



Integrated Safeguards Data Sheet Restructuring Stage

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I. BASIC INFORMATION

1. BASIC PROJECT DATA

Project ID	Project Name
P152959	Reduction and Phaseout of PFOS in Priority Sectors
Task Team Leader(s)	Country
Qing Wang	China
Approval Date	Environmental Category
07-Apr-2017	Full Assessment (A)
Managing Unit	
SEAE1	

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	67.22
Total Financing	67.22
Financing Gap	0.00

DETAILS

Non-World Bank Group Financing

Counterpart Funding	42.97
Borrower/Recipient	42.97
Trust Funds	24.25
Global Environment Facility (GEF)	24.25



2. PROJECT INFORMATION

Current Program Development Objective

The project development objective is to reduce PFOS in selected sectors and enterprises in China in a sustainable manner.

Note to Task Teams: End of system generated content, document is editable from here.

3. PROJECT DESCRIPTION

China ratified the Stockholm Convention on Persistent Organic Pollutants (POPs) in 2004, a global treaty counting 180 Parties and addressing an increasing number of chemical substances listed as POPs (currently 26), including perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOSF).

The Project consists of three components and project management: the first component addresses PFOS/PFOSF production reduction; the second component addresses PFOS use reduction in chromium mist suppressant for metal plating, in pesticide formulations for invasive pest control, and for PFOS-based firefighting foam; and the third, technical assistance, component will support capacity building and policy development to ensure sustainable phase-out of PFOS in the targeted sectors. Policy development activities will be extended to cover PFOS reduction in the enhanced oil recovery application.

Component design at approval:

Component 1: PFOS Production Reduction

The Project will support production phase-out and reduction for primary PFOSF producers. Activities to be financed include: closure and conversion of production to non-POPs like chemicals.

Conversion of production facilities: This component will finance conversion of PFOSF production facilities to new non-PFOS-based products. The project would not finance any production of chemicals known to possess persistence, bio-accumulative and toxic (PBT) characteristics. Eligible incremental expenditures would include: (a) development of non-PFOS products; (b) costs related to registration of new products; (c) equipment and technology transfer costs; (d) installation of equipment; (e) training; (f) trial production; (g) incremental costs of new raw materials, utilities, waste management; and (h) costs of disposal of contaminated equipment previously used for producing or storing PFOS.

Plant or production line closure: GEF incremental support would be extended to enterprises that might decide to close down their production facility altogether. GEF resources will be used to support management of environmental liabilities from such closure. Eligible incremental expenditure would include: (a) dismantling costs; (b) disposal costs of contaminated equipment and materials; and (c) consulting services to develop site risk assessment, management and monitoring plans. Remediation beyond disposal of contaminated equipment is expected to be financed by other sources outside of the Project.



Component 2: Reduction of PFOS Use

Three priority sectors are addressed in this component: chromium mist suppressants in the metal plating sector, firefighting foam sector, and pesticides for control of red imported fire ant (RIFA). The fourth large sector in terms of consumption, oil production, is addressed through TA only under component 3.

Chrome mist suppressant in metal plating: The Project will finance demonstration activities to showcase closed-loop systems, with equivalent or improved efficacy in terms of protection of human health and safety. The demonstration activities include installations of approx. two closed-loop systems for different chrome-plated product lines.

The project will finance costs in relation to acquiring of the following: (a) upgrade of facilities to closed-loop systems; (b) chrome plating baths replacement; (c) new chromium mist suppressant; (d) other equipment, testing device, and control systems related to the use of new alternatives; (e) ventilation and safety equipment; (f) site preparation for installation of new equipment;; and (g) advanced treatment facilities for up to three industrial parks for removing perfluorinated compounds (PFCs) from water discharge from chrome plating industry. The industrial parks will be selected during the project implementation. Criteria for selection of these industrial parks would include the number of chrome plating enterprises, environmental management capacity of the industrial parks, and willingness to showcase demonstration activities to similar industry in other industrial parks.

Firefighting foam: The project will finance development and production of non-PFOS firefighting foam at 3-5 firefighting foam manufacturers. The selection criteria of firefighting foam manufacturers would include: (a) research and development capacity; (b) relevant experience with firefighting chemicals; (c) large network of firefighting foam clients; (d) good environmental performance record; (e) in-house capacity to develop non-PFOS surfactants or technical cooperation with reputable surfactant manufacturers; and (f) cost effective proposals.

The following costs will be covered by the Project: (a) research and development of new non-PFOS based firefighting foam; (b) environmental and health impact evaluation of new alternatives; (c) new equipment for manufacturing non-PFOS based firefighting foam; (d) site preparation for installing new equipment; (e) tanks and storage facilities; (f) testing efficacy of new products; and (g) registration of new surfactants and firefighting foam. In addition, financing costs of new non-PFOS firefighting foam needed for training at 3 training facilities of the public security ministry could be supported, as well as costs of firefighting equipment retrofit or procurement of new equipment, together with facilities for treatment of wastewater discharge.

Pest control: The project will finance procurement of pesticides (9 tons total: 6 tons of indoxacarb based baits, 3 tons of cypermethrin based powder, and a small amount of hydramethylnon) for demonstration of a two-phase treatment method using bait and powder to control red fire ants, carried out under component 3.

Component 3: Policy and Technical Assistance

This component will finance technical assistance activities required to strengthen regulatory and policy framework, standards, and capacity building. These activities are essential for ensuring sustainability of PFOS phase-out in both production and consumption sectors. TA activities include:

Standards and Regulations: The Project will carry out activities to develop industry standards, good practices, and regulations to support introduction of non-PFOS alternatives. Supported activities would include: (a) labeling scheme to ensure that commercially available chromium mist suppressant will have to be properly labeled; (b) development of



technical specifications for chromium mist suppressants, including efficacy in protecting human health and safety; (c) standards defining PFOS waste, and related best practices for disposal; specification of discharge of wastewater containing PFOS for electroplating industry in Guangdong province; (d) development of guidelines for cleaner production for organofluorine manufacturing industry; (e) revision of cleaner production audit indicator system for electroplating industry to include PFOS in Guangdong Province; and (f) technical report on efficacy of non-PFOS based pesticides for controlling red imported fire ant.

Screening of non-PFOS Alternatives: To ascertain that new non-PFOS alternatives to be introduced in China should not have PBT characteristics, a PBT screening system for new chemicals will be established. Supported activities include: (a) guidelines for registration of new chemicals including reporting requirement on PBT characteristics; (b) development of standard testing protocol for determining PBT characteristic of organofluorine chemicals; and (c) screening reports on PBT characteristics of at least 10 non-PFOS chromium mist suppressants.

Technical Studies: A series of studies will be carried out under the project to enhance understanding PFOS use as CMS in electroplating factories in Guangdong province. To guide the chrome plating industry in the future as part of the efforts to sustain achievement of this project, the Project will finance the testing of mist suppression performance of alternatives and develop a list of acceptable chromium mist suppressants. A preliminary study will also be conducted on health impacts of PFOS in China as a first step to scoping and better understanding the issue.

Technical Assistance to Eliminate the Use of PFOS in Firefighting: The project will support testing the safety and efficacy of alternative non-PFOS firefighting foams and products; devising technical way forward for substitution of PFOS in the firefighting sector; revising relevant standards as needed; capacity development to detect PFOS substances in foam extinguishing agents; and strengthening the tracking and control of PFOS containing firefighting agents. Since a large quantity of PFOS firefighting foam is used for training, adopting new non-PFOS alternative foam could lead to permanent reduction of a significant quantity of PFOS. The project would therefore finance revision of firefighting protocols and training manuals for effective use of new non-PFOS firefighting foam without compromising safety and health of firefighting cadets.

Technical Assistance to Eliminate the Use of PFOS for control of RIFA: Demonstration of alternative pest management techniques and practices will be conducted for four years in, originally, 5 provinces, Fujian, Guangdong, Guangxi, Guizhou and Hainan, adding demonstrations in Jiangxi and Yunnan through proposed June 2021 restructuring. The project will cover costs related to the 'training of trainers' program that will involve 'training schools' in the 5 demonstration provinces and up to additional 5 provinces. Participants will include county, municipal and provincial level practitioners.

PFOS Registration and Reporting System: The project will strengthen capacity of Ministry of Environment Protection (MEP) and local Environmental Protection Bureaus (EPBs) to enforce regulations and monitoring requirements for hazardous substances. A tracking system will be developed and mainstreamed in the National POPs Chemical Survey and Reporting Information System to support registration of producers of PFOSF, secondary PFOS based product manufacturers, and users of PFOS products in firefighting foam industry. The system will assist China to monitor production and supply of PFOS materials from sources to end users. Technical capacity of local EPBs will be strengthened to enable them to carry out or supervise factory audits to prevent any diversion of PFOSF to banned applications. Efforts would mainly focus on strengthening capacity of local EPBs in Fujian and Hubei to control the PFOS supply chain.



Component 4: Project Management

Component 4 will finance: (i) costs of operations of three project management offices (PMOs) at FECO, Guangdong EPB and Hubei EPB, as well as (ii) Monitoring and Evaluation. Eligible costs include expenditures incurred by the PMOs in carrying out the Project.

The project has undergone one restructuring in June 2021 to accelerate implementation. Progress has been made on implementation, however not sufficient to complete all planned activities by the current project closing date of March 31, 2023. In addition, grant savings of \$4.48 million have been accumulated. A 15-month extension of the grant closing date (from March 31, 2023 to June 30, 2024) is therefore proposed to: complete existing activities and achieve the targets of one PDO indicator and four intermediate results indicators; and reprogram grant savings to new activities that will enhance project impact in line with the PDO and component outcomes, and can be completed within the proposed extension period. In addition, some planned activities that are considered redundant given the changes in the country's policy environment regarding PFOS will need to be cancelled.

The proposed changes to project components are: (a) **for component 1: PFOS Production Reduction** - Dropping of Hengxin from the project; (b) **for component 2: Reduction of PFOS Use** - Cancellation of (i) the collection and disposal of PFOS-containing wastes in the electro-plating industry in Guangdong province and (ii) procurement of the law enforcement inspection device for PFOS phaseout for Guangdong, as well as reduction of the budget allocation for PFOS-free firefighting foam demonstrations; (c) **for component 3: Policy and Technical Assistance** - Cancellation of (i) the study on environmental quality standard of fluorinated compounds in drinking water, (ii) the study on screening values of typical fluorinated compounds in contaminated sites, (iii) alternative screening for pesticides, (iv) study tours; and (v) national technical assistance consultant for FECO. Addition of new sector specific activities: (i) dissemination of technical knowledge and management and supervision experiences on disposal of PFOS-containing waste firefighting foam; (ii) analysis of environmental and social impacts of the PFOS-free firefighting foam; and (iii) Revision of PFOS discharge standard for the electro-plating industry in Jiangsu. New Activities – Regional Investigation and Control Action Plan: (i) promoting programmatic management and control of PFAS in three selected demonstration areas in line with the Action Plan for Controlling Emerging Pollutants; and (ii) Investigating PFAS contamination in the Yangtze River, the Hanjiang River, and other key river basins in Hubei Province and developing an action plan for addressing the contamination. New Activities – National Regulation Strengthening and Capacity Building: Formulating testing standards for PFOS in waste streams and for PFAS in non-drinking water and other environmental media; and (d) **for component 4: Project Management** - (i) adjustment of the budget for third-party supervision contracts and IOC; and (ii) addition of project performance evaluation and publication services.

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4. PROJECT LOCATION AND SALIENT PHYSICAL CHARACTERISTICS RELEVANT TO THE SAFEGUARD ANALYSIS (IF KNOWN)

The two primary producer demonstration enterprises are located in Hubei Province, central south of China, on fairly flat terrain with temperate-subtropical climate and annual precipitation around 1200 mm. The potential activities of collection and disposal of wastes containing PFOS will take place in Shanghai, Zhejiang Province, Jiangsu Province, and Henan Province; the TA studies will take place in Hubei, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Jiangxi, Yunnan, Zhejiang, Jiangsu, Shandong, Sichuan, Shanghai, Tianjin, Beijing, Hebei,



Henan, Liaoning, Chongqing and other provinces with PFOS production and use, all in central, northeast and south China with temperate, subtropical to tropical climate and various topography.

5. ENVIRONMENTAL AND SOCIAL SAFEGUARDS SPECIALISTS ON THE TEAM

Shuang Zhou , Social Specialist /Shaojun Chen, Social Consultant
Bin Xu, Environmental Specialist

6. SAFEGUARD POLICIES TRIGGERED

Safeguard Policies	Triggered	Explanation
Environmental Assessment (OP) (BP 4.01)	Yes	<p>The project will involve demonstration activities and pilots to reduce the production and the use of perfluorooctane sulfonic acid (PFOS) and related chemicals, a family of toxic chemicals that are extremely persistent and likely to be carcinogenic to humans. The industries to be targeted by the project, i.e., chemical industry, metal plating, pest management and fire protection are heavily polluting and energy/resource intensive. Given the highly complex environmental impacts and potentially significant risks, a category A was assigned as per the WB safeguard policy.</p> <p>Since most beneficiaries for demonstration can only be determined during implementation, a framework approach was adopted according to the Bank’s safeguard requirement. An Environment Management and Social Framework (ESMF) has been developed under the hands-on instruction of the Bank team. It is designed to guide the screening and selection process, the evaluation of environmental and social risks and the management of these risks for each sector involved under various scenarios. Major impacts and risks, measures and public consultation are described below under II A.</p> <p>Hubei Youshida Technology Co., Ltd. (referred to as “Youshida”) was identified as the first PFOS/PFOSF production close-down enterprise, and Hubei Hengxin Chemical Co., Ltd. (referred to as “Hengxin”) is identified as the second one but dropped. The PFOS/PFOSF production close-down activities mainly include dismantling and cleaning of existing PFOS/PFOSF production equipment, disposal of contaminated equipment and</p>



materials, and site environmental investigation and assessment. Subprojects including Northeast Electric Group site and Baoxin site as closed-loop system demonstrations in electro-plating industry, Haofeng site and Gaoping site as electro-plating industry park wastewater treatment demonstration, production lines of Waysmos plant, Nenglin plant, Suolong plant and Langchao plant as the demonstration of the PFOS-free firefighting products as well as a 100m³ fire fighting test were identified under the Reduction of PFOS Use component. The above activities will either terminate the PFOS and PFOSF production or reduce the PFOS use. These activities are either dismantling old PFOS /PFOSF production equipment or technical retrofitting at existing sites. These activities are all small scale and not located in an environmental sensitive area as described in II A section, the negative environmental impact associated with the activities is considered limited, localized and short-termed. Hence these subprojects were classified as category B and an ESMP (not a full EIA) for each subproject was prepared to manage related environmental risks. The ESMPs for these activities have all been disclosed locally and at World Bank website during the project implementation.

The environmental related risks from the waste containing PFOS collection, transportation and disposal activity include: (i) potential emergency risks and impacts from the waste collection, transportation and disposal; (ii) air emissions, industrial solid wastes and hazardous wastes, wastewater, noise, and occupational health and safety hazards from the existing incinerators during the disposal of waste containing PFOS. The study on 'Disposal technology evaluation of high temperature incineration for PFOS destruction' is of trial test (the total test consumption is not more than 10kg) by qualified contractor, which has limited impact on the environment. The ESMF has covered these activities to guide the screening and selection process of the activities, the evaluation and the management of related environmental and social risks which are described in II A section.



To mitigate the environmental and social risks related to the activity of PFOS containing waste collection and disposal, the hazardous waste disposal vendors will be selected by adopting the following eligibility criteria: (1) hazardous waste operation permit for the relevant disposal facilities; (2) EIA for the hazardous disposal facilities and approved by authorities; (3) pollutant discharge permits for the relevant disposal facilities; (4) generally compliant with discharge standards with no major violation or environmental and social incidents; (5) land certificate. In addition, an audit to cover both environmental and social risks in connection with the proposed waste disposal facilities will be conducted by an external consultant hired by the client, FECO, before the vendor is selected and contracted. The typical social risks would include labor and working conditions (particularly OHS risks), community health and safety, among others. The requirement of the ESMF will be followed for the hazardous disposal vendor screening to address E&S risks. As part of the ESMF, the initial environmental and social screening identified that the newly proposed activities of collection and disposal of expired firefighting foam containing PFOS will be classified as category B and an ESMP (not a full ESIA) for the PFOS containing waste collection and disposal activities will be required to manage the environmental and social risks. The requirements of the existing EIA and the auditing findings will be integrated into the future ESMP for the PFOS containing waste collection and disposal activities. The environmental performance is deemed satisfactory. Environmental and social audits have been carried out as part of the subprojects' ESMP work and the findings and proposed actions have been integrated in the ESMPs. The environmental and social monitoring have been well implemented as per ESMPs. FECO and provincial PMOs have designated staff to manage environmental and social safeguards work supported with external experts and consultants. Capacity building activities have been carried out to FECO, Provincial PMOs, demonstration



enterprises and contractors as per the ESMF.

Social risks and impacts may be livelihoods loss or land acquisition following enterprise production line closure or relocation, or impacts on project enterprise employees' job security, and on local residents in project sites. For example, possible relocation of a few PFOS enterprises may cause a small number of job changes or job losses. Chinese labor laws and regulations will be followed to ensure appropriate compensation and livelihood restoration for affected workers. To address possible closure or conversion of the existing facilities, social impacts on livelihoods and employees' job security, social management instruments have been included in the ESMF, which was prepared prior to project Appraisal and cleared by the World Bank. By restructuring, the semi-annual progress reports submitted by FECO indicate that the proposed sub-grant recipients have not had to lay-off labor in connection with the project-financed activities. In any cases of job loss for future activities, an employee redundancy compensation action plan (ERCAP) will be prepared by the project participating enterprise and submitted to the World Bank for prior review. As part of the updated ESMF, the social screening identified that the newly proposed activities for the restructuring would cause minor concerns related to occupational, health and safety (OHS) risks to the handlers of PFOS-containing waste. During implementation, the designated ESMP will assess the OHS risks to potential waste handlers and set out the appropriate mitigation actions to tackle the risks.

The proposed new activities for the restructuring are only consultancy activities (TA activities) and will not trigger new safeguards policies. The project E&S category remains A. The client, FECO, has prepared a revised ESMF to include these new TA activities and the requirements for TA activities with potential E&S implications that the TORs need to include provisions to ensure environmental and social risks are assessed and mitigation measures are proposed as part of the TA outputs for addressing those E&S implications.



		The revised ESMF was disclosed at FECO’s website on Mar 10, 2023 and the English version will be disclosed at World Bank’s website upon clearance.
Performance Standards for Private Sector Activities OP/BP 4.03	No	
Natural Habitats (OP) (BP 4.04)	No	<p>The project will take place mostly within existing facilities, industrial parks or farmland. If relocation to new facilities were to be required, it is expected that new location will be in the urban or suburban areas where there is basic infrastructure to support industry. Therefore, it does not affect any natural habitats.</p> <p>The newly proposed activities for restructuring are consultancy activities and do not affect any natural habitats and OP 4.11 will not be triggered.</p>
Forests (OP) (BP 4.36)	No	Not applicable.
Pest Management (OP 4.09)	Yes	<p>The project will support the procurement and use of alternative pest control agents to replace PFOS-based insecticides that have been the major means to control red imported fire ant in China. A Pest Management Plan (PMP) has been developed and annexed to the ESMF. The PMP highlights the principle of integrated pest management embodied by this OP and focuses on non-PFOS based insecticides, their safe storage, transportation and application. It includes a monitoring and training program for farmers and agricultural technicians.</p>
Physical Cultural Resources (OP) (BP 4.11)	No	<p>The project will take place within existing facilities, industrial parks or farmland with no physical cultural resource as defined by this OP foreseen for the existing and future pilot activities.</p> <p>The newly proposed activities for restructuring are consultancy activities and will not trigger OP 4.11.</p>
Indigenous Peoples (OP) (BP 4.10)	No	<p>The targeted industries are located in urban areas where it is unlikely there is any presence of indigenous peoples by the criteria of the Bank IP term. In case enterprises have to relocate to new areas, they are expected to move to industrial parks within urban or semi-urban areas since the industry needs basic infrastructure support. Such areas are unlikely to have any issues related to indigenous people either.</p>



The updated ESMF concludes that the newly proposed activities for restructuring will not trigger OP 4.10.

Most of the project activities will be carried out within existing facilities of project enterprises with no need for additional land. This policy might be triggered however as some enterprises that are currently located in residential areas may want to produce non-PFOS alternatives, and in some provinces establishment of new chemical processes in facilities located in residential areas will not be allowed. Therefore, they would have to move to a new location which is usually an existing industrial park. Even if it was not in an industrial park, the need for land in terms of project company relocation or expansion would be very limited.

A resettlement policy framework as part of the ESMF has been prepared to address potential emerging land demands and involuntary resettlement associated with job changes or losses during project implementation. It sets that local Chinese labor laws and regulations and Bank safeguards policy requirements will be followed to ensure appropriate compensation and livelihood restoration for any affected people under the project. In case of 20 or more employees to be laid off in one time by project enterprises, according to the Chinese government labor regulation, a full employee resettlement plan should be prepared by the enterprise and reported to the local labor authorities. The plan should be submitted to the Bank team for prior review before actual layoff of staff of the related enterprise. Those laying off less than 20 employees should follow the Chinese government labor regulations, and the employee resettlement can be covered in the environment assessment report under Op 4.01, which will also be subject to prior review by FECO and the Bank task team.

The ESMF sets measures and procedures to be followed so as to mitigate social negative impacts. The ESMF states clearly the documents to be prepared if there is any land acquisition or

Involuntary Resettlement (OP) (BP 4.12) Yes



resettlement identified prior to appraisal and during implementation: Resettlement Action Plans (RAP), or due diligence review of recent land acquired as new location of the project beneficiary enterprise, or employee resettlement plan in the case of worker's redundancy, or other social safeguards mitigating measures as appropriate will be prepared and implemented according to the Bank safeguards policy as and when required.

A professional consultant on social safeguards and broad social development has been hired to prepare the ESMF social part. The ESMF is deemed satisfactory by the Bank team and has been disclosed before appraisal. If any social management instrument is to be prepared during project implementation, it will be also disclosed and consulted by fully following the Bank and Chinese government requirements.

Currently, there is one participating enterprise (Hengxin) that has involved land acquisition at its new site. Hengxin, one of the largest PFOSF producers in China, was established in 2004 in Yingcheng County of Hubei Province. The factory's current site occupies an area of about 1.3 ha, which will be converted into a logistic center by Hengxin. Hengxin will phase out PFOSF production and upgrade its capacity for producing other products at a new site in Saifu Industrial Park (~10 km away from current location). All the current 60 affected employees in Hengxin would be reassigned within the enterprise because production capacity at the new site will be enlarged and more workers will be required. At the time of updating this ISDS, a RAP has been developed in accordance with the ESMF and submitted to the Bank for clearance before the land can be acquired and sub-grant agreement can be signed between Hengxin, FECO and PPMO. The RAP was disclosed locally on September 17, 2019 and on the Bank website on September 25, 2019. The monitoring report (as of August 2020) indicates the land acquisition at Hengxin's new site was completed and the compensation was paid in full to the affected persons.



Hengxin conversion of production facilities demonstration has been dropped from the project due to its management and financial difficulties.

According to the updated ESMF, the newly proposed activities for the restructuring will not trigger OP 4.12.

Safety of Dams (OP) (BP 4.37)	No	Not applicable.
Projects on International Waterways (OP) (BP 7.50)	No	Not applicable.
Projects in Disputed Areas (OP) (BP 7.60)	No	Not applicable.

II. KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

A. SUMMARY OF KEY SAFEGUARD ISSUES

1. Describe any safeguard issues and impacts associated with the Restructured project. Identify and describe any potential large scale, significant and/or irreversible impacts.

Environment

The project has overall positive environmental impacts as it supports phasing out or reducing PFOS and replacing with less toxic and persistent chemicals in China. Since demonstration activities mainly involve converting to other products, retrofitting or closing down within an existing factory, impacts during construction in most scenarios are foreseen to be confined within the facility. However, converting and retrofitting often requires dismantling part of the old equipment, reconfiguring pipeline system and/or factory space. Handling and disposal of spoil and scraps, some of which can be hazardous, could pose negative impacts on the environment and workers health both on-site and off-site. This needs to be carefully assessed, planned and managed for such enterprises once selected during implementation. Due to limited resources, the project will not support site remediation, but only the site assessment of the closed facilities.

Impacts during operation vary considerably due to the diverse set of sectors and sub-projects involved. The ESMF describes succinctly the sectors, their main processes and technologies, major pollution and environmental risks associated. Typical for chemical intensive industries, these include air emissions of acidic and alkali chemicals as well as toxic fugitive emissions inside and outside workshops, and flue gas from boilers, water effluent high in non-biodegradable substances or heavy metals, inorganic sludge and solid wastes including hazardous wastes, and their final treatment and disposal off-site.

For application in metal electroplating industry, main environmental impacts include wastewater, waste gas and solid wastes as well as potential environmental risk of chemical leakage. For application of substitute pesticides in agriculture, improper use and storage could lead to safety risks and health hazard for farmers/users as well as soil and water contamination. For application of foam substitute in firefighting, chemicals in foam could be washed away into the surrounding environment, causing contamination of water and soil.

In the implementation stage, Youshida is identified as the first PFOS/PFOSF production close-down enterprise and



Hengxin is identified as the second one. Youshida is a small plant with an annual PFOS and PFOSF production capacity of 40 tons and the plant covers an area of 13324.48 square meters and is located in Wuhan Xingang Panwan Industrial Park, Jiayu County, Xianning City, Hubei Province. Hengxin is another small plant with an annual PFOS and PFOSF production capacity of 30 tons and the plant covers an area of about 30 mu (20,000 square meters) and is located in Yingcheng Economic and Technological Development Zone, Yingcheng County, Xiaogan City, Hubei Province. During PFOS/PFOSF production equipment dismantling at both Youshida and Hengxin, there will be similar potential environmental impacts as follows: (a) solid waste including dismantled equipment, hazardous waste (e.g. waste chemical residue in the kettles, waste activated carbon containing chemicals, waste products) and domestic waste; (b) waste water including domestic sewage from workers, flushing wastewater from equipment washing and residue wastewater in trenches, wastewater collection tank and pipeline network of rainwater and sewage; (c) waste gas including volatilization of washing solvent and purge gas during equipment dismantling and exhaust gas from transportation vehicle; (d) noise from equipment and transportation; (e) health and safety risks for workers including mechanical hurt and chemical corrosion during equipment dismantling; (f) secondary pollution during emergencies, e.g. chemical or hazardous waste leakage during dismantling activities or transportation, etc. In consideration of the project context and scale and it not being located in an environmentally sensitive area, the negative environmental impact associated with the project activities is considered limited, localized and short-termed. Hence, both subprojects are classified as category B and an ESMP (not a full EIA) for each subproject is required to manage related environmental risks. The ESMPs were prepared following the ESMF by Youshida and Hengxin and describe the project background and environmental status, assess the impacts, propose mitigation measures, clarify responsibilities for environmental management, environmental monitoring plan, capacity building programs, grievance redress mechanism as well as monitoring reporting mechanism to manage the environmental risks adequately. However, following management and financial difficulties, Hengxin applied to withdraw from the project in September 2021. Even though Hengxin withdrew the demonstration activity, the mitigation measures in the ESMP are followed during the dismantling of PFOS/PFOSF production equipment. FECO reported that regular inspections by local Emergency Management Bureau and Ecology and Environment Bureau were carried out to ensure the proper dismantling of equipment and disposal of waste satisfactory to Bank requirement. FECO reported that the existing Hengxin site has been included in China National Soil Environment Management System for Contaminated Land under government management and supervision. FECO and the Bank have confirmed that there were no outstanding environmental and social safeguard issues, following which FECO signed the termination agreement with Hengxin on November 21, 2021.

A potential PFOS/PFOSF production close-down demonstration enterprise (Hubei Xiaochang Xiangshun Chemical Industry Co., Ltd. , referred to as “Xiangshun”) was found to engage in illegal production by the local environment authority, and was urged to dismantle production equipment when its draft ESMP was under review by the Bank task team. Xiangshun is also a small plant with an annual PFOS output of 4 tons and the plant covers an area of 16 mu (~10,667 square meters), which is located in the southern suburb of Xiaochang County, Xiaogan City, Hubei Province with no centralized resident area nearby Xiangshun. Hubei PMO and an external agency conducted environmental audits and regular inspections to Xiangshun site after the dismantling of Xiangshun’s production equipment to ensure that the dismantled equipment and wastes were treated and disposed of satisfactorily to Bank requirement. An action plan was also developed by FECO to drop the PFOS/PFOSF production close-down demonstration of Xiangshun and the action plan was well implemented. Xiangshun has been officially listed as a suspected contaminated land and supervised by government as per domestic regulation requirements on the management of potential contaminated sites. FECO and the Bank have confirmed that there were no outstanding environmental and social safeguard issues since Xiangshun subproject has been dropped on December 31, 2021.

Subprojects including Northeast Electric Group site and Baoxin site as closed-loop system demonstrations in electroplating industry, Haofeng site and Gaoping site as electro-plating industry park wastewater treatment



demonstration, production lines of Waysmos plant, Nenglin plant, Suolong plant and Langchao plant as the demonstration of the PFOS-free firefighting products as well as a 100m³ fire fighting test were identified under the Reduction of PFOS Use component. Both the Northeast Electric Group site and Baoxin site only conduct technical retrofitting to one chromium plating production line at existing plant to demonstrate the closed loop chrome plating process and eliminate the use of PFOS as chromium mist suppressant. Both Haofeng site and Gaoping site only upgrade the electroplating wastewater stream treatment facilities to remove PFOS from the electroplating wastewater. Waysmos plant, Nenglin plant, Suolong plant and Langchao plant are also small scale existing plants with coverage area ranging from thousands square meters to no more than 20,000 square meters to produce PFOS-free firefighting products. The 100m³ fire fighting test will use 100 m³ combustible liquid storage tanks to test the performance of 6-10 selected PFOS-free firefighting products at existing fire research and experiment base. These activities are all small scale and are all located in either industrial parks or economic and technological development zones. The potential environmental impacts from these activities including noise, waste gas, wastewater, industrial solid waste and hazardous waste, and OHS during retrofitting or construction phase and operation phase, as well as potential environmental risk of chemical leakage and fire. In consideration of the subprojects' contexts and scales and their locations not in environmentally sensitive areas, the negative environmental impact associated with these subprojects activities is considered limited, localized and short-termed. Hence, all these subprojects are classified as category B and an ESMP for each subproject is required to manage related environmental risks. The ESMPs were prepared following the ESMF by all these subprojects and describe the subprojects' background and environmental and social audit findings, assess the impacts, propose mitigation measures, clarify responsibilities for environmental and social management, environmental monitoring plan, capacity building programs, grievance redress mechanism as well as monitoring reporting mechanism to manage the environmental risks adequately.

The requirements in the ESMF and the PMP and ESMPs are well implemented with an exception of Xiangshun incident, and the field staff operating the pesticide for RIFA are well protected according to the mission field visit and project monitoring report. The implementation of Environmental Assessment (OP 4.01) are deemed as Satisfactory considering the incident of Xiangshun that has since been addressed and no additional incompliance occurred as well as the ESMF and ESMPs for the other subprojects implemented well. Implementation of Pest Management (OP 4.09) is deemed as Satisfactory. In general, the overall environmental performance of this project during implementation is considered satisfactory.

The proposed project restructuring will trigger no new safeguards policy, and the project EA category remains A. The new activities of the proposed restructuring are mainly research consulting services, which may have limited impact on the environment during sampling for laboratory analysis and potential downstream environmental and social implications. The ESMF has been updated by FECO to cover the new activities and to guide the screening and selection process for the new activities, and the requirements on integration of potential downstream environmental and social risks assessment into the ToRs of the TA activities and proposing mitigation measures as part of the TA outputs for addressing those E&S implications are included in the ESMF. The updated ESMF was disclosed at FECO website on Mar 10, 2023. The updated ESMF has been reviewed by the Bank team and considered satisfactory to Bank safeguards requirements.

Social

The project will have positive social benefits as it will reduce the negative health impacts associated with PFOS production by introducing non-PFOS alternatives. It will support closure of redundant facilities, including support for site closure associated with previous production of PFOS. Overall social negative impacts and risks foreseeable will be very limited.

It is expected that most of the project activities will be carried out within existing facilities, which are on existing public land in urban areas. The project in general has no need for additional land acquisition. However, some of the



future project enterprises might also need partial or full production line closure or relocation causing workers to be laid off, although previous experience shows that most workers can be reemployed within the same enterprise in the case of partial closure. Some enterprises that are currently located in residential areas may want to produce non-PFOS alternatives. However, in some provinces establishment of new chemical processes in facilities located in residential areas will not be allowed. Therefore, they would have to move to a new location which is usually expected to be an existing industrial park. Such relocation may cause some employees to lose job if they choose not to move to the new location with the enterprise.

The project has entered the implementation stage. At the time of updating this ISDS, there is only one participating enterprise – Hengxin- that involves land acquisition. Hengxin has acquired 2.36 ha of land. The land acquisition economically displaced 25 households, which did not involve physical displacement. Hengxin prepared a RAP following the ESMF, which was disclosed locally on September 17, 2019 and on the Bank website on September 25, 2019. The monitoring report (as of August 2020) indicates the land acquisition at Hengxin’s new site was completed and the compensation was paid in full to the affected persons. Relocation of Hengxin will not cause labor retrenchment because production capacity at the new site will be enlarged and more workers will be required. The latest progress monitoring submitted by FECO confirmed that no proposed sub-grant recipients had laid off labor due to the project activities.

As of the restructuring, the project social performance is deemed Satisfactory. The project implementation caused minor land acquisition, which was completed following the RAP, making upfront preparation for Hengxin relocation. FECO also extended a functioning grievance redress mechanism (GRM) from national PMO (FECO), provincial PMOs, and the participating enterprises. There were no outstanding complaints in the project.

As part of the updated ESMF, the social screening concludes that the newly proposed activities for restructuring will not trigger OP 4.10 and OP 4.12. The new activities would have minor concerns for OHS risks to the handlers for PFOS-containing wastes, which will be addressed in the specific ESMP during the implementation. The Bank team will closely monitor the social risks and impacts in connection with the newly proposed activities when the site-specific information is known.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area.

Environment

The pollutions and risks during operation as described above can potentially have long-term impacts if handled improperly, especially off-site disposal of chemicals and wastes. Most hazardous wastes come from residuals of production processes and sludge of wastewater treatment in facilities or industrial parks. The spent chemicals and fire-fighting foams constitute another source of hazardous wastes. Improper disposal could contaminate surface water, ground water and soil, enter into ecosystem with bio-accumulative effects in species and threaten human health eventually.

Social

In the case of closure or relocation of project enterprises, some employees of the enterprises may have difficulties in reemployment or restoring livelihoods. But the scale of such negative impacts can be minimized as much as possible. Up to now, the relocation led Hengxin to acquire about 2.36 ha land for the new site. The newly proposed activities for restructuring would have minor concerns about OHS risks to the handlers for PFOS-containing wastes.

3. Describe any potential alternatives (if relevant) considered to help avoid or minimize adverse impacts.



One potential pilot (Hengxin) needs to conduct alternative comparison. It was identified during project implementation as a PFOS producer wishing to convert to production of less toxic products in future. The alternative comparison requirements are included in the ESMF and will be applied to the potential pilot when the E&S instruments are prepared. However, Hengxin conversion of production facilities demonstration has been dropped from the project due to its management and financial difficulties.

Following the ESMF, the FECO, the provincial PMO, and the sub-grant recipients would screen and explore the alternatives with less social risks and impacts. There is one subproject (Hengxin) involving land acquisition. Moreover, the proposed subproject participants all committed to minimizing the impacts on job security for relevant workers. By the time of updating this ISDS, no proposed subproject had induced worker lay-off.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

Environment

The project is implemented by a central PMO (FECO) and two provincial PMOs (PPMOs). FECO has over 30 years of experience with international financing institutions, including the WB and GEF. It is familiar with the WB safeguard requirements after it has successfully implemented similar projects, such as the Phase-out of HCFCs Project and GEF Contaminated Site Management Project in recent years, most of them category A. Hubei and Guangdong PPMOs are both under their provincial Environmental Protection Bureau (EPB), thus experienced in managing environmental impacts though with less direct experience of the WB safeguard policies. FECO's staff in charge of safeguards has been stable, highly dedicated and supportive throughout the safeguard preparation. The two provincial PMOs have designated staff for safeguards to ensure the EMF implementation. Capacity building in environmental safeguard has been provided by the Bank team during preparation and will be continued throughout the project cycle.

The ESMF prescribes that all environmental safeguard documents required should be submitted to the PMOs for review in order to meet both the domestic and the WB requirements. The first subproject of each sector and all category A sub-projects should also be submitted to the WB for review. The ESMF also sets up supervision arrangements and specifies responsibilities of various stakeholders during implementation. The ESMF includes in its annexes the Terms of Reference for all safeguard instruments to be used in this project, i.e. EA, the Environmental Management Plan (EMP), Environmental Audit and Environmental Site Assessment.

An Environmental Audit was done for Hengxin Chemical Co. during project preparation, a potential pilot for enterprise converting to non-PFOSF production at a new site. However, following management and financial difficulties, Hengxin withdrew the PFOS/PFOSF production close-down demonstration from the project and will not apply the conversion of production facilities demonstration, hence the two Hengxin activities are both dropped from the project.

To date, Youshida was identified as the first PFOS and PFOSF production close-down enterprise and Hengxin was identified as the second one but dropped due to its withdrawn. An ESMP for each was prepared following the ESMF by Youshida and Hengxin which assesses the impacts, proposes mitigation measures, and establishes monitoring plan, capacity building programs, public consultation, grievance redress mechanism as well as reporting mechanism. Similar mitigation measures are proposed in each ESMP during the implementation of dismantling, such as: (a) the solid waste will be segregated for disposal (hazardous waste will be disposed by qualified contractor, dismantled equipment will be recycled where possible, and domestic waste will be transported to the designated disposal sites timely); (b) the domestic wastewater and the wastewater from the waste gas treatment equipment will be treated by the wastewater treatment station in each of both plants and further treated by the wastewater treatment plant



in the corresponding industrial park, and a small quantity of equipment flushing water will be transported to a qualified facility for treatment; (c) waste gas generated from equipment dismantling will be treated by the corresponding waste gas treatment facility in each of both plants, and equipment and vehicles will be timely maintained to ensure working conditions and to control the exhaust; (d) dismantling at night and vehicle honking nearby resident area will be prohibited to reduce the noise impact; (e) safety trainings and proper personal protective equipment will be provided to workers and safety supervision system will be adopted at site during dismantling to address OHS hazards; (f) chemicals or hazardous pollutants management and transportation plans will be arranged and emergency response measures proposed to manage the emergency environmental risks. An environmental investigation monitoring plan was established in each ESMP to monitor conventional pollutants and PFOS and PFOSF in groundwater and in soil after the completion of the dismantling. Each ESMP includes an institutional arrangement that defines the environmental management responsibilities, supervision and reporting duties.

To mitigate the environmental risks from subprojects including Northeast Electric Group site and Baoxin site as closed-loop system demonstrations in electro-plating industry, Haofeng site and Gaoping site as electro-plating industry park wastewater treatment demonstration, production lines of Waysmos plant, Nenglin plant, Suolong plant and Langchao plant as the demonstration of the PFOS-free firefighting products as well as a 100m³ fire fighting test under the Reduction of PFOS Use component, an ESMP was prepared following the ESMF to each of these subprojects and describe the project background and environmental and social audit findings, assess the impacts, propose mitigation measures, clarify responsibilities for environmental and social management, environmental monitoring plan, capacity building programs, grievance redress mechanism as well as monitoring reporting mechanism to manage the environmental risks adequately. The mitigation measures include disposing solid waste (including hazardous waste) by qualified vendors, treating the wastewater through on site wastewater treatment facilities or by the public wastewater treatment plants, treating the waste gas by appropriate waste gas treatment facility on site, adopting best practices and personal protective equipment to manage OHS risks and having environmental emergency response plan in place to mitigate emergency environmental risks.

To mitigate the environmental and social risks related to the activity of PFOS containing waste collection and disposal, the hazardous waste disposal vendors will be selected by adopting the following eligibility criteria: (1) hazardous waste operation permit for the relevant disposal facilities; (2) EIA for the hazardous disposal facilities and approved by authorities; (3) pollutant discharge permits for the relevant disposal facilities; (4) generally compliant with discharge standards with no major violation or environmental and social incidents; (5) land certificate. In addition, an audit to cover both environmental and social risks in connection with the proposed waste disposal facilities will be conducted by an external consultant hired by the client, FECO, before the vendor is selected and contracted. The typical social risks would include labor and working conditions (particularly OHS risks), community health and safety, among others. The requirement of the updated ESMF will be followed for the hazardous disposal vendor screening to address E&S risks. The requirements of the existing EIA and the auditing findings will be integrated into the future ESMP for the PFOS containing waste collection and disposal activities.

The proposed new activities for the restructuring are only consultancy activities (TA activities). FECO has revised ESMF to include these new TA activities. It is required in the ESMF that all the TA undertaking agencies/laboratories involving sampling and laboratory analysis should have relevant qualifications of the testing laboratory and staff as well as operation procedures, which should be included in the TORs of these TA activities. The updated ESMF also requires the potential E&S implications of TA activities shall be assessed and mitigated for addressing those E&S implications, which shall be included in the TORs and the TA outputs. The updated ESMF sets out guidelines and procedures to assess the environmental and social impacts, and contains measures and plans to reduce, mitigate



and avoid adverse impacts. The new subproject proposal will be screened for potential negative environmental impacts. The ESMF includes environmental due diligence for existing processing facilities, mitigation measures, monitoring, institutional arrangements, grievance-handling mechanisms and capacity building activities.

Social

To address the above social risks and impacts, the client-FECO has prepared a social safeguards instrument (an ESMF), which includes a Resettlement Policy Framework (RPF). The ESMF states that local Chinese labor laws and regulations, and World Bank safeguards policies should be followed to ensure appropriate compensation and livelihood restoration for affected people. In case of 20 or more employees are laid off in one time by a project enterprise, according to the Chinese government labor regulation, a full employee resettlement plan should be prepared by the enterprise and reported to the local labor authorities. The plan should be submitted to the Bank team for prior review before actual layoff of staff of the related enterprise. Those laying off less than 20 employees should follow the Chinese government labor regulations, and the employee resettlement plan which will also be subject to prior review by FECO and the Bank task team can be covered in the environment assessment report under Op 4.01.

A social screening will be done for every subproject to assess social impacts and risks. A comprehensive social assessment will be done for every subproject which has negative social impacts and risks. A social assessment report will be done as required accordingly through hiring experienced professionals.

A resettlement policy framework (RPF) has also been included in the ESMF to address future possible land acquisition and resettlement, although all the known project activities will be on existing public land and do not need additional acquisition. The RPF describes the overall legal framework, planning principles, procedures, compensation and rehabilitation approach, consultation and participation requirements, grievance redress mechanisms, organization and monitoring arrangements.

At the time of updating this ISDS, Hengxin has completed the land acquisition. Most of the affected (93%) land was forestry land and only 0.17 ha (7%) was used for subsistence farming. The affected households were paid with one-off cash compensation for the loss of land and land attachments according to the latest standards. The third-party monitoring report (August 2020) demonstrated that the affected persons were satisfied with the compensation and there were no outstanding complaints or court cases.

The updated ESMF concludes the proposed activities will not trigger OP 4.10 and OP 4.12. The proposed activities for disposing of the PFOS-containing waste would have minor OHS risks to waste handlers. The ESMF has set out the eligibility criteria and track record for selecting the eligible vendors for disposing of PFOS-containing waste. During the implementation, a specific ESMP will be prepared following the updated ESMF to mitigate the OHS risks.

The second updated ESMF concludes the newly proposed activities will not trigger OP 4.10 and OP 4.12. The proposed new activities for the restructuring are only consultancy activities (TA activities) and will not trigger new safeguards policies. According to the social and environment impacts screening in ESMF, no TA contract is to support the preparation of feasibility studies, technical designs or other activities directly linked to future investment project (whether or not funded by the Bank). Additionally, although the TA activities themselves may not have direct adverse environmental or social impacts, the outcomes of TA support may have some environmental and social implications going forward, entailing risks and potentially inducing adverse impacts. In addition, stakeholder participation and public information disclosure is to be conducted throughout the TA process.

The national level PMO-FECO has extensive experience in preparing and implementing World Bank financed



projects, including GEF projects previously, although provincial PMOs and project enterprises may have little experience in implementing World Bank projects. The Bank team and external social consulting team will provide ongoing training for PMOs and project enterprises. FECO has and will continue to provide training and guidance for local PMOs. Each PMO has delegated a staff to take charge of social safeguards management. The updated ESMF reflects the capacity of FECO and local PMOs and formulates corresponding training programs to address the social risks associated with new activities, such as COVID pandemic, OHS risks.

5. Identify the key stakeholders and describe the mechanism for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

Environment

Two rounds of local disclosure of the ESMF have been conducted as per the Bank requirement for category A project. The first round was conducted during March 2016 at the official websites of the central PMO and several sector associations. The second round was during July 2016 after the complete draft EMSF with all its annexes was ready. After each round of disclosure, public consultations have been carried out through meetings and talks with representatives of interested enterprises, branch associations of sectors involved, government agencies concerned at central and provincial level, local PMOs, as well as academia and experts. For Hengxin Company, the only pilot identified prior to appraisal, its environmental audit report has been disclosed locally in the city two rounds in June and August 2016 respectively, followed by consultation with local people to be potentially affected. The concerns and suggestions from all public consultations have been incorporated in the finalization of the ESMF and the environmental audit report.

FECO, the participating enterprises, provincial PMOs and the environmental consultants carried out comprehensive stakeholder engagement during the process of preparing specific subprojects. The subprojects' ESMPs considered the stakeholders' feedback to refine the project designs and avoid and mitigate the environmental risks. For subprojects including Youshida and Hengxin (dropped) as the production close-down demonstration, Northeast Electric Group site and Baoxin site as closed-loop system demonstration in electro-plating industry, Haofeng site and Gaoping site as electro-plating industry park wastewater treatment demonstration, production lines of Waysmos plant, Nenglin plant, Suolong plant and Langchao plant as the demonstration of the PFOS-free firefighting products as well as a 100m³ fire fighting test, stakeholders are identified, all including: PMO, relevant authorities, contractors, surrounding people and units, etc. During the ESMPs preparation, stakeholders were consulted to collect opinions and suggestions. The opinions and suggestions were analyzed and incorporated into all the ESMPs for the subprojects. The Youshida production close-down ESMP has been disclosed on April 27, 2021 at Youshida's website and the English version has been disclosed at the World Bank website on April 29, 2021. The Hengxin production close-down ESMP has been disclosed on May 25, 2021 at Hengxin's website and the English version has been disclosed at the World Bank website on May 27, 2021. The Northeast Electric Group ESMP has been disclosed on October 12, 2021 at Northeast Electric Group's website and the English version has been disclosed at the World Bank website on October 17, 2021. The Baoxin ESMP has been disclosed on November 5, 2021 at Baoxin's website and the English version has been disclosed at the World Bank website on November 5, 2021. The Haofeng ESMP has been disclosed on October 24, 2022 at Haofeng's website and the English version has been disclosed at the World Bank website on November 17, 2022. The Gaoping ESMP has been disclosed on October 19, 2021 at Gaoping's website and the English version has been disclosed at the World Bank website on Mar 6, 2022. The Waysmos ESMP has been disclosed on December 1, 2021 at Waysmos's website and the English version has been disclosed at the World Bank website on December 1, 2021. The Nenglin ESMP has been disclosed on January 13, 2022 at Nenglin's website and the English version has been disclosed at the World Bank website on January 13, 2022. The Suolong ESMP has been disclosed on January 24, 2022 at Suolong's website and the English version has been disclosed at the World Bank website on January 24, 2022. The Langchao ESMP has been disclosed on January 5, 2022 at



Langchao's website and the English version has been disclosed at the World Bank website on January 5, 2022. The 100m³ fire fighting test ESMP has been disclosed on October 10, 2022 at CCCFPFOS's website and the English version has been disclosed at the World Bank website on October 19, 2022.

For the project restructuring, stakeholders including PMO, relevant authorities, contactors, institutes, industrial association, relevant enterprises, scientific research institutions, universities and affected people were identified and consulted to collect opinions and suggestions via workshops and online conference communications. Overall, the stakeholders support the proposed activities and requested to following Chinese regulatory requirements. The opinions and suggestions were analyzed and incorporated into the environmental and social mitigation measures. The updated ESMF for the restructuring activities were disclosed on Mar 10, 2023 at FECO website; while the English version of ESMF will be disclosed at the World Bank website as well.

Social

The project stakeholders would include the affected parties, other interested parties that may have an interest in and/or influence on the project, and vulnerable groups. The affected parties include the families affected by land acquisition, the workers for participating enterprises, the local communities close to the participating enterprises, among others. Other interested parties would be the responsible government authorities, NGOs, local media, sectoral institutes/associations, etc. The participating enterprises, provincial PMOs and the social consultants carried out comprehensive stakeholder engagement during the process of preparing specific subprojects. The social documents (e.g., RAP, the social screening reports) considered the stakeholders' feedback to refine the project designs and avoid and mitigate the social risks.

The RPF in the environmental and social management framework, in both Chinese and English, was submitted to the Bank on July 30, 2016 and was deemed satisfactory to the Bank. The document has been locally disclosed through the internet on August 30, 2016 and the Bank InfoShop on September 7, 2016. The Hengxin RAP was deemed satisfactory to the World Bank, and has been disclosed on September 18, 2019, through the local internet. The final Hengxin RAP was disclosed on the World Bank website on September 25, 2019.

For the first restructuring, FECO carried out a robust stakeholder engagement to screen the relevant environmental and social risks and impacts. The updated ESMF was disclosed locally on FECO's website on June 2, 2021.

For the second restructuring, a robust stakeholder engagement to screen the relevant environmental and social risks and impacts was conducted. The revised ESMF was disclosed at FECO's website on Mar 10, 2023 and the English version will be disclosed at World Bank's website upon clearance.

Grievance Redress. A mechanism has been established for grievance redress. The Task Team highly recognized FECO's efforts to put in place a comprehensive grievance redress mechanism extending from FECO, PPMO and participating enterprises. Project level GRMs have now been posted on the websites of FECO and the two PPMOs. During project implementation, all grievances (if any) will be properly addressed and documented in alignment with GRM and reported to the Bank. Grievances will be filed in writing. Starting at enterprise level, the grievances can be elevated to PPMO or FECO if affected people are not satisfied with the resolution at the lower level. The affected people could also file their cases in court if they are not satisfied with the resolution by the project authority. All grievances and their resolution will be recorded and be feedbacked to the affected people on a timely basis. As of newly restructuring, no significant grievances or complaints were received by FECO, provincial PMOs, or the participating enterprises as reported by FECO.



B. DISCLOSURE REQUIREMENTS

Environmental Assessment/Audit/Management Plan/Other

Date of receipt by the Bank

13-Mar-2023

Date of submission for disclosure

27-Mar-2023

For Category 'A' projects, date of distributing the Executive Summary of the EA to the Executive Directors

18-Jan-2017

"In country" Disclosure

Country

China

Date of Disclosure

10-Mar-2023

Comments

Resettlement Action Plan/Framework Policy Process

Date of receipt by the Bank

30-Jul-2016

Date of submission for disclosure

07-Sep-2016

"In country" Disclosure

Country

China

Date of Disclosure

29-Jul-2016

Comments

Pest Management Plan

Was the document disclosed prior to appraisal?

Yes

Date of receipt by the Bank

03-Jun-2021

Date of submission for disclosure

17-Jun-2021



“In country” Disclosure

Country

Date of Disclosure

China

02-Jun-2021

Comments

C. COMPLIANCE MONITORING INDICATORS AT THE CORPORATE LEVEL

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?	Yes
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes

OP 4.09 - Pest Management

Does the EA adequately address the pest management issues?	Yes
Is a separate PMP required?	Yes
If yes, has the PMP been reviewed and approved by a safeguards specialist or PM? Are PMP requirements included in project design? If yes, does the project team include a Pest Management Specialist?	Yes

OP/BP 4.12 - Involuntary Resettlement

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?	Yes
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes
Is physical displacement/relocation expected?	TBD
Is economic displacement expected? (loss of assets or access to assets that leads to loss of income sources or other means of livelihoods)	TBD



The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank for disclosure?

Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?

Yes

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?

Yes

Have costs related to safeguard policy measures been included in the project cost?

Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?

Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?

Yes

III. APPROVALS

Task Team Leader(s)

Qing Wang

Approved By

Safeguards Advisor

Practice Manager/Manager

Note to Task Teams: End of system generated content