers to influence/improve the environmental performance of the sector.

8. Above consultations provided insights for the design of this Life cycle management project in plastic industry in China on how a systemic and coordinated approach at global, national and city level could help address the complex issue of chemicals and waste and shifting of unsustainable consumption and production towards a cleaner, greener and circular economic development.

During the PPG process, there will be a dedicated stakeholder engagement expert who will further identify and assess the project key stakeholders including IPLC, assess their interests in the project, define their roles and responsibilities during project implementation, monitoring and evaluation, lead the consultations, and formulate the stakeholder engagement plan (SEP). The SEP during PPG phase will account for consultations including the above-mentioned stakeholders and the proper procedures conducted to make sure that all stakeholders including IPLC are engaged throughout project life cycle.

(Please upload to the portal documents tab any stakeholder engagement plan or assessments that have been done during the PIF development phase.)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Yes

Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided indicative information regarding Environmental and Social risks associated with the proposed project or program and any measures to address such risks and impacts (this information should be presented in Annex D).

Yes

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described in the Project Description (Section B)

Yes

ANNEX A: FINANCING TABLES

GEF Financing Table

Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	GEF Project Grant($)	Agency Fee($)	Total GEF Financing ($)
UNDP	GET	China	Chemicals and Waste	POPs	Grant	20,265,000.00	1,823,850.00	22,088,850.00
Total GEF Resources ($)						**20,265,000.00**	**1,823,850.00**	**22,088,850.00**

Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

true

PPG Amount ($)

300000

PPG Agency Fee ($)

27000

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	PPG($)	Agency Fee($)	Total PPG Funding($)
UNDP	GET	China	Chemicals and Waste	POPs	Grant	300,000.00	27,000.00	327,000.00
Total PPG Amount ($)						**300,000.00**	**27,000.00**	**327,000.00**

Please provide justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total($)
Total GEF Resources					**0.00**

Indicative Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing($)	Co-financing($)
CW-1	GET	20,265,000.00	182385000
Total Project Cost		**20,265,000.00**	**182,385,000.00**

Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Ministry of Ecology and Environment (MEE)	Grant	Investment mobilized	200000
Recipient Country Government	Ministry of Ecology and Environment (MEE)	In-kind	Recurrent expenditures	300000
Private Sector	Plastic products manufacturers, logistics companies, plastic waste recycling enterprises, etc.	Grant	Investment mobilized	90942500
Private Sector	Plastic products manufacturers, logistics companies, plastic waste recycling enterprises, etc.	In-kind	Recurrent expenditures	90942500
Total Co-financing				**182,385,000.00**

Describe how any "Investment Mobilized" was identified

Please provide indicative information regarding the expected amounts, sources and types of Co-Financing, and the sub-set of such Co-Financing that meets the definition of Investment Mobilized.

The project's technology demonstration and technology diffusion activities are expected to draw substantial private sector funding. Investment mobilized is sourced out mainly from the contribution of the private sector in plastic sectors. Investment mobilized is calculated based on initial consultations with interested industry associations, plastic products manufacturers, recycling enterprises and logistics companies. The amount (both in cash and kind) was estimated based on the cash, personnel, site, equipment, and technology investment that private sector enterprise will contribute to the project.

While preparing for the PIF, rounds of consultations with stakeholders including the private sector were held in 2023. A summary of the consultations is covered under “Stakeholder Engagement” section on page 29 of the PIF. During these consultations, many private sector enterprises expressed their strong interest in participating in pilot activities under the project. Private sector stakeholders who expressed interest include polymers and plastics producers under the petroleum and chemical industry associations, recyclers under the recycling association, chemicals and plastics producers under plastics processing industry association, packaging companies, environmental technology providers, and environmental new/renewable material companies.

An initial screening of interested companies were conducted and selected companies were requested to provide their co-financing contributions consistent with the requirements of the GEF Co-Financing Policy. The private sector investment mobilized shown in the cofinancing table is mainly calculated from the following categories: 1) candidate pilot enterprises’ planned contribution under Component 2 with their own existing equipment and manufacturing site; 2) new capital and operational investments to be made during project implementation in the form of research, new equipment, technologies development , equipment retrofitting, and

site modification for the purpose of piloting project activities under Component 2. These new investments will be made by the companies to achieve project results and upscaling project solutions nationwide on green and circular design for plastics, development of alternatives to problematic and avoidable plastics products, collection model pilots, intelligent and efficient segregation, microplastics abatement and disposal, and digital tracking and certification of recyclable plastics; and 3) new capital and operational investments to be made by big plastics end-users including logistics and delivery companies and shopping centers to adopt circular business models.

Additionally, the GEF grant funding will attract significant co-financing from other stakeholders in both public and private sectors. Moreover, the Carbon Peaking and Carbon Neutrality Strategy, as well as the Zero-Waste Cities Strategy, will encourage local public sector funding. The specific amounts of funding associated to the expected GEBs will be finalized during the PPG phase and will be confirmed through signed co-financing letters.

At PPG stage, the above-mentioned indicative co-financiers will be re-screened against a more detailed selection criteria, and the breakdown of co-financiers and amounts will be detailed in the CEO endorsement.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Name	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	Nancy Bennet	3/20/2024	Anderson Alves		nancy.bennet@undp.org
Project Coordinator	Anderson Alves	3/20/2024	Anderson Alves		anderson.alves@undp.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Name	Position	Ministry	Date (MM/DD/YYYY)
Peng Xiang	GEF Operational Focal Point	Ministry of Finance, China	3/20/2024

ANNEX C: PROJECT LOCATION

Please provide geo-referenced information and map where the project interventions will take place

Fig. 4 Map of project location

Demonstration area:

(1) Demonstration on green packaging and green logistics models in logistics, e-commerce, express delivery sectors

Beijing Tianjin and Hebei province, Shanghai, Jiangsu and Zhejiang province

(2) Demonstration on green design of plastics

Guangdong, Jiangsu and Zhejiang province

(3) Demonstration of collection models for low-value recyclable plastics in coastal and riverine cities

Zhejiang province

(4) BAT/BEP demonstration on intelligent and efficient segregation of plastic waste and high value utilization of low value recyclable plastics.

Jiangsu and Fujian province

ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

(PIF level) Attach agency safeguard screen form including rating of risk types and overall risk rating.

Title

PIMS9797 Pre-SESP China Plastic 20240315

ANNEX E: RIO MARKERS

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
No Contribution 0	No Contribution 0	No Contribution 0	No Contribution 0

ANNEX F: TAXONOMY WORKSHEET

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	(multiple selection)	(multiple selection)	(multiple selection)
	Indigenous Peoples		
	Private Sector		
		Financial intermediaries and market facilitators	
		Large corporations	
		SMEs	
		Individuals/Entrepreneurs	
	Beneficiaries		
	Local Communities		
	Civil Society		
		Community Based 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	(multiple selection)	(multiple selection)	(multiple selection)
	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	(multiple selection)	(multiple selection)	(multiple selection)
	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 Area/Theme	(multiple selection)	(multiple selection)	(multiple selection)
	Chemicals and Waste		
		Persistent Organic Pollutants	
		Unintentional Persistent Organic Pollutants	
		Sound Management of chemicals and Waste	
		Waste Management	
		Emissions	
		Disposal	
		Plastics	
		Industrial Emissions	

		Best Available Technology / Best Environmental Practices	
		Green Chemistry	
	Climate Change		
		Climate Change Mitigation	
			Sustainable Urban Systems and Transport