

GEF Upgrading of China SHP Capacity Project

(GEF Project ID: 6919)

Mid-term Performance Evaluation Report

Performance Evaluation Team of Upgrading of China SHP Capacity Project

January 2020

Results of Mid-term Performance Evaluation

Evaluation criteria	Weight (%)	Score	Weighted average score	Performance rating
		(hundred-mark system)		
Relevance	20.00	96.5	19.3	Highly relevant
Efficiency	50.00	89.43	44.72	Highly efficient
Effectiveness	20.00	88.65	17.73	Satisfactory
Sustainability	10.00	93.88	9.39	Highly sustainable
Comprehensive performance	100.00	91.13	91.13	Smoothly implemented

There is no conflict of interest between the project performance evaluation team and the evaluated project

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Exchange Rate

Currency unit-RMB yuan

PPG Stage	Performance Evaluation Stage
December 2015	September 2019
RMB 1 = US \$0.156	RMB 1 = US \$0.139
US \$1 = 6.394 RMB	US \$1 = 7.178 RMB

Abbreviation

GEF	Global Environment Facility
Project	Upgrading of China SHP Capacity Project (GEF Project ID: 6919)
<i>Guidelines</i>	<i>Guidelines for Performance Evaluation of International Financial Institution Loan Projects in China</i>
UNIDO	United Nations Industrial Development Organization
CPMO	Central Project Management Office
PPMO	Provincial Project Management Office

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Summary of Mid-term Performance Evaluation Report

I. Project profile

In order to promote green sustainable development of small hydropower industry in our country, mainly focusing on solving the small hydropower's problems of river ecological restoration, safety production management and improving the level of automation control, in February 2014, the Ministry of Water Resources and UNIDO work in cooperation to start the application of the GEF project on "Upgrading China SHP Capacity" (hereinafter referred to as the "project"). The GEF Governing Council approved the project concept note in October 2014 and formally approved the project proposal/CEO Endorsement document in June 2016. The project takes for five years, with the United Nations industrial development organization (UNIDO) designated as the international executive agency, the Ministry of Finance (MOF) as the domestic counterpart unit, Ministry of Water Resources (MWR) as domestic executive agency, International Center on Small Hydro Power (ICSHP) as domestic implementing agency, and completed by relevant water conservancy departments of eight pilot provinces (autonomous regions and municipalities directly under the central government) and 23 pilot plant owners together. The project aims to leverage the advanced concept and funding of the GEF. Relying on the implementation of the rural hydropower upgrading project under the "13th Five-Year Plan", further increase the added value of the small hydropower renovation project, promote the establishment of green small hydropower development policy, cultivate green small hydropower stations, construct the safety production standard demonstration power plant, introduce the advanced equipment and technologies and strengthen the capacity building on small hydropower capacity, etc.

The project consists of the following four components: (1) Policy and Institutional Framework: strengthening the policy and regulatory framework to effectively promote and support green SHP upgrading by the development of guidance for green SHP construction, technical guidelines, a Ministerial Standard and regulations on green SHP; (2) Technology Demonstration: demonstrating technical feasibility and commercial viability of 23 green and safe upgraded SHPs at different capacities demonstrating a variety of environmental measures and safe production measures; (3) Capacity Building and Knowledge Base: delivering training programme to

government officials, project owners, developers, managers, technicians and design institutes, organizing study tours and seminars, strengthening publicity, and promoting the establishment of green SHP and safe production standardization; (4) project monitoring and evaluation.

In May 2017, UNIDO signed the *Project Implementation Agreement and Project Execution Agreement* with MOF and MWR respectively; in July 2017, UNIDO signed the *Project Agreement* with ICSHP; and in May 2018, MOF signed the *Grant Implementation Agreement* with MWR. The project implementation period is five years (from May 2017 to May 2022), and the grant closing date is May 8, 2022. The total planned investment for the project is US\$83,503,448, of which grants from GEF is US \$8.925 million.

In 2017, the National Project Coordination Committee (NPCC) was established, composed of representatives from MWR, MOF, UNIDO, ICSHP and the project local provincial water conservancy departments, being responsible for the project's research, decision-making, organization and coordination of major items. ICSHP set up a central project management office to guide the preliminary preparations, management and implementation of the project; it also set up provincial project management offices in eight pilot provinces to charge organization, implementation, management and monitoring of local projects; moreover, it formulated and issued the *GEF Project Management Measures* and *GEF Project Financial Management Measures* and so on. During the implementation of the project, relevant government departments, project management offices at all levels and project implementation units have strictly implemented the relevant provisions of the *Project Implementation Agreement*, *Project Executive Agreement*, *Project Agreement* and *Grant Implementation Agreement*. Up to now, major activities of GEF project are continuously progressed as planned.

II. Performance Evaluation Overview

The evaluation team made an objective and fair evaluation of the project's input, activity, output and effect in accordance with the requirements of *Guidelines for Performance Evaluation of International Financial Institution Loan Projects in China*

(hereinafter referred to as Guidelines). The evaluation period was from June 2016 when GEF Council approved the project proposals to September 2019 when the performance evaluation took place. From June 2016 to September 2019, the project performance evaluation team evaluated the relevance, efficiency, effectiveness, sustainability and comprehensive performance of the project in accordance with the requirements of Guidelines. The design of the project performance evaluation is, under the performance evaluation framework, based on the previous literature review, the evaluation team respectively identified the evidence and its resources involved around the critical issue evaluation and the evaluation index of the framework. After comparing the advantages and disadvantages of different evidence collection methods, the evaluation team adopted methods including case studies, seminars, and internet searching and on-the-spot investigation to collect and verify the evidence. According to the evaluation rules and project comprehensive performance rating methods given by the Guidelines, the evaluation team carefully rated the project, and formed the evaluation conclusions, lessons learned and countermeasure suggestions. The performance evaluation will summarize the lessons learned from the use of GEF grants, improve the weaknesses in project implementation, and improve management level and execution performance of ongoing projects and grants from international financial organizations.

III. Performance Evaluation Conclusion

The overall score of the project performance evaluation is 91.13, and the project performance rating is "smoothly implemented".

Relevance: The project is rated as "highly relevant".

During the project evaluation, the project objectives and content design are highly consistent with the development strategy and policy priorities of China's small hydropower industry, and the project output design closely revolves around the problems faced by the sustainable development of small hydropower industry in China. The project target beneficiary group and its primary needs are identified and positioned appropriately.

Efficiency: The project is rated as "highly efficient".

The project started timely, and the whole project is being implemented as planned. Although the GEF grants are slightly delayed due to the poor quality of the withdrawal reimbursement materials (progress report) submitted by the project owners and other reasons, the domestic supporting funds which accounted for a relatively high proportion (89.31%) of the total funds are sufficiently and timely being in place; so the overall use of funds is good. Stable institution, effective management system, risk control and communication mechanism has been established for project implementation. The input and output of the project are consistent with cost effectiveness principle, and the content design and implementation mechanism are innovative to some extent.

Effectiveness: The project is rated as "satisfactory".

The overall effect of this project is good. Each index has achieved the stage performance target well. The actual beneficiary of the project is consistent with the design goal, and the actual beneficiaries cover all planned groups.

Sustainability: The project is rated as "highly sustainable".

The project finance has high sustainability. The project fund can fully meet the needs of the follow-up implementation of the project. All the current economical social environment, project policies, project implementation institutions and project personnel can guarantee the sustainable implementation of the project.

IV. Lessons Learned & Suggestions

(I) Successful Experience

1. Leaders attach great importance and the management institution is sound and effective.

Strong support from leaders at all levels and sound and effective management institution are the prerequisites for the smooth implementation of the project. Under the leadership of the NPCC, composed of the relevant responsible personnel from Rural Water and Hydropower Department of MWR, Department of International Cooperation, Science and Technology of MWR, Department of International Financial Cooperation of MOF, Department of Economic Construction of MOF, Department of Energy and Climate Change of UNIDO, ICSHP, provincial water

conservancy administrative departments of 8 pilot provinces, the central project management office closely cooperates and smoothly communicates with provincial project management offices to ensure the smooth implementation of the project.

2. A sound internal management system is an important guarantee for the smooth implementation of the project.

According to the relevant requirements, *GEF Project Management Measures* and the *GEF Project Financial Management Measures* were formulated and issued. The project was carried out based on these measures, which effectively strengthened and promoted the project management and progress.

3. A number of technicians and administrative staffs were trained through the implementation of international project.

This project has, for each project unit, trained a group of management personnel, who have participated in the whole foreign-funded project. During the implementation of the project, the Central Project Management Office organized targeted training to help each project unit get familiar with the whole implementation process of the project, understand the concepts and rules of international projects, and master project management methods. Through training and learning, the overall level of all teams participating in the project, including relevant government departments, project implementation units and design institutes, has been improved to ensure the smooth implementation of the project.

(II) Existing Problems

1. The pilot of project innovation model needs to be explored and run-in constantly. To strengthen the implementation of the project, UNIDO has selected the GEF project in China as the pilot project of innovative model and ICSHP was authorized to login UNIDO SAP system to directly manage the project implementation. However, in practice, it was found that in the inception phase the authority required for project execution are limited especially for expert recruitment, financial budget, etc, which prevented the timely advancing the bidding work of related activities and affected the project progress to a certain extent. In addition, the connection and login to SAP from China has undergone uncertainty from time to time.

2. Insufficient withdrawal reimbursement documentation level.

The payment reimbursement documents prepared by some pilot project owners are of poor quality and need to be supplemented, modified and reviewed again and again, which resulted in the delay of GEF grant delivery.

3. Insufficient publicity for the project. The GEF project is a model of cooperation between China and UNIDO in the field of small hydropower.

The implementation of the project will drive the sustainable development of small hydropower in China, sharing China's good practices and experience to the global small hydropower development. However, comparing the publicity of GEF project by the CPMO, the publicity in each pilot province is relatively less.

4. Some local supporting policies for green SHP development need to be strengthened. With the exception of Zhejiang Province and Fujian Province, other provinces implementing the GEF project haven't issued relevant supporting policies for the development of green SHP yet.

(III) Countermeasure & Suggestions

1. Strengthen the communication with UNIDO to ensure that the project innovation mode plays its maximum role.

As for the problems happened in the application of the system, it still needs to explore and run-in and also need to strengthen the communication with the headquarters of UNIDO to obtain necessary cooperation for the purpose of ensuring that the innovative mode of projects plays its maximum role.

2. Strengthen training on withdrawal reimbursement and ensure the grants are timely in place.

Keep training the relevant personnel, strengthen the supervision and inspection of the project owners. It is suggested to carry out specific training on GEF project withdrawal reimbursement for management personnel of project execution units and contractors, require the project owners to provide progress reports meeting payment requirements on time, and ensure the high efficiency of reimbursement process for timely delivery of GEF grants.

3. Summarize the highlights of value-added upgrading, increase the intensity of project publicity.

It is suggested that in the later implementation process of the project, summarize the project experience more often, and promote the advanced project practices to other domestic projects through vigorous promotion and presentation of the GEF project, such as planned seminars, media introduction, and subject research.

4. Encourage each province to release the policies promoting the development of green SHP.

Encourage each province to actively sort the existing or planned preferential policies for small hydropower. Strive to form some long-term mechanism after the GEF project completion, such as the establishment of green ecological compensation mechanism for small hydropower plants, financial incentive system for green small hydropower establishment, and tax refund system for green SHP plants, to promote the sustainable development of small hydropower.

1. Project basic information

I. Project profile	
Project title	Chinese title: 全球环境基金中国小水电增效扩容改造增值项目 English title: Upgrading of China SHP Capacity Project
Focal area	Climate Change
Investment amount	Total investment amount: US \$ 83,503,448 GEF project financing: US \$8.925 million Co-financing: US \$74,578,448
Date of CEO Endorsement/Approval	June 2016
Date of signing Project Implementation Agreement	May 2017
Project planned implementation period	May 2017 to May 2022
Project objective	The project aims to leverage the advanced concept and funding of the GEF. Relying on the implementation of the rural hydropower upgrading project under the "13th Five-Year Plan", further increase the added value of the small hydropower renovation project, promote the establishment of green small hydropower development policy, cultivate green small hydropower stations, construct the safety production standard demonstration power plant, introduce the advanced equipment and technology and strengthen the capacity building on small hydropower capacity, etc.
Project components	(1) Policy and Institutional Framework: strengthening the policy and regulatory framework to effectively promote and support green SHP upgrading by the development of guidance for green SHP construction, technical guidelines, a Ministerial Standard and regulations on green SHP; (2) Technology Demonstration: demonstrating technical feasibility and commercial viability of 23 green and safe upgraded SHPs at different capacities demonstrating a variety of environmental measures and safe production measures; (3) Capacity Building and Knowledge Base: delivering training programmes to government officials, project owners, developers, managers, technicians and design institutes, organizing study tours and seminars, strengthening publicity, and promoting the establishment of green SHP and safe production standardization; (4) Project monitoring and evaluation.
Location of pilot projects	Zhejiang Province: Jinyun County, Qujiang District of Quzhou City Fujian Province: Lianjiang County, Taining County, Pucheng County Hubei Province: Xingshan County, Yunyang District of Shiyan City, Tongshan County Guangdong Province: Ruyuan County Guangxi Zhuang Autonomous Region: Jingxi City

	<p>Chongqing: Qijiang District, Beibei District, Tongliang District, Yunyang County, Wusheng County</p> <p>Yunnan Province: Luxi County, Shiping County, Tonghai County</p> <p>Shaanxi Province: Taibai County, Ziyang County</p>
Project management organizations	National Project Coordination Committee, Central Project Management Office, Provincial Project Management Offices (the above eight provinces where the project locates)
Project stakeholders	<p>United Nations Industrial Development Organization (UNIDO): international executing agency of GEF project, which is fully responsible for project supervision, evaluation and execution.</p> <p>Ministry of Finance: domestic counterpart of the GEF project, which manages domestic investment of the GEF Project.</p> <p>Ministry of Water Resources: domestic executing agency for GEF projects, which manages project activities.</p> <p>Central Project Management Office: located in International Center on Small Hydro Power, which is responsible for implementing the decisions of the Project Coordination Committee, organizing, coordinating, guiding and managing the implementation of the project.</p> <p>Project management offices of Zhejiang, Fujian, Hubei, Guangdong, Guangxi, Chongqing, Yunnan, and Shaanxi (provinces, autonomous regions, and municipalities directly under the Central Government): responsible for the organization, implementation, coordination, management, supervision and evaluation of pilot projects in their provinces (autonomous regions and municipalities).</p> <p>Panxi Cascades II, III&IV Hydropower Plants, Qingshuitan Hydropower Plant, Gaofang Cascade II Hydropower Plant, Tangban Hydropower Plant, Jiaosan/Tantou Hydropower Plant, Yangdaohe Cascade Project, Zhoujialiang Hydropower Plant, Jiugonghe Hydropower Plant, Guanxi Hydropower Plant, Sandieling & Dongpai Hydropower Plant, Aibu Cascade II&III Hydropower Plants, Majing Hydropower Plant, Xiaokeng Hydropower Plant, Gaokeng Hydropower Plant, Taiping Hydropower Plant, Jingtanfeng & Huangyan Hydropower Plants, Maoyandong Cascade II Hydropower Plant, Mabozi Hydropower Plant, Chahe Hydropower Plant, Baiyunxia Hydropower Plant, Xiakou Hydropower Plant, Xinpinyang Hydropower Plant: The direct beneficiaries of the project is responsible for providing supporting funds for the project, which are used as supplementary funds for the GEF grant to upgrade and renovate small hydropower stations to complete the project goals.</p> <p>Communities where each pilot power stations are located: indirect beneficiaries of the project.</p>

2. Overview of the project performance evaluation process

2.1. Purpose of evaluation

(1) According to the requirements of the *Guidelines for Performance Evaluation of International Financial Institution Loan Projects in China*, conduct an objective and fair evaluation of the relevance, efficiency, effectiveness, sustainability and comprehensive performance of this project.

(2) Through performance evaluation, find out existing problems when implementing this project, and put forward specific suggestions to improve the implementation of

this project.

(3) Through performance evaluation, summarize the experience and practices of the implementation of this project, so as to provide reference for the subsequent implementation of this project and the development of similar projects.

(4) Further enrich and improve the performance evaluation method system of grant projects of international financial organizations and promote the establishment of performance evaluation systems.

2.2. Performance evaluation framework and performance rating methods

2.2.1 Performance evaluation framework

The performance evaluation framework of this project includes evaluation criteria, key issues, primary indicators, secondary indicators, evaluation evidence, evidence sources, evidence collection methods, etc. (see Annex x for details).

2.2.2 Performance rating methods

The hundred-mark system was adopted for this performance evaluation, and the performance evaluation was implemented in the following four steps.

(1) Used established analysis methods and scoring standards to score various evaluation indicators based on the collected evidence;

(2) Performed a weighted average of each index score under each key evaluation question, and then calculated the score of each key evaluation question based on such weighted averages;

(3) Performed a weighted average of the key evaluation question scores under each evaluation criterion, and then calculated the final evaluation score of each evaluation criterion, and determined the performance levels of the four criteria accordingly;

(4) According to the weight setting of the four evaluation criteria, the evaluation scores of the four criteria were weighted and averaged, the comprehensive performance score of the project was calculated, and the project performance level was determined accordingly.

2.3. Evaluation design and implementation

2.3.1 Evaluation design

This performance evaluation was carried out based on the *Guidelines* issued by the Ministry of Finance. The specific design process is carried out in three stages, namely preliminary preparation, performance evaluation framework design, and performance evaluation implementation plan design.

(1) Preliminary preparation

At this stage, the project evaluation team first communicated with the project management and implementation departments to know the overall situation of the project; secondly, the evaluation team collected and carefully studied relevant documents and materials, including project proposals, project agreements, project progress reports and scanned copies of relevant approval documents and other case files, to fully understand the project's implementation background, project objectives, project content, implementation process and other information, as well as relevant requirements for performance evaluation.

(2) Performance evaluation framework design

At this stage, the evaluation team, based on the *Guidelines* and the requirements of key evaluation issues, fully considered the characteristics of the project itself, and constructed a performance evaluation framework including content of criteria, key issues, evaluation indicators, evaluation basis, evidence sources and evidence collection methods.

(3) Performance evaluation implementation plan design

At this stage, the project team subdivided the evaluation tasks on the basis of the preliminary work, and made specific arrangements for each evaluation activity, including: evaluation task decomposition, work division of evaluation team, survey time arrangement, face-to-face interview design, symposium and design of question list for field survey, etc., to form an evaluation implementation plan.

2.3.2 Evaluation implementation

According to the evaluation implementation plan, the evaluation team conducted the collection, screening and analysis of evidence, and evaluated the performance evaluation indicators on such basis. The implementation of performance evaluation mainly included three parts: evidence collection, analysis and evaluation, and

conclusions and recommendations.

(1) Evidence collection

The project evaluation team used the following methods to collect evidence:

1) Case studies. The project evaluation team carried out in-depth research, comparison and analysis of project documents, including *Project Implementation Agreement*, *Project Execution Agreement*, *Project Contract Agreement*, *Grant Implementation Agreement*, *Project Proposal*, *Progress Report*, etc., as well as learnt information of the project and collected the evidence materials needed for performance evaluation.

2) Seminars. Organized and coordinated by the Project Management Office, the project evaluation team held seminars with stakeholders to know the situation that was not reflected in the project archives but related to the project performance.

3) On-site research. The project evaluation team conducted on-site research on the project to know the implementation conditions of the project, listened to the opinions of stakeholders, and verified project-related information.

4) Questionnaires. The project evaluation team designed questionnaires for project units and stakeholders to collect information on project operation and benefits.

5) Internet search. Through Internet search, the project evaluation team collected evidence and information on safety and green development status of China's small hydropower, and relevant policies of the central government, local governments, and industries.

After collecting a large amount of evidence, the project evaluation team compared and cross-validated the evidence from different sources, eliminated wrong information, and finally determined the evidence that could be used to answer key questions and response indicators.

(2) Analysis and evaluation

With a large amount of actual evidence as the support, the project evaluation team mainly adopted the mutation analysis, and analyzed the collated evidence and the evaluation index one-to-one, and compared the actual mutation of the index with the

expected mutation to obtain the analysis results, thereby evaluating the implementation performance of the project.

(3) Conclusions and recommendations

According to the results of performance evaluation, conclusions and suggestions were drawn, including evaluation conclusion, experience and lessons, and countermeasure suggestions.

The evaluation conclusion includes two parts: the first is the comprehensive performance level of the project, and the second is the overall evaluation of the project performance in terms of relevance, efficiency, effectiveness, and sustainability.

Through the performance evaluation, the experience and lessons that may help to carry out other similar projects or improve the effectiveness of the evaluated project are summarized, including the best practices and outstanding issues in the preparation, design and implementation of the project, and their impact on project performance.

Combined with the evaluation conclusions and lessons learned, for the problems existing in the evaluated projects, the project team shall focus on improving the performance of the projects under construction and the project approval, design and management of future projects, put forward countermeasures and suggestions for project design, project management improvement, project performance improvement, government decision-making optimization, etc.

Finally, the final evaluation report was completed after communication with stakeholders on the first draft.

3. Performance Analysis

3.1. Relevance

The evaluation of relevance mainly focuses on the conformity between the project objectives and the development strategy and policy priorities of China's SHP industry, whether the project output design closely revolves around the problems faced by the sustainable development of SHP industry in China, whether the project targeted

beneficiaries and their primary needs are identified appropriately. According to the performance evaluation framework and index scoring and weight setting criteria, the relevance score of the project performance evaluation is 96.5, and the project is rated as “highly relevant”.

Table 3.1 Project Relevance Evaluation Index Development and Evaluation Results

Criteria (Weight)	Performance Rating	Weighted Score	Evaluation Score	Key Evaluation Issues	Primary Indicators	Secondary Indicators	Score
Relevance (20%)	Highly relevant	19.3	96.5	1.1 Whether the project objectives and content design conform to the current development strategy of the state, industry and region, and effectively solve practical problems (50%)	1.1.1 The conformity between the project objectives and the development strategy and policy priorities of China’s SHP industry (50%)	/	98
					1.1.2 Whether the project output design revolves around the problems faced by the sustainable development of SHP industry in China (50%)	/	98
				1.2 Whether the project targeted beneficiaries and their primary needs are identified appropriately (50%)	1.2.1 Whether the project targeted beneficiaries is positioned appropriately (50%)	/	95
					1.2.2 Whether the primary needs are identified appropriately (50%)	/	95

3.1.1 Whether the project objectives and content design conform to the current development strategy of the state, industry and region, and effectively solve practical problems.

In response to this key evaluation issue, two primary indicators are adopted for

evaluation, namely, “The conformity between the project objectives and the development strategy and policy priorities of China’s SHP industry” and “Whether the project output design revolves around the problems faced by the sustainable development of SHP industry in China”.

3.1.1.1 The conformity between the project objectives and the development strategy and policy priorities of China’s SHP industry

The project aims to leverage the advanced concept and grant of GEF, further increase the added value of the SHP renovation project by relying on the implementation of the rural hydropower upgrading project under the “13th Five-Year Plan”, focus on solving problems of SHP in river ecological restoration, safe production management and improvement of automation control level, so as to promote the healthy and sustainable development of China’s SHP industry, achieve considerable global environmental benefits, and accumulate experience for global SHP development.

In 2012, the *Opinions on the Development and Planning of Hydropower Resources for Small and Medium-sized Rivers* issued, by the Ministry of Water Resources, took the “four hydropower” as the guiding ideology, the benefits to people’s livelihood and ecological protection as the basic planning principles, and the study of environmental protection measures as an important content of planning.

In 2013, the *Opinions on Accelerating the Construction of Water Ecological Civilization* issued, by the Ministry of Water Resources, included the construction of green SHP in the construction of water ecosystem protection and restoration.

In the Outline of the 13th Five-Year Plan for Rural Hydropower Development formulated in 2015, vigorously promoting the construction of four hydropower projects was still taken as the overall requirements. It requires to strengthen the construction of rural hydropower ecological civilization as well as the ecological environmental protection in the whole process of planning, design, construction and operation of rural hydropower, advance the development of green SHP, promote the experience of green SHP construction in the treatment of reduced water reach and the supervision of minimum discharge, guide the rural hydropower industry to better implement the requirements for ecological environmental protection, and encourage

to explore supporting policies suitable for green SHP construction in light of the local conditions.

The No. 1 Document issued by the Central Government in 2016 explicitly called for “developing green SHP”.

In 2017, Vice Minister Lu Guihua proposed at the National Green SHP Construction Site Work Conference that for the development of green SHP in the new era, we should accurately grasp the people’s new expectations for a better life in the new era, and deeply understand the green development concept of “Lucid waters and lush mountains are invaluable assets.”

In 2019, Vice Minister Tian Xuebin pointed out in Field Conference on Green Transformation of Rural Hydropower that to promote the green development of rural hydropower in the new era, we should integrate thoughts and actions into Xi Jinping’s thoughts on ecological civilization, strive to address the adverse impact of SHP on ecological environment, and provide more quality water ecological products to meet people’s ever-growing needs for a better life and a beautiful ecological environment. Subsequently, Vice Minister Tian Xuebin proposed at the Rural Water Conservancy and Hydropower Work Conference to continue to promote the SHP capacity and green transformation.

The evaluation team believes that the project objective is in line with the development strategy and policy of China’s SHP industry, and the score of this index is 98.

3.1.1.2 Whether the project output design revolves around the problems faced by the sustainable development of SHP industry in China.

The project will promote the establishment of a sustainable green SHP policy and system framework, restore existing SHP plants, improve the green SHP construction and safety standardization management level, build a knowledge platform for green SHP and safe production management, strengthen capacity building and project monitoring and evaluation.

Efforts will be made for the project to summarize advanced international experience in the environment and management of SHP, formulate green SHP construction requirements that adapt to China's SHP reality, promote the establishment of green SHP incentive policies and mechanisms, and establish a policy framework for green SHP development in China.

It is planned to complete the value-added projects in the construction of green SHP and safe production standardization for 23 power plants with efficiency improvement and capacity expansion, build a batch of green SHP plants, guide and drive other power plants to consciously protect the ecological environment, build a batch of SHP plants with safe production standardization, implement standardized management, optimize power plant operation scheduling and automated management, and continuously improve the management level.

The project will ultimately reduce greenhouse gas emissions through the upgrade and renovation of existing SHP plants in China, promote the application and promotion of low-emission greenhouse gas technologies and practices in developing countries, and achieve global environmental benefits.

Visibly, the project output design closely revolves around the problems faced by the sustainable development of SHP industry in China, and the score of this index is 98.

3.1.2 Whether the project targeted beneficiaries and their primary needs are identified and positioned appropriately.

In response to this key evaluation issue, two primary indicators are adopted for evaluation, namely, "Whether the project targeted beneficiaries is positioned appropriately" and "Whether the primary needs of the project targeted beneficiaries are identified appropriately".

3.1.2.1 Whether the project targeted beneficiaries is positioned appropriately.

Criteria for selecting provinces of pilot plants: Provinces voluntarily apply for pilot provinces of GEF project; The pilot provinces attach importance to SHP transformation work, have a sound management organization, implement management responsibilities, have the management and technical capabilities to

complete the value-added content of GEF project, and can effectively organize project implementation; The pilot provinces have relatively abundant SHP resources, with a large number and diverse types of projects available for selection; The pilot provinces have a good policy environment for SHP development, and are expected to introduce incentive policies such as green SHP prices and financial subsidies, with the support of the GEF project.

Criteria for selecting sites of pilot plants: The dam/reservoir capacity should be 15 meters or less. If the dam height is between 5-15 meters, the reservoir capacity should be less than 3 million cubic meters; The run-off type plant-diversion type, a small reservoir with daily or weekly regulation, for which reservoir storage is not increased during the project renovation; that included in the SIP capacity projects under 13th Five-Year Plan; in addition, green SHP and safe production standardization renovation should be the additional value-added part of the currently proposed renovation plan; the target power plants should be concentrated in 4-8 provinces with the richest potential hydropower resources; the selected plant must have a demonstrative effect on a certain method of green transformation of hydropower plants, so that other plants with similar characteristics can follow; Local farmers can directly benefit from the project transformation; Consideration should be given to different “green” concepts such as improvement of irrigation, water supply, flow, dehydration, water quality and monitoring, perfection of measures about watershed management, conservation of threatened species, flood prevention, adaptation.

Thus, the project target beneficiaries are positioned appropriately. According to the scoring criteria, the score of this index is 95.

Table 3.2 Information about Pilot Plants

Provinces (autonomous regions and municipalities directly under the central government)	Pilot Plants	Project Owners	Watershed	Remark
Zhejiang	Qingshuitan Hydropower Plant	Quzhou Municipal Qingshuitan Hydropower Plant	Shangshan Creek of Qu River Tributary	Panxi Cascade II, III and IV Hydropower Plants as one

Provinces (autonomous regions and municipalities directly under the central government)	Pilot Plants	Project Owners	Watershed	Remark
	Panxi Cascade II Hydropower Plant	Jinyun County Panxi Cascade Electricity generation Co., Ltd.	Panxi Tributary of Haoxi Watershed	plant.
	Panxi Cascade III Hydropower Plant			
	Panxi Cascade IV Hydropower Plant			
Fujian	Gaofang Cascade II Hydropower Plant	Gaofang II Hydropower Plant in Pucheng County	Dashixi	Jiaosan and Tantou Hydropower Plants as one plant.
	Tangban Hydropower Plant	Tangban Hydroelectric Power Plant in Lianjiang County, Fujian Province	Ao River Watershed	
	Jiaosan Hydropower Plant	Fujian Taining County Jiaoxi Hydropower Co., Ltd.	Puxi Tributary of Jinxi Watershed	
	Tantou Hydropower Plant	Fujian Taining County Shanlong Hydropower Co., Ltd.	Shanxi Tributary of Jinxi Watershed	
Hubei	Yangdaohe Hydropower Plant	Hubei Xingfa Chemicals Group Co., Ltd.	Gaolan River Watershed	Yangdaohe, Chaotianhou, Shijiaba Hydropower Plants as one plant.
	Chaotianhou Hydropower Plant			
	Shijiaba Hydropower Plant			
	Jiangjunzhu Hydropower Plant			
	Zhoujialiang Hydropower Plant	Zhoujialiang Hydropower Plant in Yunyang District, Shiyan City	Tao River	
	Jiugonghe Hydropower Plant	Tongshan County Hydropower Company	Hengshi River	
Guangdong	Guanxi Hydropower Plant	Ruyuan Yao Autonomous County Guanxi Hydropower Co., Ltd.	Nanshui River of Beijiang River Tributary	

Provinces (autonomous regions and municipalities directly under the central government)	Pilot Plants	Project Owners	Watershed	Remark
Guangxi	Sandieling Hydropower Plant	Sandialing Power Plant of Jingxi County Hydropower Co., Ltd.	Luoshui River	Sandieling, Dongpai Hydropower Plants as one plant; Aibu Cascade II, III Hydropower Plants as one plant.
	Dongpai Hydropower Plant	Dongpai Power Plant of Jingxi County Hydropower Co., Ltd.		
	Aibu Cascade II Hydropower Plant	Aibu II, III Hydropower Plant of Jingxi County Hydropower Co., Ltd.	Longtan River	
	Aibu Cascade III Hydropower Plant			
Chongqing	Majing Hydropower Plant	Chongqing Qijiang District Hydropower Co., Ltd.	Qingxi River	Jingtanfeng, Huangyan Hydropower Plants as one plant.
	Xiaokeng Hydropower Plant	Chongqing Xiema Electricity generation Co., Ltd.	Liangtan River	
	Gaokeng Hydropower Plant	Chongqing Longzhu Electric Power Co., Ltd.	Xiaoanxi River	
	Taiping Hydropower Plant	Chongqing Tailong Electric Power Co., Ltd.	Nixi River	
	Jingtanfeng Hydropower Plant	Wushan County Jingtang Hydropower Plant Co., Ltd.	Guandu River	
	Huangyan Hydropower Plant			
Yunnan	Maoyandong Hydropower Plant	Luxi Maoyandong Electricity generation Co., Ltd.	Xiaojiang River	
	Mabozi Hydropower Plant	Tonghai County Jiangyuan Hydropower Co., Ltd.	Qujiang River	
	Chahe Hydropower Plant	Shiping County Ruilong Electric Power Industry Co., Ltd.	Xiaohedi Tributary of Red River Watershed	
Shaanxi	Baiyunxia Hydropower Plant	Taibai County Baiyunxia Hydropower Co., Ltd.	Shitou River	
	Xiakou Hydropower Plant	Taibai County Shanxia Hydropower Development Co., Ltd.	Shancha Gorge of Shitou River Tributary	

Provinces (autonomous regions and municipalities directly under the central government)	Pilot Plants	Project Owners	Watershed	Remark
	Xinpingya Hydropower Plant	Ziyang Xinpingya Hydropower Branch Company of Shaanxi Regional Electric Power Hydropower Co., Ltd.	Badao River	

3.1.2.2 Whether the primary needs of the project targeted beneficiaries are identified appropriately.

Relying on the rural hydropower upgrading project under the “13th Five-Year Plan” mainly aims to update equipment, increase installed capacity and increase annual electricity generation. Therefore, the evaluation team believes that it is urgent and appropriate to take the project’s benefits in improving the ecological environment of the river, and increasing the management level and capacity building of the power plant as the primary needs of the beneficiary group. The score of this index is 95.

3.2. Efficiency

Based on the actual implementation of the project, the evaluation team developed the evaluation index for performance evaluation around key evaluation issues of efficiency, namely, “Whether the project is implemented as planned and achieves phased output”, “Whether the project budget is invested and used as planned”, “Whether the project management and implementation organizations are set up and selected appropriately, whether the project management and internal control are in place and ensure the effective implementation of the project”, “Whether the resources are invested economically and effectively, whether the project content design and implementation mechanism are innovative”. According to the performance evaluation framework and index scoring and weight setting criteria, the relevance score of the project performance evaluation is 89.43, and the project is rated as “high efficiency”.

Table 3.3 Project Efficiency Evaluation Index Development and Evaluation Results

Criteria (Weight)	Performance Rating	Weighted Score	Evaluation Score	Key Evaluation Issues	Primary Indicators	Secondary Indicators	Score
Efficiency (50%)	High efficiency	44.72	89.43	2.1 Whether the project is implemented as	2.1.1 Whether the project is implemented as	2.1.1.1 Launch timeliness of the project (50%)	95

Criteria (Weight)	Performance Rating	Weighted Score	Evaluation Score	Key Evaluation Issues	Primary Indicators	Secondary Indicators	Score
				planned and achieves phased output (40%)	planned (40%)	2.1.1.2 The conformity between the project plan and the estimated implementation period (50%)	95
					2.1.2 Staged completion of project activities (60%)	2.1.2.1 Green SHP Assessment Standard and aligned technical standards formulated and revised (10%)	80
						2.1.2.2 Preferential green SHP policies recommended and developed and relevant policies introduced (5%)	90
						2.1.2.3 Evaluation Criteria for Rural Hydropower Station Safe Production Standardization (provisional) rolled out nationwide (10%)	80
						2.1.2.4 23 business plans and feasibility studies finalised for upgrading SHP demonstration plants (5%)	90
						2.1.2.5 23 selected SHP plants upgraded to green SHP demonstration plants (30%)	92
						2.1.2.6 Socio-economic and environmental impact of green SHP rehabilitation recorded (5%)	70
						2.1.2.7 Capacity building programme for SHP project	80

Criteria (Weight)	Performance Rating	Weighted Score	Evaluation Score	Key Evaluation Issues	Primary Indicators	Secondary Indicators	Score
						owners, developers and technicians (10%)	
						2.1.2.8 Capacity building programme for officials on green SHP and Safe Production Standard (10%)	80
						2.1.2.9 Awareness raising campaign delivered (5%)	80
						2.1.2.9 Establishment of pilot green SHP plants (5%)	80
						2.1.2.10 Safe production standardization construction carried out (5%)	80
				2.2 Whether the project budget is invested and used as planned (40%)	2.2.1 Fund availability rate (70%)	2.2.1.1 Availability rate of GEF grant (30%)	70
						2.2.1.2 Availability rate of domestic supporting funds (70%)	95
					2.2.2 Fund utilization rate (30%)	/	95
				2.3 Whether the project management and implementation organizations are set up and selected appropriately; whether the project management and internal control are in place and ensure the effective implementation of the project (10%)	2.3.1 Whether there is a dedicated project organization or department with sufficient personnel, and whether it promotes project coordination and advancement (25%)	/	98
					2.3.2 Whether relevant management measures and implementation rules are	/	98

Criteria (Weight)	Performance Rating	Weighted Score	Evaluation Score	Key Evaluation Issues	Primary Indicators	Secondary Indicators	Score
					formulated and implemented in place (25%)		
					2.3.3 Whether there are effective information collection channels (25%)	/	95
					2.3.4 Whether there are effective risk prevention and control measures (25%)	/	95
				2.4 Whether the resources are invested economically and effectively; whether the project content design and implementation mechanism are innovative (10%)	2.4.1 Cost appropriateness (50%)	/	85
					2.4.2 Innovation of project content design and implementation mechanism (50%)	/	85

3.2.1 Whether the project is implemented as planned and achieves phased output.

In response to this key evaluation issue, the evaluation team adopted two primary indicators, “Whether the project is implemented as planned”, and “Staged completion of project activities” for evaluation.

3.2.1.1 Whether the project is implemented as planned

(1) Launch timeliness of the project

In June 2016, the GEF Council approved the project proposal. In May 2017, UNIDO signed the *Project Implementation Agreement* and the *Project Execution Agreement* with the Ministry of Finance and the Ministry of Water Resources respectively, marking the official launch of the project. In July 2017, UNIDO signed the *Project Agreement* with International Center on Small Hydro Power. From March to May 2018, UNIDO signed GEF contracts with 22 domestic pilot power plants, and various project activities have been launched. Due to the stringent schedule requirements of the hydropower upgrading project under the 13th Five-Year Plan, the implementation

of GEF project is related to the progress of the hydropower upgrading project under the 13th Five-Year Plan, some pilot plants were started ahead of schedule.

The evaluation team believes that the project is launched in a timely manner, and according to the scoring criteria, the score of the index is 95.

Table 3.4 Launch Time of Pilot Plant Upgrading

Provinces (autonomous regions and municipalities directly under the central government)	Pilot Plants	Scheduled Launch Time (GEF Contract)	Project Launch Time	Launch Timeliness
Zhejiang	Qingshuitan Hydropower Plant	2018.04.12	2016.12	Ahead of schedule
	Panxi Cascade Hydropower Plant	2018.04.19	2018.11	Behind schedule
Fujian	Gaofang Cascade II Hydropower Plant	2018.04.10	2017.07	Ahead of schedule
	Tangban Hydropower Plant	2018.04.08	2015.12	Ahead of schedule
	Jiaosan/Tantou Hydropower Plant	2018.04.13	2016.08	Ahead of schedule
Hubei	Yangdaohe Cascade Hydropower Plant	2018.05.07	2017.02	Ahead of schedule
	Jiangjunzhu Hydropower Plant	The contract has not been signed.	/	/
	Zhoujialiang Hydropower Plant	2018.04.28	2017.11	Ahead of schedule
	Jiugonghe Hydropower Plant	2018.04.18	2017.05	Ahead of schedule

Provinces (autonomous regions and municipalities directly under the central government)	Pilot Plants	Scheduled Launch Time (GEF Contract)	Project Launch Time	Launch Timeliness
Guangdong	Guanxi Hydropower Plant	2018.04.16	2017.06	Ahead of schedule
Guangxi	Sandieling/Dongpai Hydropower Plant	2018.03.22	2018.12	Behind schedule
	Aibu Cascade II/III Hydropower Plant	2018.03.22	2018.12	Behind schedule
Chongqing	Majing Hydropower Plant	2018.04.17	2017.08	Ahead of schedule
	Xiaokeng Hydropower Plant	2018.04.17	2017.11	Ahead of schedule
	Gaokeng Hydropower Plant	2018.04.17	2018.06	Behind schedule
	Taiping Hydropower Plant	2018.04.17	2017.07	Ahead of schedule
	Jingtangfeng/Huangyan Hydropower Plant	2018.04.17	2016.11	Ahead of schedule
Yunnan	Maoyandong Hydropower Plant	2018.04.20	2018.08	Behind schedule
	Mabozi Hydropower Plant	2018.04.16	2018.04	As scheduled
	Chahe Hydropower Plant	2018.03.22	2018.03	As scheduled
Shaanxi	Baiyunxia Hydropower Plant	2018.04.09	2016.11	Ahead of schedule
	Xiakou Hydropower	2018.04.09	2016.11	Ahead of

Provinces (autonomous regions and municipalities directly under the central government)	Pilot Plants	Scheduled Launch Time (GEF Contract)	Project Launch Time	Launch Timeliness
	Plant			schedule
	Xinpingya Hydropower Plant	2018.04.10	2018.02	Ahead of schedule

(2) The conformity between the project plan and the estimated implementation period According to the project design, the implementation period of the project plan is from May 2017 to May 2022. At the time of project evaluation, the project is expected to be completed in May 2022, and the overall project is expected to be completed in time. According to the scoring criteria, the evaluation team believes that the score of this index is 95.

3.2.1.2 Staged completion of project activities

(1) Green SHP Assessment Standard and aligned technical standards formulated and revised

This activity is shown in the table below:

Table 3.5 Completion of Activity 1.1.1

Outputs	Activities	Completion
1.1.1 Green SHP Assessment Standard and aligned technical standards formulated and revised	Review, revise and finalise the Green SHP Assessment Standard	The Project Management Office prepared the Waiver and submitted it to UNIDO on July 31, 2019. As the issue of funding within the SAP system of UNIDO has not yet been approved, UNIDO is coordinating for solution.
	Review, revise and finalise	
	Develop the Technical Guidelines on Dehydration Recovery in Downstream River of Small Hydro aligned to Green SHP Assessment Standard	
	Develop Technical Guidelines on Green SHP Construction Measures	
	Develop Guidance on Green SHP Development	
	Develop the Green SHP Development Strategy	

	Develop the Green SHP Assessment Management Rules	
	Establishment and improvement of the online Management Information System for Green Hydropower	

The evaluation team believes that the implementation of this activity is slightly behind schedule. According to the scoring criteria, the score of this index is 80.

(2) Preferential green SHP policies recommended and developed and relevant policies introduced

This activity is shown in the table below:

Table 3.6 Completion of Activity 1.1.2

Outputs	Activities	Completion
1.1.2 Preferential green SHP policies recommended and developed and relevant policies introduced	Development of green SHP assessment, certification and labeling system	In August 2019, the Development Research Center of the Ministry of Water Resources submitted the first draft of the design report, and a review and acceptance meeting was held on September 25.
	Support the local government to launch preferential policies for green SHP	The Project Management Office completed the bidding document.
	Recommendations provided to develop national level policies	

The evaluation team believes that the activity is carried out as planned, and according to the scoring criteria, the score of this index is 90.



Fig. 3.1 Review and Acceptance Meeting of Green SHP Grading and Labeling

(3) Evaluation Criteria for Rural Hydropower Station Safe Production Standardization (provisional) rolled out

This activity is shown in the table below:

Table 3.7 Completion of Activity 1.1.3

Outputs	Activities	Completion
1.1.3 Evaluation Criteria for Rural Hydropower Station Safe Production Standardization (provisional) rolled out	Best practice recommendations for provisional safety regulations and assessment procedures	The Project Management Office prepared the Waiver and submitted it to UNIDO on July 31, 2019. As the issue of funding within the SAP system of UNIDO has not yet been approved, UNIDO is coordinating for solution.
	Promote the implementation of the Evaluation Criteria for Rural Hydropower Station Safe Production Standardization nationwide	
	Guide the relevant provinces to issue implementation measures and regulations on safe production standards	

The evaluation team believes that the activity is slightly behind schedule, and according to the scoring criteria, the score of this index is 80.

(4) 23 business plans and feasibility studies finalised for upgrading SHP demonstration plants

This activity is shown in the table below:

Table 3.8 Completion of Activity 1.1.4

Outputs	Activities	Completion
2.1.1 23 business plans and feasibility studies finalised for upgrading SHP demonstration plants	Technical assistance provided on greening technology and safety measures, and business plans and feasibility studies finalised	The evaluation recommendations for the preliminary report of 15 power plants in 4 provinces (Fujian, Hubei, Chongqing, Yunnan) have been completed, and the relevant power plants are currently responding to the recommendations.

The evaluation team believes that the activity is implemented as planned, and according to the scoring criteria, the score of this index is 90.

(5) 23 selected SHP plants upgraded to green SHP demonstration plants

This activity is shown in the table below:

Table 3.9 Completion of Activity 1.1.5

Outputs	Activities	Completion
2.1.2 23 selected SHP plants upgraded to green SHP demonstration plants	Installation and commissioning of demonstration projects	Proceed as planned
	Environmental flow and performance monitoring	The Project Management Office is preparing the TOR.
	Assessment of the automation and technical level of the SHP stations	

The evaluation team believes that the activity is implemented as planned, and according to the scoring criteria, the score of this index is 92.

Table 3.10 Progress of SHP Efficiency Improvement and Capacity Expansion Project under the 13th Five-Year Plan

Provinces	Pilot Plants	Completed or Not?	Completion Acceptance Time	Final Acceptance Time
Zhejiang	Qingshuitan	√	2019.07	Expected in 2020.12
	Panxi Cascade	√	Expected in 2019.10	Expected in 2020.10
Fujian	Gaofang II	√	2018.07	Expected in 2020.06
	Tangban	√	2019.09	Expected in 2020.09
	Jiaosan/Tantou	Jiaosan: √	2018.09	Expected in 2019.12
		Tantou: √	2018.10	Expected in 2019.12

Provinces	Pilot Plants	Completed or Not?	Completion Acceptance Time	Final Acceptance Time
Hubei	Yangdaohe Cascade	√	2019.03	Expected in 2020.03
	Zhoujialiang	√	2018.12	Expected in 2020.12
	Jiugonghe	× (Expected in 2019.12)	/	/
	Jiangjunzhu	√	/	/
Guangdong	Guanxi	× (Expected in 2019.11)	Expected in 2019.12	Expected in 2020.12
Guangxi	Sandieling/Donpai	√	Expected in 2019.11	Expected in 2020.05
	Aibu II/III	× (Expected in 2019.10)	Expected in 2019.12	Expected in 2020.05
Chongqing	Majing	√	Expected in 2020.06	Expected in 2020.12
	Xiaokeng	× (Expected in 2019.12)	Expected in 2019.12	Expected in 2020.02
	Gaokeng	√	Expected in 2019.11	Expected in 2020.06
	Taiping	√	2018.12	Expected in 2019.12
	Jingtangfeng/Huangyan	Jingtangfeng: √	2017.12	Expected in 2020.05
		Huangyan: √	2019.06	Expected in 2020.05
Yunnan	Maoyandong II	√	Expected in 2019.12	Expected in 2021.06
	Mabozi	× (Expected in 2019.12)	Expected in 2020.02	Expected in 2021.06
	Chahe	√	Expected in 2019.12	Expected in 2021.06
Shaanxi	Baiyunxia	√	2019.08	Expected in 2020.05
	Xiakou	√	2019.08	Expected in 2020.05
	Xinpingya	√	Expected in 2019.10	Expected in 2020.05

Table 3.11 Progress of Activities under GEF Project

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
Zhejiang	Qingshuitan	1. Upgrading of the ecological flow discharging culvert and install the computerized monitoring system; 2. Installation of trash racks at the intake; 3. Carry out remediation upstream and downstream of the dam; 4. Construction of a landscape water-raising weir and create a landscape node; 5. improvement of the factory's nearby environment;	1 Safe production standardization construction Safe production standardization construction	It has been rated as Grade C safe production, and is being upgraded to Grade B.	2019.12
			2 Green SHP establishment;	The technical consulting contract has been signed and the preliminary work is being carried out.	2020.09
	Panxi Cascade	1. Installation of the ecological flow discharging equipment and monitoring system; 2. improvement of sound insulation facilities; 3. Installation of the turbine oil treatment equipment; 4. Installation of facilities to collect and dispose floating refuse; 5. Protection of aquatic organisms	1 Facade reconstruction and landscape restoration of the power plant	90%	2019.10
			2 Monitoring water quality changes	50%	2019.10
			3 Sewage treatment facility	90%	2019.10
			4 Ecological environment restoration of dehydration section	90%	2019.10
			5 12000m2 afforestation to protect the river ecological environment	10%	2019.10
			6 Safe production standardization construction	The review work is in preparation, the relevant ledger information, signs and labels are basically completed. The review work is expected in October 2019.	2019.12
			7 Green SHP establishment	Corresponding materials are being prepared and the	2020.10

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
				declaration is expected to start in 2020.	
Fujian	Tangban	1. Installation of ecological flow equipment and monitoring system; 2. Technical transformation of centralized control of gate opening and closing equipment; 3. Site area afforestation in reservoir area of the plant's non-slip ramp zone; 4. Ecological recovery in reservoir area; 5. Installation of clear-water basin; 6. Carry out the review of safe production standardization construction (level 1); 7. Carry out green SHP establishment	1 Installation of industrial monitoring facilities (industrial television) in the plant	The budget has been submitted for audit, and the tender is scheduled for October after getting the audit result.	2019.12
	Gaofang II	1. Installation of the ecological flow discharging equipment and online monitoring system; 2. Adding computer printing equipment to share the flood warning information of the upstream Gaofang Reservoir;	1. Cooperate with the local police station and the village committee to set up warning signs in the upstream and downstream reaches of the dam for protection of aquatic life	20%	2019.11
			2. Reinforce and repair the original irrigation canal to ensure 800 mu of farmland irrigation water	20%	2019.11
			3. Install garbage removal devices in front of the trash rack at the intake and construct garbage collection and treatment facilities	20%	2019.11
			4. Upstream and downstream river environment improvement and	20%	2019.11

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
			beautification, prohibition of deforestation, reinforcement and repair of downstream river flood banks		
			5. Collect water from a fixed section at regular intervals and send it to the health and epidemic prevention department for testing	20%	2019.11
			6. Add sound insulation facilities in the central control room and duty room	20%	2019.11
			7. turbine oil collection facilities, transformation of sewer and septic tank, production and domestic wastewater discharge up to standards	20%	2019.11
			8 Safe production standardization construction	A third party is being consulted, and a technical consulting contract will be signed.	2020.05
			9 Green SHP establishment	The technical consulting contract has been signed and the preliminary work is being carried out.	2020.09
	Jiaosan/Ta ntou	Jiaosan: 1. Installation of ecological flow discharging equipment & monitoring system 2. Improvement of the pollution prevention facilities 3. Construction of the waste landfill facilities 4. Installation of facilities to collect and	1. Safe production standardization construction	It has been declared for review.	2019.12
			2. Green SHP establishment;	It is planned to declare by the end of September.	2019.12

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
		dispose of floating refuse 5. Improvement of the working environment of operators			
		Tantou: 1. Installation of ecological flow discharging equipment & monitoring system	1. Safe production standardization construction	It has been declared for review.	2019.12
		2. Installation of facilities to collect and dispose of floating refuse 3. Improvement of water channels, adding three ecological weirs, and planting trees to restore damaged vegetation areas	2. Green SHP establishment;	It is planned to declare by the end of September.	2019.12
Hubei	Yangdaohe Cascade	1. Setting up ecological flow discharging equipment on dams of Chaotianhou, Yangdaohe and Shijiaba power plants; 2. Construction of cascaded mortar-masonry submerged dams in combination with ecological flow measures; 3. Setting up fences to block domestic garbage, drift wood, etc., with each fence 0.3m above the river bed; 4. Increasing facilities to collect and dispose floating refuse; 5. Setting up ecological flow monitoring instruments and transmission optical cables on the dam to observe the release of ecological flow; 6. Plant 1000m2 of turf in each power	1 Green SHP establishment	It will be carried out after the completion acceptance.	2020.07

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
		plant area, plant 100 camphor trees and 150 osmanthus trees; 7. Setting up a basin centralized control center at Chaotianhou Hydropower Plant; 8. Safe production standardization construction;			
	Zhoujialiang	1. Installation of ecological flow discharging equipment and online monitoring system; 2. Adding slag slag raking machine	1 Rectification of tailrace and plant greening	20%	2019.12
			2 Procurement of water supply facility engineering and water quality detector	80%	2019.12
			3 Safe production standardization construction	Prepare to apply to a third party for review	2019.12
			4 Green SHP establishment	Part of the preliminary work has been completed and it is planned to declare by the end of September.	2019.12
	Jiugonghe	(The owner of the power plant has changed and the progress has not been reported; it has been communicated and coordinated with the Provincial Project Office)			
Jiangjunzhu	Prepare to sign a contract with UNIDO				
Guangdong	Guanxi		1 Setting up the discharge and monitoring equipment to ensure the minimum discharge	50%	2019.11
			2 Installation of equipment to prevent oil leakage	75%	2019.10

Provinces	Pilot Plants	Completed	To Be Completed					
			Activities	Proportion of Completed Quantities	Estimated Completion Time			
			3 River desilting and flood slope repair	30%	2019.11			
			4 Landscape restoration of the power plant	70%	2020.10			
			5 Safe production standardization construction	Work safety standardization has been fully carried out, the implementation programs and plans have been made, and standardization data are being collated at present.	2020.03			
			6 Green SHP establishment	In consultation with a third party	2020.10			
			Guanxi	Sandieling/ Dongpai	1. Installation of ecological flow discharge and online monitoring system; 2. Improvement of water diversion channel and construction of farmland irrigation channels	1 Installation of Water situation automatic measuring and reporting system	0%	2019.12
						2 Safe production standardization construction	In consultation with a third party	2020.09
3 Green SHP establishment	In consultation with a third party	2020.09						
Guanxi	Aibu II/III	1. Installation of ecological flow discharging and online monitoring system	1 Installation of automatic control system and monitoring system	0% (Tender completed)	2019.12			
			2 Plant beautifying	0%	2019.11			
			3 Installation of trash rack collection equipment	0%	2019.11			
			4 Safe production standardization construction	In consultation with a third party	2020.09			
			5 Green SHP establishment	In consultation with a third party	2020.09			
Chongqing	Majing	1. Installation of ecological flow equipment & monitoring system;	1 Green SHP establishment	The third-party technical consulting unit has	2020.11			

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
		2. Channel dredging and collapsed bank repair; 3. Refurbishment of clear-water basin and cesspool; 4. Improvement of leisure function area and local public services; 5. Safe production standardization construction		extracted the relevant data from Majing field, and Majing Hydropower Plant has been actively cooperating to improve the relevant data.	
	Xiaokeng	1. Replacement of the ecological flow discharging facilities; 2. Ecological remediation for dehydration section of the power plant barrage;	1 Enhancing the facade environment of the plant and create historical landscape nodes	30%	2020.04
2 Installation of clean-water basin and cesspool			0% (The work plan has been developed)	2020.02	
3 Installation of ecological flow online monitoring system			0% (The work plan has been developed)	2020.02	
4 Safe production standardization construction			It is planned to start after the power plant is put into operation.	2020.11	
5 Green SHP establishment			The technical consulting contract has been signed and the date is in preparation.	2020.11	
	Gaokeng	1. Installation of ecological flow discharging equipment; 2. Installation of ecological remediation for dehydration section and floating refuse collecting devices & garbage disposal facilities at the water inlet; 3. Installation of turbine oil treatment equipment;	1. Safe production standardization construction	Preliminary work is being carried out.	2020.10
			2. Green SHP establishment;	The technical consulting contract has been signed and the date is in preparation.	2020.11

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
		4. Installation of clear-water basin and cesspool; 5. Site area afforestation;			
	Taiping	1. Installation of ecological flow equipment & monitoring system; 2. Installation of facilities to collect and dispose of floating refuse at the water inlet; 3. Improvement of the plant environment; 4. Safe production standardization construction	1 Green SHP establishment	The technical consulting contract has been signed and the declaration is under way.	2020.11
	Jingtangfen g/Huangyan	1. Installation of automatic trash racking equipment and construct garbage treatment facilities; 2. Optimizing control system, reduce staff; 3. Installation of Small watershed management, restoration of natural landscape, protection of forests; 4. Replacement of the sound insulation windows/doors of the control room, and transform the soundproof glass of the power plant; 5. Building water purify pool and cesspool;	1 Installation of ecological flow discharging and online monitoring system	80%	2020.02
2 Safe production standardization construction			In consultation with a third party	2020.11	
3 Green SHP establishment			In consultation with a third party	2020.11	
Yunnan	Maoyandong II	1. Installation of ecological flow discharging and online monitoring system; 2. Installation of water quality	1 Installation of racking equipment before trash rack	0%	2020.04
			2 Installation of hydrology measurement devices	0%	2020.04

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
		monitoring devices; 3. Adding sound insulation windows in control room; 4 Renovation of the river channel 5 Plant area greening	3 Adding oil spill collection devices	0%	2020.04
			4 Adding water purifying tank and cesspool	0%	2020.04
			5 Safe production standardization construction	The management regulations and operation and maintenance related materials are being prepared. The signboards have been completed and the related identification of the factory plant and equipment is being improved.	2021.03
			6 Green SHP establishment	In consultation with a third party	2021.03
	Mabozi	1 Setting up ecological flow generator units; 2. Improvement of the external facade of the plant;	1 Installation of ecological flow and water quality monitoring system	60%	2019.11
			2 Safe production standardization construction	Relevant materials are being combed and will be created.	2021.03
			3、 Green SHP establishment	The contract has been signed and the relevant materials are being prepared.	2021.03
	Chahe	1. Installation of ecological flow pipe & monitoring system 2. Installation of coarse trash racks and add garbage treatment facilities; 3. Installation of 200m3 road retaining	1. Safe production standardization construction	In consultation with a third party	2021.03
			2. Green SHP establishment;	In consultation with a third party	2021.03

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
		wall, roads and greening in the plant; 4. Installation of water purifying tank and cesspool; 5. Rehabilitation of downstream rivers and afforestation; 6. Adding sound insulation in the central control room;			
Shaanxi	Baiyunxia	1. Building new ecological water discharging equipment; 2. Sound insulation and noise reduction; 3. Building a cesspool; 4. Installation of new trash bins;	1 Installation of a set of monitoring equipment, power supply and communication equipment	0% (The project design of ecological flow monitoring system has been completed)	2020.03
			2 Plant area greening	0% (The greening design plan of the yard has been completed)	2020.04
			3 Renovation before the retaining dam	0%	2020.04
			4 Construction of a Hydrophilic platform	0%	2020.05
			5 Safe production standardization construction	Work safety standardization construction has been carried out, and the implementation program and plan have been formulated. At present, the power plant is carrying out standardization data collation and signboard statistics making.	2020.05
			6 Green SHP establishment	It will be carried out after the completion acceptance.	2020.07

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
	Xiakou	1. Building new ecological flow discharging equipment; 2. Renovation before the retaining dam; 3. Sound insulation of control room and duty room; 4. Building a cesspool; 5. Installation of new trash bins;	1 Installation of a set of monitoring equipment, power supply and communication equipment	0% (The project design of ecological flow monitoring system has been completed)	2020.03
			2 Plant area greening	0% (The greening design plan of the yard has been completed)	2020.04
			3 Building the cross river passage	0%	2020.03
			4 Safe production standardization construction	Work safety standardization construction has been carried out, and the implementation program and plan have been formulated. At present, the power plant is carrying out standardization data collation and signboard statistics making.	2020.05
			5 Green SHP establishment	It will be carried out after the completion acceptance.	2020.07
	Xinpingya	1. Installation of 5 trash bins nearby the powerhouse.; 2. Safe production standardization construction; 3. Green SHP establishment;	1. Installation of an integrated drinking water treatment facility and build a cesspool	50%	2019.09
			2. Installation of 25 street lamps on the road to the powerhouse and nearby the powerhouse.	20%	2019.10
			3. Installation of a set of real-time	40%	2019.10

Provinces	Pilot Plants	Completed	To Be Completed		
			Activities	Proportion of Completed Quantities	Estimated Completion Time
			monitoring equipment and erect 3.0KM optical fiber		
			4. Improvement of the sound insulation for the control room and duty room	60%	2019.10
			5. Painting the external and internal walls of powerhouse and sub-powerhouse.	20%	2019.10
			6. Construction of a garden inside the road to the powerhouse. Build green belt at flood wall and behind the powerhouse.	20%	2019.10
			7. Installation of an automatic rain gauge in the upstream of the power plant, and cooperate with the upstream power plant to establish the river early warning system	20%	2019.10
			8. Setting up a set of remote water level gauges and video monitoring system in the hub, forebay and tail water respectively	60%	2019.10

(6) Socio-economic and environmental impact of green SHP rehabilitation recorded

This activity is shown in the table below:

Table 3.12 Completion of Activity 2.1.3

Outputs	Activities	Completion
2.1.3 Socio-economic and environmental impact of green SHP rehabilitation recorded	Carry out Environmental and Social Management Plans (ESMPs) at each site	The Project Management Office is preparing the bidding document.
	Carry out baseline socio-economic and environmental study of 10 representative plants before and after rehabilitation	The Project Management Office is preparing the TOR.
	Documentation of results of demonstration projects and preparation of case studies	It is planned to start after the completion of rehabilitation.

The evaluation team believes that the activities are seriously behind schedule, and according to the scoring criteria, the score of this index is 70.

(7) Capacity building programme for SHP project owners, developers and technicians

This activity is shown in the table below:

Table 3.13 Completion of Activity 3.1.1

Outputs	Activities	Completion
3.1.1 Capacity building programme for SHP project owners, developers and technicians	Training material developed and train-the-trainers trained	The Project Management Office prepared the Waiver and submitted it to UNIDO on July 31, 2019. As the issue of funding within the SAP system of UNIDO has not yet been approved, UNIDO is coordinating for solution.
	Training programme delivered to project owners, developers, managers, technicians and design institutes	On August 5, 2019, the Project Management Office submitted relevant TOR to UNIDO. At present, UNIDO is conducting the procedures before the issuance of the bidding announcement.
	Study tour for project owners, developers, managers, technicians and design institutes	In June 2019, INTEC organized plant owners to visit the United States to learn about certification projects and green hydropower measures of LIHI, and learn from relevant local incentive policies in the United States. LIHI is a non-profit organization that works to reduce the negative impact of hydropower through certified hydropower projects and enable certified projects to enter the renewable energy market.

The evaluation team believes that the activity is slightly behind schedule, and according to the scoring criteria, the score of this index is 82.



Fig. 3.2 Visit to Collins Hydropower Plant in the United States



Fig. 3.3 Visit to Ice House Hydropower Plant in the United States



Fig. 3.4 Workshop with LIHI at the University of Massachusetts Lowell

(8) Capacity building programme for officials on green SHP and Safe Production Standard

This activity is shown in the table below:

Table 3.14 Completion of Activity 3.1.2

Activity Name	Work Task	Completion
3.1.2 Capacity building programme for officials on green SHP and Safe Production Standard	Training material developed on policy and regulation on Green SHP and on Safe Production Standard	The Project Management Office prepared the Waiver and submitted it to UNIDO on July 31, 2019. As the issue of funding within the SAP system of UNIDO has not yet been approved, UNIDO is coordinating for launching the plan (The bidding document has been submitted).
	Training programme delivered to national and provincial level MWR/WRB officials in 8 provinces	On August 5, 2019, the Project Management Office submitted relevant TOR to UNIDO. At present, UNIDO is conducting the procedures before the issuance of the bidding announcement.
	Study tour for national and provincial level MWR/WRB officials in 8 provinces	The Project Management Office started the relevant procurement procedures, and completed the bid evaluation. With the agreement of UNIDO, it is ready to sign the contract.

The evaluation team believes that the activity is slightly behind schedule, and according to the scoring criteria, the score of this index is 80.

(9) Awareness raising campaign delivered

This activity is shown in the table below:

Table 3.15 Completion of Activity 3.1.3

Activity Name	Work Task	Completion
3.1.3 Awareness raising campaign delivered	Green SHP awareness and training for project participants	The Hangzhou Micro Advertising Co. Ltd organized 41 media to complete the publicity activities of green SHP and safe production standardization in October 2017 to increase public awareness of the project; special training was delivered to pilot project owners to familiarize themselves with the project process and management methods.



Fig. 3.5 Project Launch Meeting (Training for Owners)



Fig. 3.6 Media Publicity

The evaluation team believes that the activity is slightly behind schedule, and according to the scoring criteria, the score of this index is 80.

(10) Establishment of pilot green SHP plants

This activity is shown in the table below:

Table 3.16 Completion of Activity 3.1.4

Activity Name	Work Task	Completion
3.1.4 Establishment of pilot green SHP plants	Develop training material for green SHP establishment	The Project Management Office prepared the Waiver and submitted it to UNIDO on July 31, 2019. As the issue of funding within the SAP system of UNIDO has not yet been approved, UNIDO is coordinating for launching the plan.
	Training programme on green SHP establishment delivered to project owners, developers, managers and technicians	On August 5, 2019, the Project Management Office submitted the TOR to UNIDO. At present, UNIDO is conducting the procedures before the issuance of the bidding announcement.

	Qualify 24 SHP plants as the Green SHP Plants	
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The evaluation team believes that the activity is slightly behind schedule, and according to the scoring criteria, the score of this index is 80.

(11) Safe production standardization construction carried out

This activity is shown in the table below:

Table 3.17 Completion of Activity 3.1.5

Activity Name	Work Task	Completion
3.1.5 Establishment of safe production standardization	Develop training material for safe production standardization establishment	The Project Management Office prepared the Waiver and submitted it to UNIDO on July 31, 2019. As the issue of funding within the SAP system of UNIDO has not yet been approved, UNIDO is coordinating for solution.
	Training programme on safe production standardization establishment delivered to project owners, developers, managers and technicians	On August 5, 2019, the Project Management Office submitted relevant the TOR to UNIDO. At present, UNIDO is conducting the procedures before the issuance of the bidding announcement.
	Certify 24 SHP plants as Safe Production Standardization Plants	

The evaluation team believes that the activity is slightly behind schedule, and according to the scoring criteria, the score of this index is 80.

3.2.2 Whether the project budget is invested and used as planned

In response to this key evaluation issue, the evaluation team adopted two primary indicators for evaluation, namely, “Fund availability rate” and “Compliance of fund utilization”.

3.2.2.1 Fund availability rate

(1) Availability rate of GEF grant

At the time of project design, the GEF grant was planned to be US\$ 8.925 million, accounting for 10.69% of the total project amount. As of September 2019, the cumulative fund available of GEF grant was US\$ 1.117941 million, with an

availability rate of 12.53%. Since the GEF grant is paid by UNIDO to the relevant contractors according to the contract progress, the amount available accounts for 23.29% of the signed contract amount.

The reasons for the low and slow availability of GEF grant funds include: The project owners are not familiar with the reimbursement rules, and the related supporting materials submitted such as progress reports, contracts and invoices are of low quality, and need to be repeatedly modified to meet the reimbursement requirements; some project owners are afraid of the trouble of reimbursement, and most of them use supporting funds to implement the project first, and only start to prepare materials for reimbursement when the project has made more progress; In addition, there is a process node plan instead of a specific annual plan for fund availability, which leads to a low rate of fund availability in evaluation.

According to the scoring criteria, the score of this index is 70.

(2) Availability rate of domestic supporting funds

At the time of project design, the supporting fund was planned to be US\$ 74,578,448, accounting for 89.31% of the total project amount. As of September 2019, the cumulative supporting funds available were US\$ 44,417,583, with an availability rate of 59.56%. Considering that this is a mid-term assessment, the availability of supporting funds is in good condition and can meet the implementation needs of project activities.

The evaluation team believes that the supporting funds are in place as planned, and according to the scoring criteria, the score of this index is 95.

Table 3.18 Availability of Funds

Sources	Amount Planned (10,000 US\$)	Delivered (10,000 US\$)	Availability Rate
GEF Grant	892.5000	111.7941	12.53%
Co-financing	7457.8448	4441.7583	59.56%
Total	8350.3448	4553.5524	54.53%

3.2.2.2 Compliance of fund utilization

According to the evaluation team's discussion of the Project Office and case file research, the funds are used in accordance with relevant laws and regulations during the implementation of this project, and there is no illegal use of funds. According to the scoring criteria, the score of this index is 95.

3.2.3 Whether the project management and implementation organizations are set up and selected appropriately; whether the project management and internal control are in place and ensure the effective implementation of the project

In response to this key evaluation issue, the evaluation team adopted four primary indicators for evaluation, namely, "Whether there is a dedicated project organization or department with sufficient personnel, and whether it promotes project coordination and advancement", "Whether relevant management measures and implementation rules are formulated and implemented in place", "Whether there are effective information collection channels", "Whether there are effective risk prevention and control measures".

3.2.3.1 Whether there is a dedicated project organization or department with sufficient personnel, and whether it promotes project coordination and advancement

A Project Steering Committee has been set up, and it is composed of the Department of Rural Water and Hydropower of MWR, the Department of International Cooperation, Science and Technology of MWR, Department of International Financial Cooperation of MOF, Department of Economic Construction of MOF, International Center on Small Hydro Power, Department of Energy, UNIDO and provincial departments of water resources. In accordance with the relevant requirements of the Ministry of Water Resources, the Ministry of Finance and the Global Environment Facility, the Project Steering Committee is mainly responsible for decision-making of major issues such as project policy design, target tasks and fund allocation, as well as organization and coordination of project implementation progress, quality and fund arrangement.

Table 3.19 List of Project Steering Committee

No.	Name	Organization	Position/Title
Chairman			
1	Mr. Chen Mingzhong	Department of Rural Water and Hydropower of MWR	Director General
Vice Chairman			
2	Mr. XingYuanyue	Department of Rural Water and Hydropower of MWR	Deputy Director
3	Mr. Li Ge	Department of International Cooperation, Science and Technology of MWR	Deputy Director
4	Mr. Wang Zhongjing	Department of International Financial Cooperation of MOF	Deputy Director
5	Ms. Song Qiuling	Department of Economic Construction of MOF	Deputy Director
6	Mr. Liu Deyou	International Center on Small Hydro Power	Director
7	Mr. Rana Singh	Department of Energy, UNIDO	Project Manager
8	Mr. Ralf Bredel	UNIDO Representative Office in China	Head of Regional Office
Member			
9	Mr. Jiang Ruhua	Department of Water Resources, Zhejiang Province	Deputy Director
10	Mr. Huang Mingcong	Department of Water Resources, Fujian Province	Deputy Counsel
11	Mr. Tang Jun	Department of Water Resources, Hubei Province	Deputy Director
12	Mr. Kuang Mingyong	Department of Water Resources, Guangdong Province	Chief Engineer
13	Mr. Liu Zhongqi	Department of Water Resources, Guangxi Province	Deputy Director
14	Mr. Tan Yan	Department of Water Resources, Chongqing	Deputy Director
15	Mr. Yin Nan	Department of Water Resources, Yunnan Province	Deputy Director
16	Mr. Ding Jimin	Department of Water Resources, Shaanxi Province	Deputy Director

The Project Management Office, located in International Center on Small Hydro Power, is responsible for executing and implementing the decisions of the Project Steering Committee, and organizing, coordinating, guiding and managing the implementation of the project. The main responsibilities include:

- Execute and implement the decisions of the Project Steering Committee, prepare and implement the project according to the division of work; report to the Project Steering Committee regularly, and report any major or urgent problems without delay.
- Establish a sound management and organization system, allocate sufficient management and technical personnel, and train relevant personnel of the provincial project office and demonstration project units to ensure the smooth implementation of the project.
- Make and maintain the detailed annual work plan to achieve project results, continuously monitor the project progress and risks, and prepare other related project reports;
- Establish a framework for project monitoring and evaluation to inspect and supervise the progress, quality and implementation of the project;
- Make the annual project budget, review and update it regularly; compile costs and budgets needed for project activities and services;
- Guide and supervise financial and procurement management of the project, and supervise the availability and payment progress of GEF grants and supporting funds;
- Responsible for the inspection, evaluation and acceptance of the project;
- Promote and expand project activities and results;
- Responsible for other related work of the project.

The provincial project management offices are established in Zhejiang, Fujian, Hubei, Guangdong, Guangxi, Chongqing, Yunnan and Shaanxi provinces (autonomous regions, municipalities directly under the Central Government). Under the guidance of the Project Steering Committee and the Project Management Office, they are responsible for the organization, implementation, coordination, management, supervision and evaluation of pilot projects in their respective provinces (autonomous

regions, municipalities directly under the Central Government). The main responsibilities include:

- Responsible for coordination and management of project activities in the province;
- Participate in the training organized by the Project Management Office to assist the Project Management Office in the evaluation and implementation of the project in the province;
- Responsible for the inspection and daily supervision of the project in the province, assist to implement supporting funds for each demonstration project, and supervise the use of GEF grants and supporting funds for each demonstration project;
- Supervise and inspect the procurement for the project in the province, and provide necessary on-site transportation and technical and management support personnel for project consultants' work;
- Supervise the project owners in the province to implement the project in accordance with the procedures and requirements of the implementation plan;
- Responsible for the summary of the project reports, financial reports and financial statements in the province, and submit them to the Project Management Office;
- Assist the Project Management Office in the inspection, evaluation and acceptance of the project construction in the province;
- Responsible for other related work of the project in this province.

Table 3.20 List of Provincial Project Office Directors

Provinces (autonomous regions and municipalities directly under the central government)	GEF Provincial Project Office Directors	Organization	Position/Title
Zhejiang	Mr. Chen Senmei	Zhejiang Provincial Hydropower Management Center	Director
Fujian	Mr. Ou Yimin	Division of Rural Water and Hydropower of Department of	Researcher

		Water Resources of Fujian Province	
Hubei	Mr. Dai Zhuxin	Division of Rural Water and Hydropower of Department of Water Resources of Hubei Province	Division Chief
Guangdong	Mr. Gao Xueshan	Division of Rural Water and Hydropower of Department of Water Resources of Guangdong Province	Division Chief
Guangxi	Mr. Li Shiri	Hydropower Management Center of Guangxi Zhuang Autonomous Region	Deputy Director
Chongqing	Ms. Ji Bihua	Chongqing Rural Water and Hydropower Center	Director
Yunnan	Mr. Ai Rongqi	Rural Hydropower and Electrification Development Authority of Department of Water Resources of Yunnan Province	Deputy Director
Shaanxi	Mr. Yang Yingang	Shaanxi Water and Hydropower Development Center	Director

Table 3.21 List of Provincial Project Office Coordinators

Provinces (autonomous regions and municipalities directly under the central government)	GEF Provincial Project Office Coordinators	Organization	Position/Title
Zhejiang	Mr. Chen Xiaojian	Zhejiang Provincial Hydropower Management Center	Assistant Chief Engineer
Fujian	Mr. Hu Wenwu	Division of Rural Water and Hydropower of Department of Water Resources of Fujian Province	Section Chief
Hubei	Mr. Cha Xing	Division of Rural Water and	Principal Staff

		Hydropower of Department of Water Resources of Hubei Province	Member
Guangdong	Mr. Zhao Liang	Division of Rural Water and Hydropower of Department of Water Resources of Guangdong Province	Section Chief
Guangxi	Mr. Mai Geguang	Hydropower Management Center of Guangxi Zhuang Autonomous Region	Director of Efficiency Office
Chongqing	Mr. Huang Qingchun	Chongqing Rural Water and Hydropower Center	Researcher
Yunnan	Mr. Yang Jingen	Rural Hydropower and Electrification Development Authority of Department of Water Resources of Yunnan Province	Principal Staff Member
Shaanxi	Mr. Xia Jianjun	Shaanxi Water and Hydropower Development Center	Section Chief

Based on the above analysis, a special project management organization is also set up, effectively promoting the coordination of the project. According to the scoring criteria, the evaluation team believes that the score of the index is 98.

3.2.3.2 Whether relevant management measures and implementation rules are formulated and implemented in place

During the implementation of this project, the relevant national and GEF regulations were strictly implemented, moreover, a series of rules and regulations such as *GEF Project Management Measures* and *GEF Project Financial Management Measures* were formulated by the Project Management Office in combination with the characteristics of the project. These rules and regulations comprehensively and in detail stipulate the responsibilities and powers of the project implementation units at all levels, clarify the working procedures, and establish systems on all aspects of project implementation such as bidding and procurement, project management, payment, application and reimbursement, institutional and financial strengthening. It provides a strong institutional guarantee for organization and management of the

whole project.

The evaluation team believes that a sound management system has been formulated and implemented in accordance with the regulations, which ensures the smooth implementation of the project. The score of the index is 98.



Fig. 3.7 Project Management Measures



Fig. 3.8 Project Financial Management Measures

3.2.3.3 Whether there are effective information collection channels

In terms of the construction of information collection channels, the Project Management Office has established effective information collection channels. In order to understand the implementation of each project, each project implementation unit was required to submit relevant materials like quarterly reports and progress reports as required to understand the specific implementation of each sub-project. The Project Management Office supervised and evaluated the project related activities and outputs, and regularly reported to the Project Steering Committee and UNIDO.



Fig. 3.9 First Meeting of the Project Steering Committee



Fig. 3.10 Second Meeting of the Project Steering Committee

At the same time, the Project Management Office sent experts to each pilot project from time to time to check the progress and compliance of each project, as well as problems in the implementation, and put forward corrective suggestions in time. The UNIDO project manager visited the project from time to time to check the implementation of the project. They also guided and supervised the progress of pilot projects by holding seminars and conducting field surveys.



Fig. 3.11 UNIDO officer visited the Panxi Cascade Hydropower Plant (2016.11)



Fig. 3.12 UNIDO officer visited the Yangdaohe Cascade Hydropower Plant (2017.11)



Fig. 3.13 UNIDO officer visited Jiaosan/Tantou Hydropower Plants (2018.06)



Fig. 3.14 UNIDO officer visited Tangban Hydropower Plants (2018.06)



Fig. 3.15 UNIDO officer visited Xiaokeng Hydropower Plant (2019.04)



Fig. 3.16 UNIDO officer visited Gaokeng Hydropower Plant (2019.04)



Fig. 3.16 UNIDO officer visited Majing Hydropower Plant (2019.04)

The evaluation team believes that an effective information communication mechanism has been established for the project. According to the scoring criteria, the score of the index is 95.

3.2.3.4 Whether there are effective risk prevention and control measures

The project has a set of relatively complete risk control measures: First, a project reserve mechanism was established. If the existing pilot plants are not included in the implementation plan of the “13th Five-Year Plan” or cannot be started in time according to the design plan, the reserve projects can be used for replacement and implemented in accordance with established emission reduction targets; Second, each project unit proceeds with the project in strict accordance with Preventing and Combating Fraud and Corruption by UNIDO in the signed GEF project contract.

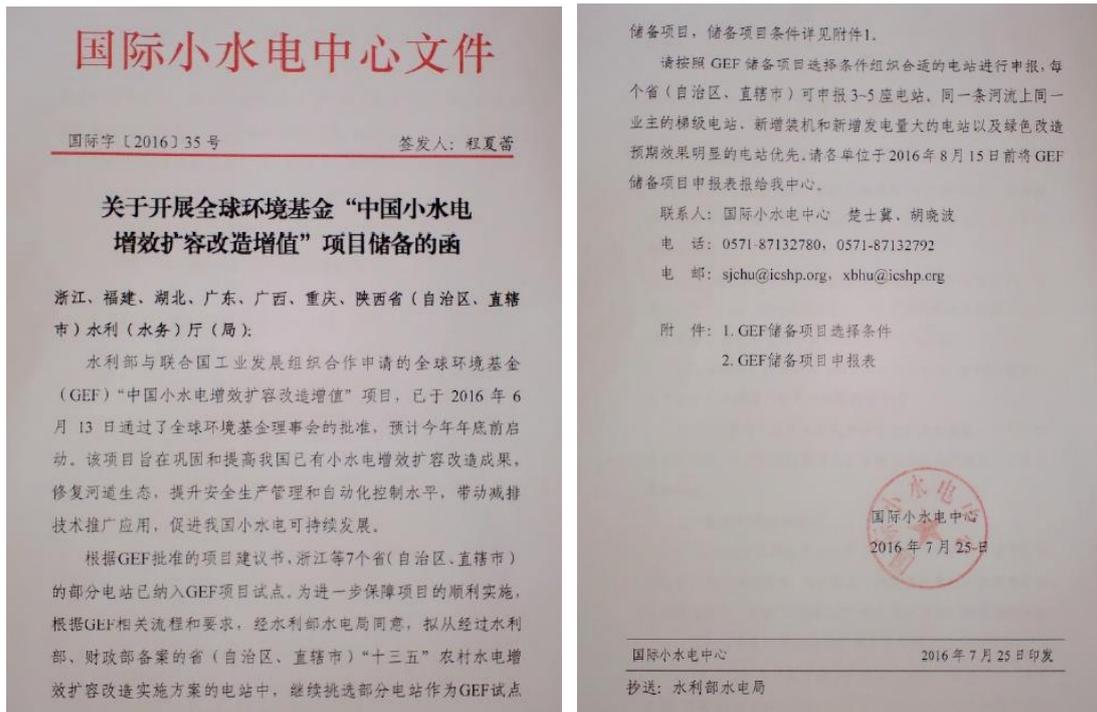


Fig. 3.18 Notice of the Project Management Office on Project Reserve

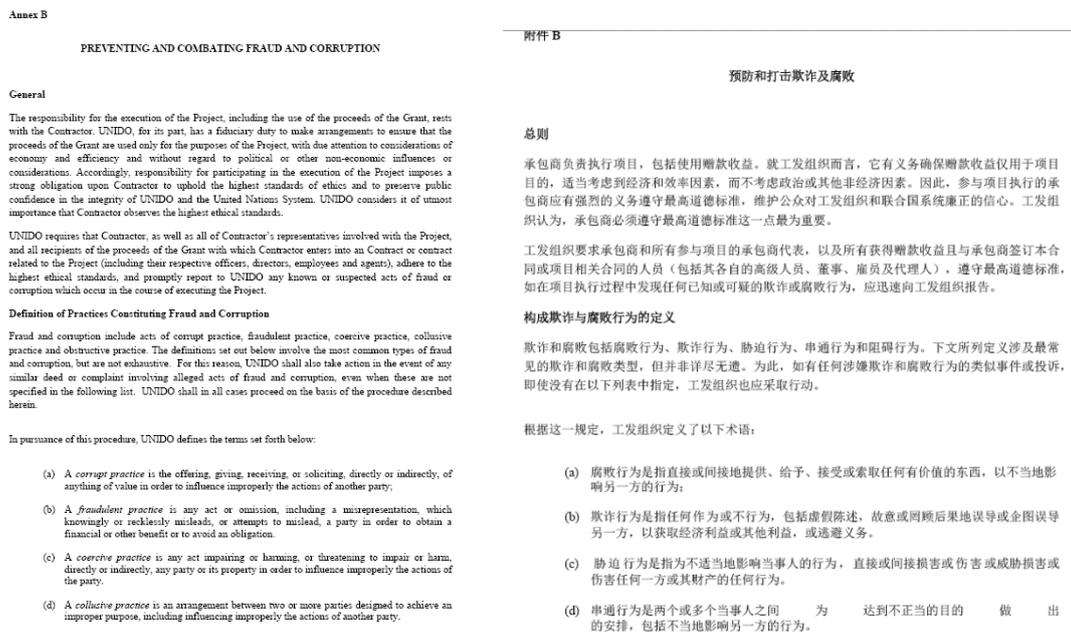


Fig. 3.19 Preventing and Combating Fraud and Corruption by UNIDO

The evaluation team believes that the risk prevention and control measures taken by the project are comprehensive and appropriate, which ensures the normal implementation of the project. According to the scoring criteria, the score of the index is 95.

3.2.4 Whether the resources are invested economically and effectively; whether the project content design and implementation mechanism are innovative

In response to this key evaluation issue, the evaluation team adopted two primary indicators for evaluation, namely, “Cost appropriateness”, “Innovation of project content design and implementation mechanism”.

3.2.4.1 Cost appropriateness

The bidding and equipment procurement involved in the project were carried out in accordance with relevant domestic laws, regulations and related procedures. The terms of the contract were well performed, and the overall cost of the project was effectively controlled. However, for some pilot projects, the prices of equipment, raw materials, labor services, etc. used in the project design are consistent with the market level at the time. Due to the long preparation time of the project and the rapid development of the economic situation, the prices have generally risen rapidly in recent years, resulting in a slight increase in the actual cost of some project activities.

The evaluation team believes that the rising cost poses some pressure on the partial implementation of the project, but has little impact on the overall project. According to the scoring criteria, the score of the index is 85.

3.2.4.2 Innovation of project content design and implementation mechanism

This project is the first pilot innovative model of UNIDO, which is implemented in a very special way. During the implementation of the project, UNIDO Authorization Center enters UNIDO’s Enterprise Resource Management System (SAP/ERP) as an external executive agency to carry out procurement management and financial management for the project, including procurement methods, competition types, bidding, contract formulation, the content and process of financial management, the operation method of the Enterprise Resource Management System (SAP), etc. In August 2017, UNIDO sent financial and procurement officials to China to conduct special training for the Project Management Office on the implementation of this project.

This mechanism has played a positive guiding and demonstration role to the project implementation, and helped the Project Management Office to learn from valuable

experiences of UNIDO in project management and internal organization management. The evaluation team believes that the project implementation mechanism is highly innovative. According to the scoring criteria, the score of the index is 85.



Fig. 3.20 Financial and procurement officers of UNIDO headquarters trained the Project Management Office.

3.3. Effectiveness

Based on the performance objectives of the project and the targeted beneficiaries, the evaluation team developed the evaluation indexes for performance evaluation from two key evaluation issues of the effect, namely, “Whether the project has achieved the stage performance target”, “Whether the expected actual beneficiary group is the target beneficiary group of the project”. According to the performance evaluation framework and index scoring and weight setting criteria, the relevance score of the project performance evaluation is 90.8, and the project is rated as “satisfactory”, as shown in Table 3.22.

Table 3.22 Project Effect Evaluation Index Development and Evaluation Results

Criteria (Weight)	Performance Rating	Weighted Score	Evaluation Score	Key Evaluation Issues	Primary Indicators	Secondary Indicators	Score
Effectiveness (20%)	Satisfactory	17.73	88.65	3.1 Whether the project has achieved the	3.1.1 The current realization degree of the project	3.1.1.1 SHP development policy	72

Criteria (Weight)	Performance Rating	Weighted Score	Evaluation Score	Key Evaluation Issues	Primary Indicators	Secondary Indicators	Score
				stage performance target (70%)	performance objective (50%)	3.1.1.2 Safe production and management level of pilot plants	80
						3.1.1.3 Ecological restoration of the river where pilot plants are located	92
						3.1.1.4 Generating capacity and carbon dioxide emission reduction of the unit put into operation	90
						3.1.1.5 Professional and management ability of the institutional personnel	76
						3.1.2 Whether the planned results are expected to be achieved upon completion of the project (50%)	/
				3.2 Whether the expected actual beneficiary group is the target beneficiary group of the project (30%)	3.2.1 Targeting degree of the project to the beneficiary group (50%)	/	98
					3.2.2 Coverage of the project to the beneficiary group (50%)	/	98

3.3.1 Whether the project has achieved the stage performance target

In response to this key evaluation issue, the evaluation team adopted two primary indicators for evaluation, namely, “The current realization degree of the project performance objective”, “Whether the planned results are expected to be achieved upon completion of the project”.

3.3.1.1 The current realization degree of the project performance objective

(1) Policy and institutional framework

Through the implementation of the project, the Green SHP Assessment Standard was implemented in August 2017. This standard interprets the connotation of green SHP, and stipulates the basic conditions, contents and methods for evaluation of green SHP. Since 2012, when the Ministry of Water Resources proposed the construction of “four hydropower projects” (livelihood hydropower, safe hydropower, green hydropower, and harmonious hydropower), the evaluation criteria and technical requirements of China’s green SHP have been unified for the first time, and the goal of establishing green SHP plants has been clarified, marking that China’s green SHP construction has entered a standardized process. In addition, the research on the green SHP evaluation and labeling system in compliance with the Green SHP Standard has improved the green SHP evaluation standard system, encouraged and guided the green SHP development, which is of great practical significance for the sustainable use of water resources. In addition to the above, other policy and institutional framework activities of the project are being launched as planned, and will further promote the overall development of China’s green SHP construction upon completion.

However, compared with all the performance targets of the activity, only a small part of the expected stage performance target has been realized at the time of evaluation. Most of the performance targets of the activities, including Green SHP Assessment Standard and aligned technical standards formulated and revised, Preferential green SHP policies recommended and developed and related policy introduced, Evaluation Criteria for Rural Hydropower Station Safe Production Standardization (provisional) rolled out, have not been achieved. According to the evaluation criteria, the score of this index is 72.

(2) Safe production and management level of pilot plants

At present, five plants have completed the up-to-standard construction of safe production standardization: Tangban Hydropower Plant (I), Yangdaohe Cascade Hydropower Plant (II), Majing Hydropower Plant (II), Taiping Hydropower Plant (II), Xinpingya Hydropower Plant (II). Other plants have also carried out safe production standardization as required, and it is expected to be completed before the end of next year. Through the implementation of the project, the safe production and management

level of the pilot plants will be further improved.

However, compared with all the performance targets of the activity, only a small part of the expected stage performance target has been realized at the time of evaluation. Most of the plants (17) have not yet completed the up-to-standard construction of safe production standardization. According to the evaluation criteria, the score of this index is 76.

(3) Ecological restoration of the river where pilot plants are located

Through the implementation of the project, ecological measures such as minimum flow discharge and its monitoring, construction of ecological weirs, river dredging are adopted for all pilot plants, ensuring the downstream water flow of plants, repairing and improving the ecological environment of 23 rivers.

According to the scoring criteria, the ecological restoration of the river where pilot plants are located has achieved most of the expected stage performance goals, and the score of this index is 92.



Fig. 3.21 Minimum Discharge and Ecological Weir of Qingshuitan Hydropower Plant



Fig. 3.22 Minimum Flow Discharge and Its Monitoring, Restoration of River Bank Land of Panxi Cascade Hydropower Plant



Fig. 3.23 Minimum Discharge and Its Monitoring of Gaofang Cascade II Hydropower Plant



Fig. 3.24 Minimum Discharge Monitoring and Sewage Treatment of Tangban Hydropower Plant

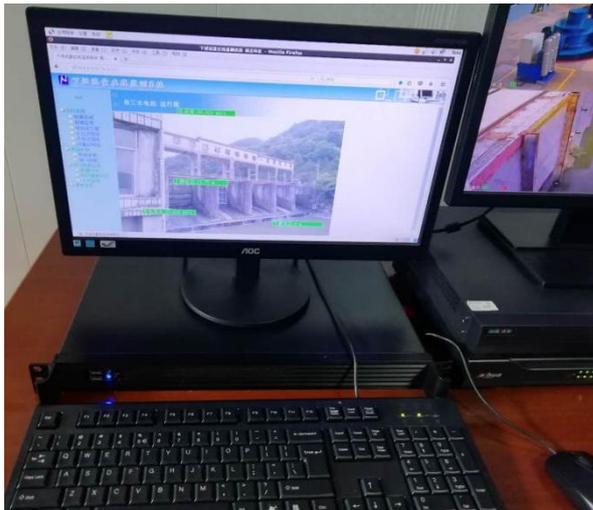


Fig. 3.25 Minimum Discharge Monitoring of Jiaosan/Tantou Hydropower Plant



Fig. 3.26 Ecological Weir of Jiaosan/Tantou Hydropower Plant



Fig. 3.27 Minimum Discharge and Its Monitoring of Yangdaohe Cascade Hydropower Plant (Yangdaohe)



Fig. 3.28 Minimum Discharge Monitoring of Yangdaohe Cascade Hydropower Plant (Chaotianhou)



Fig. 3.29 Minimum Discharge and Its Monitoring of Yangdaohe Cascade Hydropower Plant (Shijiaba)



Fig. 3.30 Minimum Discharge and Its Monitoring of Sandieling/Dongpai Hydropower Plant



Fig. 3.31 Minimum Discharge and Its Monitoring of Aibu Cascade II/III Hydropower Plant



Fig. 3.32 Minimum Discharge and Ecological Weir of Majing Hydropower Plant



Fig. 3.33 Ecological Weir of Xiaokeng Hydropower Plant



Fig. 3.34 Ecological Weir of Gaokeng Hydropower Plant



Fig. 3.35 Minimum Discharge Valve and Ecological Weir of Jingtanfeng/Huangyan Hydropower Plant



Fig. 3.36 Minimum Discharge and Its Monitoring of Taiping Hydropower Plant



Fig. 3.37 Minimum Discharge of Maoyandong Cascade II Hydropower Plant



Fig. 3.38 Ecological Unit and Minimum Discharge of Mabozi Hydropower Plant



Fig. 3.39 Minimum Discharge and Ecological Weir of Chahe Hydropower Plant



Fig. 3.40 Minimum Discharge and Channel Dredging of Xiakou Hydropower Plant



Fig. 3.41 Minimum Discharge of Baiyunxia Hydropower Plant



Fig. 3.42 Minimum Discharge of Xinpingya Hydropower Plant

(4) Additional installed capacity, accumulative electricity generation and GHG emission reduction

Through the implementation of the project, 16,010KW of additional installed capacity has been completed. 22,520KW of additional installed capacity is planned after the completion of the project, and 71.09% of the total has been completed. The accumulative electricity generation of the units put into operation is 326,247,644 kW·h, and the planned annual electricity generation is 149.768 million kW·h after the completion of the project. The cumulative GHG emission reduction is 236,760.1 tons, and the annual GHG emission reduction is planned to be 107,985 tons after the completion of the project.

According to the scoring criteria, all expected stage performance targets have been achieved in generating capacity and carbon dioxide emission reduction of the unit newly installed and put into operation. The score of the index is 90.

Table 3.23 Generating capacity and carbon dioxide emission reduction of the unit newly installed and put into operation

Provinces	GEF Pilot Plants	Additional Installed Capacity (kW)	Cumulative Electricity Generation (10,000 kW·h)	Grid Emission Factor (tCO²eq/MW·h)	Cumulative GHG Emission Reduction (tCO²eq)
Yunnan	Maoyandong Cascade II Hydropower Plant	2400	478.086	0.6775	3239.033
	Mabozi Hydropower Plant	0	0	0.6775	0
	Chahe Hydropower Plant	800	28.3708	0.6775	192.2122
Hubei	Jiugonghe Hydropower Plant	0	0	0.72305	0
	Zhoujialiang Hydropower Plant	400	640	0.72305	4627.52
	Yangdaohe Hydropower Plant	0	5479	0.72305	39615.91
	Chaotianhou Hydropower Plant	0	3474	0.72305	25118.76
	Shijiaba Hydropower Plant	750	2724.22	0.72305	19697.47
	Jiangjunzhu Hydropower Plant	0	0	0.72305	0
Chongqing	Majing Hydropower Plant	1400	2181.1	0.72305	15770.44
	Xiaokeng Hydropower Plant	0	0	0.72305	0
	Gaokeng Hydropower Plant	540	429.5756	0.72305	3106.046
	Jingtanfeng Hydropower Plant	970	1615	0.72305	11677.26
	Huangyan Hydropower Plant	120	39	0.72305	281.9895
	Taiping Hydropower Plant	2000	1021.412	0.72305	7385.319
Fujian	Tangban Hydropower Plant	1000	1777.392	0.7478	13291.34
	Jiaosan Hydropower Plant	1200	4296.308	0.7478	32127.79
	Tantou Hydropower Plant	520	2375	0.7478	17760.25
	Gaofang Cascade II Hydropower Plant	350	679.49	0.7478	5081.226
Shaanxi	Baiyunxia Hydropower Plant	960	999.8	0.7045	7043.591
	Xiakou Hydropower Plant	260	735.85	0.7045	5184.063

	Xinpingya Hydropower Plant	700	286.0512	0.7045	2015.231
Guangdong	Guanxi Hydropower Plant	1200	1112.8968	0.6775	7539.876
Guangxi	Sandieling Hydropower Plant	0	860	0.6775	5826.5
	Dongpai Hydropower Plant	0	331	0.6775	2242.525
	Aibu Cascade II Hydropower Plant	0	0	0.6775	0
	Aibu Cascade III Hydropower Plant	0	0	0.6775	0
Zhejiang	Qingshuitan Hydropower Plant	240	671.412	0.7478	5020.819
	Panxi Cascade II Hydropower Plant	0	157.2	0.7478	1175.542
	Panxi Cascade III Hydropower Plant	600	146.9	0.7478	1098.518
	Panxi Cascade IV Hydropower Plant	0	85.7	0.7478	640.8646
Total	/	16010	32624.7644	/	236760.1

(5) Professional and management ability of the institutional personnel

During the implementation of the project, the Project Management Office organized some domestic and foreign training, inspections and seminars. The personnel of each project unit learned about the advanced experience of green SHP at home and abroad, updated their concept, and improved their professional capabilities and business level of SHP. Other capacity-building activities of the project are being launched as planned, and will further increase the professional and management ability of the institutional personnel upon completion.

However, compared with all performance targets of the activity, only a small part of the expected stage performance targets has been achieved at the time of evaluation. Most of the performance targets, including Capacity building programme for SHP project owners, developers and technicians, Capacity building programme for officials on green SHP and Safe Production Standard, Awareness raising campaign delivered, have not been achieved. According to the evaluation criteria, the score of this index is 72.

3.3.1.2 Whether the planned results are expected to be achieved upon completion of the project

As of August 2019, all project activities have basically been carried out as planned, and it is expected that all project activities will be completed before closing on May 8, 2022.

Table 3.24 Progress of Project Activities

Outputs	Activities	Current Progress	Whether it can be completed before closing
Component 1 – Policy and institutional framework promoting green SHP plants			
1.1.1 Green SHP Assessment Standard and aligned technical standards formulated and revised	Review, revise and finalise the Green SHP Assessment Standard (including criteria, grading and assessment protocol)	To be started	Yes
	Develop the Technical Guidelines on Dehydration Recovery in Downstream River of Small Hydro aligned to Green SHP Assessment Standard		
	Develop Technical Guidelines on Green SHP Construction Measures		
	Develop Guidance on Green SHP Development		
	Develop the Green SHP Development Strategy		
	Develop the Green SHP Assessment Management Rules		
	Establishment and improvement of the online Management Information System for Green Hydropower		
1.1.2 Preferential green SHP policies recommended and developed	Development of green SHP assessment, certification and labeling system	Proceed as planned	Yes
	Support the local government to launch preferential policies for green SHP	To be started	Yes
	Recommendations provided to develop national level policies		
1.1.3 Evaluation Criteria for Rural Hydropower Station Safe Production Standardization (provisional) rolled out	Best practice recommendations for provisional safety regulations and assessment procedures	To be started	Yes
	Promote the implementation of the Evaluation Criteria for Rural Hydropower Station Safe Production Standardization and best practice recommendations nationwide		
	Guide the relevant provinces to issue implementation measures and regulations on safe production standards		
Component 2 – Greening and improving the management and safety standards of existing SHP plants			
2.1.1 23 business plans and feasibility studies finalised for upgrading SHP demonstration plants	Technical assistance provided on greening technology and safety measures, and business plans and feasibility studies finalised	Proceed as planned	Yes
2.1.2 23 selected SHP plants upgraded to green SHP demonstration plants with additional	Installation and commissioning of demonstration projects	Proceed as planned	Yes
	Environmental flow and performance monitoring and analysis	To be started	Yes
Assessment of the automation and technical level of the SHP stations			

capacity of approx. 22.5 MW			
2.1.3 Socio-economic and environmental impact of green SHP rehabilitation recorded	Carry out Environmental and Social Management Plans (ESMPs) at each site	To be started	Yes
	Carry out baseline socio-economic and environmental study of 10 representative plants before and after rehabilitation	To be started	Yes
	Documentation of results of demonstration projects and preparation of case studies	Not started	Yes
Component 3 – Knowledge base and capacities in the field of green SHPs and improved and safe SHP management			
3.1.1 Capacity building programme for SHP project owners, developers and technicians delivered to 1200 people	Training material developed and train-the-trainers trained	To be started	Yes
	Training programme delivered to project owners, developers, managers, technicians and design institutes		
	Study tour for project owners, developers, managers, technicians and design institutes	Completed	Completed
3.1.2 Capacity building programme for 200 officials on green SHP and Safe Production Standard	Training material developed on policy and regulation on Green SHP and on Safe Production Standard	To be started	Yes
	Training programme delivered to MWR/WRB officials in 8 provinces		
	Study tour for national and provincial level MWR/WRB officials in 8 provinces	To be started	Yes
3.1.3 Awareness raising campaign delivered	Green SHP awareness and training for project participants	Proceed as planned	Yes
	Develop green SHP and safety standards awareness material focused at the public and for project developers/owners and officials		
	Develop a Chinese website dedicated to green hydropower		
	Hold three regular national seminars		
	Hold an international green hydro event		
3.1.4 Establishment of pilot green SHP plants	Develop training material for green SHP establishment	To be started	Yes
	Training programme on green SHP establishment delivered to project owners, developers, managers and technicians		
3.1.5 Establishment of safe production standardization	Qualify 24 SHP plants meeting the criteria of green SHP as the Green SHP Plants	To be started	Yes
	Develop training material for safe production standardization establishment		
	Training programme on safe production standardization establishment delivered to project owners, developers, managers and technicians		
	Certify 24 SHP plants as Safe Production Standardization Plants		

The evaluation team believes that the planned results are expected to be achieved upon completion of the project, and according to the scoring criteria, the score of this index is 95.

3.3.2 Whether the expected actual beneficiary group is the target beneficiary group of the project

In response to this key evaluation issue, the evaluation team adopted two primary indicators for evaluation, namely, “Targeting degree of the project to the beneficiary group”, “Coverage of the project to the beneficiary group”.

3.3.2.1 Targeting degree of the project to the beneficiary group

At the time of project design, the target beneficiary groups are mainly 23 pilot plants in eight provinces and their communities. After the implementation of the project, the design objectives are not adjusted, so the targeting degree of the beneficiary groups is highly consistent. According to the scoring criteria, the score of this index is 98.

3.3.2.2 Coverage of the project to the beneficiary group

The actual beneficiary groups cover all the planned beneficiary groups. In addition to the benefits from the project design objectives, the beneficiary groups will also enjoy the benefits of employment opportunities, improved traffic conditions, ecological restoration and other aspects brought by the project. Therefore, the benefit coverage is highly consistent with the design. According to the scoring criteria, the score of this index is 98.

3.4. Sustainability

Based on the sustainability of the project, the evaluation team developed the evaluation index for performance evaluation around two key evaluation issues of the effect, namely, “Whether the project is financially sustainable”, “Whether the project implementation is sustainable”. According to the performance evaluation framework and index scoring and weight setting criteria, the relevance score of the project performance evaluation is 93.88, and the project is rated as “highly sustainable”.

Table 3.25 Project Effect Evaluation Index Development and Evaluation Results

Criteria (Weight)	Performance Rating	Weighted Score	Evaluation Score	Key Evaluation Issues	Primary Indicators	Secondary Indicators	Score
Sustainability (10%)	Highly sustainable	9.24	92.35	4.1 Whether the project is financially sustainable (50%)	4.1.1 Whether the project fund can meet the needs of the project implementation (100%)	/	95

Criteria (Weight)	Performance Rating	Weighted Score	Evaluation Score	Key Evaluation Issues	Primary Indicators	Secondary Indicators	Score
				4.2 Whether the project implementation is sustainable (50%)	4.2.1 Whether the current economic and social factors hinder the implementation of the project (25%)	/	92
					4.2.2 Sustainability of the project policy (25%)	/	92
					4.2.3 Sustainability of the project implementing agency (25%)	/	95
					4.2.4 Sustainability of the project personnel (25%)	/	92

3.4.1 Whether the project is financially sustainable

In response to this key evaluation issue, the evaluation team adopted one primary indicators for evaluation, namely, “Whether the project fund can meet the needs of the project implementation”.

3.4.1.1 Whether the project fund can meet the needs of the project implementation

The total investment budget of the project has been designed and approved in a standardized way, and the investment scale is appropriate, including part of central and local financial funds, which is reliable and stable. The project implementation unit strictly controls the implementation of the budget, the supporting funds have been in place as planned, and the investment in the later stage is guaranteed. According to the scoring criteria, the score of this index is 95.

3.4.2 Whether the project implementation is sustainable

In response to this key evaluation issue, the evaluation team adopted four primary indicators for evaluation, namely, “Whether the current economic and social factors hinder the implementation of the project”, “Sustainability of the project policy”, “Sustainability of the project implementing agency”, “Sustainability of the project personnel”.

3.4.2.1 Whether the current economic and social factors hinder the implementation of the project

Since the launch of the project in 2017, the economic and social environment has been conducive to the implementation of the project on the whole. In 2017, it is proposed at the National Green SHP Construction Site Work Conference that for the development of green SHP in the new era, we should accurately grasp the people's new expectations for a better life in the new era, and deeply understand the green development concept of "Lucid waters and lush mountains are invaluable assets." In 2019, it is pointed out in Field Conference on Green Transformation of Rural Hydropower that to promote the green development of rural hydropower in the new era, we should integrate thoughts and actions into Xi Jinping's thoughts on ecological civilization, strive to address the adverse impact of SHP on ecological environment, provide more quality water ecological products to meet people's ever-growing needs for a better life and a beautiful ecological environment, and continue to promote the SHP capacity and green transformation. At present, the Ministry of Water Resources is vigorously promoting the construction of green SHP plants nationwide. The ecological awareness of the whole society and the demand for the development of green SHP plants are constantly increasing, and there are no economic, social and environmental factors that hinder the implementation of the project. According to the scoring criteria, the score of this index is 92.

3.4.2.2 Sustainability of the project policy

After the development concept of "innovation, coordination, green, openness and sharing" was put forward, green development has become a crucial national development strategy and requirement, providing a solid guarantee for the development of green SHP. A multi-department cooperation mechanism has been established for the project. The Project Management Office actively communicates with UNIDO, the Ministry of Water Resources, the Ministry of Finance, provincial project offices, pilot plants and other relevant units to coordinate and solve the problems in the project and ensure the smooth progress of the project. The project provinces strictly abide by a series of management systems formulated by the Project Management Office, ensuring the sustainability of project policies. According to the scoring criteria, the score of this index is 92.

3.4.2.3 Sustainability of the project implementing agency

The evaluation team consulted relevant documents about the establishment and change of the project organization and had a discussion with the personnel of relevant project units such as the Project Management Office and provincial project offices, concluding that the project organization is stable. The Project Management Office is located in the International Center on Small Hydro Power. Eight provincial project offices are located in the Department of Water Resources of each province. These units are government agencies that can ensure the continued and stable implementation of the GEF project. According to the scoring criteria, the score of this index is 95.

3.4.2.4 Sustainability of the project personnel

Through discussion with the personnel of the project office, it is learned that the project personnel at all levels are stable and they have clear division of work. After relevant training, the management and technical personnel of the project can be competent for project management services in accordance with relevant procedures and methods of the project, thus ensuring the smooth implementation of the project. According to the scoring criteria, the score of this index is 92.

4. Performance Evaluation Conclusions

Based on the above, the evaluation team agreed that the comprehensive performance rating of the project is “smooth implementation”, in which the project relevance is rated as “highly relevant”, the project efficiency is rated as “high efficiency”, the project effect is rated as “satisfactory”, and the project sustainability is rated as “highly sustainable”.

Table 4.1 Project Performance Evaluation Rating Table

Evaluation criteria	Weight (%)	Evaluation score (Percentage)	Weighted average score	Performance rating
Relevance	20.00	96.5	19.3	highly relevant
Efficiency	50.00	89.43	44.72	highly efficient
Effect	20.00	88.65	17.73	satisfactory
Sustainability	10.00	93.88	9.39	highly sustainable
Comprehensive performance	100.00	91.13	91.13	smooth implementation

4.1. Relevance

During the project evaluation, the project objectives and content design are highly consistent with the development strategy and policy priorities of China's small hydropower industry. The project content is highly consistent with a series of important development strategies such as "vigorously promoting the construction of four hydropower projects", "accelerating the construction of water ecological civilization" and "developing green small hydropower". The project output design closely revolves around the problems faced by the sustainable development of small hydropower industry in China. The performance score of the relevance is 96.5, and the relevance rating is "highly relevant".

4.2. Efficiency

The target benefit groups of the project are 23 pilot hydropower plants and their communities in 8 project provinces selected according to strict standards. The positioning of the benefit groups is appropriate. During the 13th Five-Year Plan, the main objectives of rural hydropower upgrade are to update equipment, increase installed capacity and increase annual electricity generation. However, in addition to economic benefits, green and sustainable development are increasingly important to the development of hydropower plants. Besides, the community where the hydropower plant is located is also in increasing demand for local employment, gender equality, transportation, and ecology regarding the upgrade of the hydropower plant. Therefore, the primary needs of the target benefit groups of the project are appropriate. The project was signed and started in time in May 2017, with an expected implementation period of 5 years (May 2017 to May 2022), which is consistent with the planned implementation period; all designed project activities are implemented as planned and the expected stage output is achieved; the project funds are generally in place in time, and the use of funds is in compliance with the requirements; the project has established a stable organization, effective management system, the risk control measures and information communication mechanism, which can meet the management needs during the implementation; the project cost is properly controlled, and the input and output of the project are consistent with the cost effectiveness principle; and the project content design and implementation mechanism are innovative to some extent. The performance score of the efficiency is 89.43, and the efficiency rating is "highly efficient".

4.3. Effectiveness

The overall effect of this project is good. Each index has basically achieved the stage performance target. It is expected that all the planned results will be achieved when the project is completed, and the implementation of the project will bring significant social benefits. At the same time, the actual benefit group of the project is consistent with the design goal, and the actual benefit groups of the project cover all planned benefit groups. The performance score of the effect is 88.65, and the effect rating is “satisfactory”.

4.4. Sustainability

The project finance has high sustainability. The total investment budget of the project is designed by the standard and approved, and the investment scale is appropriate; the project implementation unit strictly controls the execution of the budget, and the supporting funds have been in place according to the schedule. The subsequent capital investment is guaranteed, which can meet the needs of the follow-up implementation of the project; a multi-sectoral cooperation mechanism has been established for the project, and each project province strictly abides by a series of management systems formulated by the central project management office, and the sustainability of project policies is guaranteed; the central project management office is located at the International Center of Small Hydropower, and the eight provincial project management offices are located at the provincial water conservancy department, with long-term stability; the project personnel at all levels are stable and the division of business is clear, which can meet the needs of project implementation; the human resources and management system can guarantee the sustainable operation of the project. The performance score of sustainability is 93.88, and the evaluation rating is “highly sustainable”.

5. Lessons Learned & Suggestions

5.1. Successful Experience

5.1.1 Leaders attach great importance and the management organization is sound and effective

The strong support from leaders at all levels and a sound and effective management organization are the prerequisites for the smooth implementation of the project. The

project steering committee is composed of the relevant responsible personnel from Department of Rural Water Resources and Hydropower (MWR), Department of International Cooperation and Science and Technology (MWR), Department of International Financing Operation (MOF), Department of Economic Construction (MOF), the International Center of Small Hydropower, Department of Energy and Climate Change of UNIDO, and provincial water conservancy administrative department where the project is located. It is mainly responsible for the decision-making of major issues such as project policy design, target tasks, fund allocation, as well as the project implementation progress, quality and fund arrangement. Under the leadership of the project steering committee, the central project management office closely cooperates and smoothly communicates with provincial project management offices to ensure the smooth implementation of the project.

5.1.2 A sound internal management system is an important guarantee for the smooth implementation of the project.

In order to strengthen project management and ensure the smooth implementation of the project, the central project management office formulated and issued the GEF Project Management Measures and GEF Project Financial Management Measures according to the actual situation and the requirements of the state and GEF on the project management, which defines the setting and responsibilities of the project management offices at all levels, establishes the project technical management system, and formulates the annual implementation plan of the project, the project technical review procedures, and management implementation mechanisms. The project was carried out accordingly during the implementation, which effectively promoted the progress of the project.

5.1.3 A number of technical and managerial personnel was experienced and trained through the implementation of international project.

This project has trained a group of management personnel, who have participated in the whole foreign-funded project, for each project unit. In the initial stage of project implementation, most of the personnel have basically no experience in managing or implementing grant projects funded by international financial organizations, and lack of professional ability in project management and implementation. Due to the

limitations of transportation, facilities, and human resources, the exchange of project management and implementation information is not very smooth. In the process of project implementation, the central project management office organized targeted training to help each project unit get familiar with the whole process of project implementation and master project management methods. Through training and learning, the overall level of all project participating teams, including relevant government departments, project implementation units, design institutes, etc., has been improved to ensure the smooth implementation of the project.

5.2. Existing Problems

5.2.1 The project innovation model pilot needs to explore and run-in constantly.

In order to strengthen the implementation of the project, UNIDO has selected GEF small hydropower project in China as the innovative model pilot project, and the center enters directly into the UNIDO project management system SAP, to participate the project's implementation and management. In September 2017, UNIDO headquarters sent staff to Hangzhou to train SAP system operation, and established a system account at the end of 2017. However, in practice, it was found that in the inception phase the authority required for project execution are limited during the process of expert recruitment, financial budget, which prevented the timely advancing the bidding work of related activities, and affected the project implementation progress to a certain extent. Meanwhile, the internet connection to SAP from China has undergone uncertainty from time to time.

5.2.2 Insufficient withdrawal reimbursement documentation level.

The payment reimbursement documents prepared by some pilot project owners are of poor quality and repeatedly need to be supplemented, modified and reviewed, which results in the delay of GEF grant delivery.

5.2.3 Insufficient publicity for the project.

The GEF project is a model of cooperation between China and the UNIDO in the field of small hydropower. The implementation of the project will drive the sustainable development of small hydropower in China, contributing the China's wisdom to the world's small hydropower development through providing China's solutions. However, comparing the publicity of GEF project by the central PMO, the publicity in each pilot

province is relatively less.

5.2.4 Some local green SHP development supporting policies need to be strengthened.

With the exception of Zhejiang and Fujian, other provinces implementing the GEF project haven't issued relevant supporting policies for the development of green SHP yet.

5.3. Countermeasure & Suggestions

5.3.1 Strengthen the communication with UNIDO to ensure the project innovation mode playing its maximum role.

As for the problems happened in the application of the system, it still needs to explore and run-in and also need to strengthen the communication with the headquarters of UNIDO to obtain necessary cooperation for the purpose of ensuring that the innovative mode of projects plays its maximum role.

5.3.2 Strengthen training on withdrawal reimbursement and ensure the grants are timely in place.

The central project management office sorts out the problems that the project owners are not familiar with the GEF rules, and continuously organizes relevant personnel for training and learning. Meanwhile, for the provincial-level projects, the supervision and inspection of project owners shall be strengthened. It is suggested to carry out special training on GEF project withdrawal reimbursement towards management personnel of project execution units and contractors, to encourage contractors to timely provide payment invoices, and prepare high-quality guarantee documents, so that the project management office can review the documents in time to provide progress reports meeting payment requirements, and ensure the high efficiency of reimbursement process for timely delivery of GEF grants.

5.3.3 Summarize the highlights of value-added upgrading, increase the intensity of project publicity.

China is in the process of vigorously promoting the construction of ecological civilization. As a demonstration project, this project is a rare reference for other domestic small hydropower upgrade projects with its advanced project concepts,

methods, practices, and various pilot projects established. It is suggested that in the later implementation process of the project, summarize the project experience more often, and promote the advanced project practices to other domestic projects through vigorously promotion and presentation of the GEF project, such as planned seminars, media introduction, and subject research.

5.3.4 Encourage each province release the policies promoting the development of green SHP.

Encourage each province actively sort the existing or plan for the issuance of small hydropower preferential policies. Strive to form some long-term mechanism after the GEF project completion, such as the establishment of green ecological compensation mechanism for small hydropower plants, financial incentive system for green small hydropower establishment, and tax refund system for green SHP plants, to promote the sustainable development of small hydropower.

6. Annex

Annex 1: Performance Evaluation Task Book

According to the *Letter on Performance Evaluation of Loan and Grant Projects of International Financial Organizations and Foreign Governments in 2019* and the *Operational Guidelines for Performance Evaluation of International Financial Institutions Loan Projects* (2015 Revised version) and other documents, the GEF Upgrading of China Small Hydropower Capacity Project (hereinafter referred to as “the GEF project”) is selected as the evaluation project, and the task book is formulated accordingly.

I. Evaluation purpose

1. In accordance with the requirements of the *Operational Guidelines for Performance Evaluation of International Financial Institutions Loan Projects*, an objective and fair evaluation of the relevance, efficiency, effectiveness, sustainability and comprehensive performance of this project is carried out.
2. Through the mid-term performance evaluation, find out the problems existing in the implementation of the project, and put forward specific suggestions to improve the implementation of the project.
3. Through the mid-term performance evaluation, summarize the experience and practices of the project implementation, and provide reference for the follow-up implementation of the project and the development of similar projects.
4. Further complete and improve the performance evaluation method system of grant projects of international financial organizations, and promote the construction of performance evaluation system.

II. Project Profile

1. Project background

In order to promote green sustainable development of small hydropower industry in our country, mainly focusing on solving the small hydropower’ s problems of river

ecological restoration, safety production management and improving the level of automation control, in February 2014, the Ministry of Water Resources and UNIDO work in cooperation to start the declaration of the GEF project on “Upgrading China SHP Capacity” (the following referred to as the “ GEF project”). The GEF Governing Council approved the project concept book in October 2014 and formally approved the project proposal in June 2016. The project takes for five years, with the United Nations industrial development organization (UNIDO) designated as the international executive agency, the Ministry of Finance as the domestic counterpart unit, Ministry of Water Resources as domestic executive agency, the International Center of Small Hydropower as designated implementing agency, and completed by the relevant water conservancy department of eight pilot provinces (autonomous regions and municipalities directly under the central government) and 23 pilot plant owners together.

2. Project objective

The project aims to leverage the advanced concept and funding of the GEF. Relying on the implementation of the rural hydropower upgrading project under the “13th Five-Year Plan”, further increase the added value of the small hydropower renovation project, promote the establishment of green small hydropower development policy, cultivate green small hydropower stations, construct the safety production standard demonstration power plant, introduce the advanced equipment and technology and strengthen the capacity building on small hydropower capacity, etc.

3. Project components and activities

The project consists of the following four components:

(1) Promote the establishment of sustainable green small hydropower development policies and institutional frameworks, support the introduction of incentive measures, promote the safety production standardization of small hydropower plant, and issue guidelines, technical guidelines, industry standards, and management methods, etc. for green small hydropower construction;

(2) Renovate small hydropower stations, improve the construction and safety standardization management level of green small hydropower stations, complete 23 pilot hydropower plants, and carry out environmental and safe production related

measures;

(3) Build a knowledge platform for green small hydropower and safety production management to strengthen capacity building, deliver training programs to relevant government officials, technical and management personnel of small hydropower projects, organize domestic and foreign study tours and seminars, strengthen publicity, and promote the establishment of green small hydropower and safety standardization hydropower stations;

(4) Monitoring and evaluation of the project.

4. Implementation

In May 2017, UNIDO signed the Project Implementation Agreement and Project Execution Agreement with the Ministry of Finance and the Ministry of Water Resources respectively; in July 2017, UNIDO signed the Project Agreement with the International Center of Small Hydropower; and in May 2018, the Ministry of Finance signed the Grant Implementation Agreement with the Ministry of Water Resources. The grant closing date is May 8, 2022.

In 2017, the National Project Coordination Committee (NPCC) was established, composed of representatives from the Ministry of Water Resources, the Ministry of Finance, UNIDO, the International Center of Small Hydropower and the project local provincial water conservancy department of the province, being responsible for the project's research, decision-making, organization and coordination of major items. ICSHP set up a central project management office to guide the preliminary preparations and management implementation work. Provincial project management offices in eight pilot provinces are set up to charge the organization, implementation, management and monitoring of local projects. "GEF project management measures" and "GEF project financial management measure" and so on are formulated and issued.

During the implementation of the project, relevant government departments, project management offices at all levels and project implementation units have strictly implemented the relevant provisions of the Project Implementation Agreement, Project Executive Agreement, Project Contract Agreement and Grant Implementation

Agreement. Up to now, major activities of GEF project are continuously progressed as planned.

III. Evaluation Scope

The evaluation team made an objective and fair evaluation of the project's input, activity, output and effect in accordance with the requirements of the Operational Guidelines for Performance Evaluation of International Financial Institutions Loan Projects. The evaluation period was from June 2016 when GEF Council approved the project proposal to September 2019 when the performance evaluation took place.

IV. Stakeholders

(1) United Nations Industrial Development Organization (UNIDO): the international executive agency of GEF project, fully responsible for the supervision, evaluation and implementation of the project.

(2) Ministry of Finance: the domestic counterpart unit of GEF project, responsible for the management of GEF's domestic investment.

(3) Ministry of Water Resources: the domestic executive agency of GEF project, managing project activities.

(4) Central project management office: located at the International Center of Small Hydropower, responsible for executing the decisions of the NPCC, organizing, coordinating, guiding and managing the implementation of the project.

(5) Provincial project management offices of Zhejiang, Fujian, Hubei, Guangdong, Guangxi, Chongqing, Yunnan, Shaanxi (provinces, autonomous regions, and municipalities directly under the central government): responsible for the organization, implementation, coordination, management, supervision and evaluation of pilot projects in the provinces (autonomous regions, and municipalities directly under the central government).

(6) Panxi Cascades Hydropower Plant, Qingshuitan Hydropower Plant, Gaofang Cascade II Hydropower SubPlant, Tangban Hydropower Plant, Jiaosan/Tantou

Hydropower Plant, Gaofang Hydropower SubPlant, Yangdaohe Cascade Hydropower Plant, Zhoujialiang Hydropower Plant, Jiugonghe Hydropower Plant, Guanxi Hydropower Plant, Sandieling/Dongpai Hydropower Plant, Aibu Cascade II/III Hydropower Plant, Majing Hydropower Plant, Xiaokeng Hydropower Plant, Gaokeng Hydropower Plant, Taiping Hydropower Plant, Jingtanfeng/Huangyan Hydropower Plant, Maoyandong Cascade 2 Hydropower Plant, Mabozi Hydropower Plant, Chahe Hydropower Plant, Baiyunxia Hydropower Plant, Xiakou Hydropower Plant, Xipingya Hydropower Plant: the direct beneficiaries of the project, responsible for providing supporting funds for the project as supplementary funds for GEF grants to upgrade small hydropower plants and achieve the project goals.

(7) The communities where pilot hydropower plants are located: indirect beneficiaries of the project.

In the process of performance evaluation, the evaluation team shall fully communicate with the stakeholders above, collect project information and solicit opinions from stakeholders.

V. Key evaluation questions

The performance evaluation of the project shall focus on the following 10 key questions, and develop and design specific evaluation indicators accordingly:

- (1) Do the project objective and content design align with the current national, industrial and regional development strategies and can they effectively solve practical problems?
- (2) Is the positioning of the project target benefit groups (and the determination of their primary needs) appropriate?
- (3) Has the project been implemented as planned and achieved phased output?
- (4) Is the project budget invested and used as planned?
- (5) Is the setting of the project management organization (and the selection of the project implementation organization) appropriate? Are project management and internal control in place and can they ensure the effective implementation of the project?
- (6) Is the resource input of the project economically effective? Are the project content design and implementation mechanism innovative to some extent?

- (7) Has the project achieved the phased performance objectives?
- (8) Are the actual benefit groups of the project expected to be the target benefit groups of the project?
- (9) Is the project finance sustainable?
- (10) Is the project implementation sustainable?

VI. Evidence collection and analysis method

In order to complete the evidence collection, the evaluation team shall use (but not limited to) the following methods:

(1) File research. Conduct in-depth research, comparison and analysis on project documents, including Project Implementation Agreement, Project Execution Agreement, Project Contract Agreement, Grant Implementation Agreement, Project Proposal, Progress Report, etc., understand project information, and collect evidence required for performance evaluation.

(2) Seminars. The provincial project management offices, project implementation and industry experts, and other stakeholders are convened to participate the seminars organized and coordinated by the central project management office to understand the situation related to the project performance but not reflected in the project files.

(3) On-site research. Conduct on-site investigations of project implementation units and implementation locations, understand the implementation of the project, solicit the opinions of stakeholders, and verify project-related information.

(4) Questionnaires. Design questionnaires for project units and stakeholders to collect information on project operation and benefits.

(5) Internet search. Through Internet search, collect evidence and information on China's small hydropower safety, green development status, and relevant policies of the state, local governments, and industries.

In order to complete the performance analysis task, the evaluation team shall use (but not limited to) the following methods:

(1) Comparative analysis. Analyze the achievement of planned goals by comparing

the actual indicators and the planned indicators.

(2) Contribution analysis. The main analysis is whether the realization of the planned goals all comes from the contribution of the project, and whether there are other external influential factors.

(3) Attribution analysis. On the one hand, analyze the reasons why the planned goals can be achieved, and summarize the experience from the effective measures taken by the project unit and the management department. On the other hand, analyze the reasons for the failure of the planned indicators, and find out problems and lessons can be summarized to facilitate the improvement of project performance.

VII. Expected results

The evaluation team shall submit the following results within a specified period of time:

- (1) Submit the GEF Project Performance Evaluation Framework by September 2019.
- (2) Submit the GEF Project Performance Evaluation Implementation Plan by September 2019.
- (3) Submit the GEF Project Performance Evaluation Report (preliminary draft) by November 2019.
- (4) Submit the GEF Project Performance Evaluation Report (final draft) by December 2019.

The above-mentioned results submitted by the evaluation team shall meet the requirements of the Operational Guidelines of International Financial Organization Loan Projects; the indicator framework is reasonably designed; the implementation plan is comprehensive and specific, and the personnel and time arrangements are practical; the evaluation report is standard in format, complete in content, clear and accurate in expression, and the conclusion is objective, fair and comprehensive; the summary of problems and experiences shall be fully objective, and the evaluation suggestions shall have strong pertinence and application value.

VIII. Evaluation team

There shall be no less than 3 members of the evaluation team, including one leader .

Members of the evaluation team shall not have any conflict of interest with the evaluation project.

Members of the evaluation team shall have the following abilities:

(1) Performance evaluation knowledge and skills. Possess the knowledge, skills and experience required for successful performance evaluations. Among them, the leader of the evaluation team shall have more than 3 years of experience in performance evaluation.

(2) Communication skills. Have good communication skills, be able to communicate well with stakeholders, promote stakeholders to participate in performance evaluation and provide necessary assistance.

(3) Organization and coordination capability. Have good organizational and coordination capabilities, including organizing and coordinating various resources, evaluating the progress of different tasks, and ensuring that the evaluation tasks are completed within the specified time.

(4) Professional knowledge. Be familiar with the safety and green development status, relevant policies and professional knowledge of small hydropower in China. Among the team members, there shall be at least one expert with professional background in water conservancy and hydropower.

IX. Implementation plan

The evaluation task will start in September 2019 and end in January 2020. See the table below for specific arrangements:

No.	Activity description	Schedule	Responsible
1	Formulate the evaluation task book	September, 2019	International Center of Small Hydropower
2	Develop performance evaluation framework	September, 2019	Evaluation Team
3	Generate evaluation implementation plan	September, 2019	Evaluation Team

4	Evaluation implementation	October, 2019	Evaluation Team
5	Submit the preliminary draft of the report	November, 2019	Evaluation Team
6	Feedback from stakeholders	December, 2019	International Center of Small Hydropower and other stakeholders
7	Final draft of the evaluation report	December, 2019	Evaluation Team
8	Disclosure and application of evaluation results	December, 2019 - January, 2020	International Center of Small Hydropower

X. Responsibilities of the management departments

(1) International Center on Small Hydro Power will provide the following support to the evaluation team: providing project files, including project documents, progress reports, project agreements and other relevant documents; assisting the performance evaluation team to communicate with the project management offices and obtain relevant work reports; providing necessary coordination for the evaluation team to hold seminars, issue questionnaires and conduct field investigations; and providing necessary support to consult relevant experts.

(2) International Center on Small Hydro Power supervises the work progress of the evaluation team in strict accordance with the requirements of the evaluation task book. The evaluation team shall report the progress of the evaluation to the International Center of Small Hydropower on a regular basis and accept the supervision of the International Center of Small Hydropower.

(3) International Center on Small Hydro Power is responsible for the disclosure and application of the evaluation results, submitting the Evaluation Report to the Ministry of Finance, the Ministry of Water Resources, project management offices at all levels and project implementation units, and informing the evaluation results to the project authorities; submitting the performance evaluation suggestions to department leaders, project offices, project units and relevant competent departments, and tracking the feedback of relevant departments and units.

Annex 2: Performance Evaluation Implementation Plan

No.	Evaluation activities	Output	Schedule
1	Develop the implementation plan of the evaluation task according to the “Evaluation Task Book”	Implementation plan of evaluation tasks	September, 2019
2	Discussion meeting for evaluation team members (decomposition and division of evaluation task)	Evaluation implementation plan	September, 2019
3	File research	Project basic information table	September, 2019
4	Development of performance evaluation framework	Project performance evaluation framework	September, 2019
5	Internet search	Policies and regulations related to the project	September, 2019
6	Design project unit survey questionnaire	Statistical table of questionnaire results of project units	September, 2019
7	Questionnaire distribution, collection and result statistics of project units	Statistical table of questionnaire results of project units	October, 2019
10	Discussion meeting for all members of the team (list of the design project units and the project management offices)	List of questions in forum	September, 2019
11	Organize forums for project units and project management offices	Forum minutes	October, 2019
12	Design the questionnaire of benefit groups	Questionnaire of benefit groups	September, 2019
13	Questionnaire distribution, collection and result statistics of benefit groups	Statistical table of questionnaire of benefit groups	October, 2019
14	Evidence collation	Evidence classification summary table corresponding to evaluation indicators	October, 2019
15	Discussion meeting for all members of the team (setting the performance evaluation scoring standard)	Performance evaluation scoring standard	October, 2019
16	Scoring and rating indicators	Performance evaluation scoring result	October, 2019
17	Evaluation analysis	Evaluation conclusion, experience, questions and suggestions	October, 2019
18	Prepare the first draft of the performance evaluation report	The performance evaluation report (preliminary draft)	November, 2019
19	Communication with stakeholders	Summary of the suggestions and opinions of stakeholders	December, 2019
20	Prepare the final draft of the performance evaluation report	The performance evaluation report (final draft)	December, 2019
21	Application and disclosure of evaluation results	Application and disclosure of evaluation results	January, 2020

Annex 3: Performance evaluation indicator framework

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
Relevance	1.1 Whether the project objectives and content design conform to the current development strategy of the state, industry and region, and effectively solve practical problems	1.1.1 The conformity between the project objectives and the development strategy and policy priorities of China's SHP industry	/	<ul style="list-style-type: none"> The project aims to leverage the advanced concept and funds of the Global Environment Facility (GEF). Relying on the implementation of the rural hydropower upgrading project under the "13th Five-Year Plan", further increase the added value of the small hydropower renovation project, mainly focusing on solving the small hydropower's problems of river ecological restoration, safety production management and improving the level of automation control so as to promote the healthy and sustainable development of China's small hydropower industry, achieve considerable global environmental benefits, and accumulate experience for global small hydropower development. The "Opinions on the Development and Planning of Hydropower Resources of Small and Medium-sized Rivers" issued by the Ministry of Water Resources in 2012 focused on building four hydropower projects as the guiding ideology, benefiting people's livelihood and protecting the ecology as the basic principles of planning, and studying environmental protection countermeasures as an important part of the planning. The "Opinions on Accelerating the 	<ul style="list-style-type: none"> Project proposal "Opinions on the Development and Planning of Hydropower Resources of Small and Medium-sized Rivers" "Opinions on Accelerating the Construction of Water Ecological Civilization" (Water Resources [2013] No. 1) "Opinions on Accelerating the Construction of Water Ecological Civilization" (Water Resources [2013] No. 1) The 13th Five-Year Plan for Rural Hydropower Development No. 1 Central Document in 2016 Field Work Conference of National Green Small 	<ul style="list-style-type: none"> File research Internet search

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
				<p>Construction of Water Ecological Civilization” (Water Resources [2013] No. 1) issued by the Ministry of Water Resources in 2013 included the construction of green small hydropower into water ecosystem protection and restoration;</p> <ul style="list-style-type: none"> • In the “13th Five-Year Plan” outline for rural hydropower development in 2015, the overall requirement is still vigorously promoting the construction of the four hydropower projects, which requires strengthening the construction of ecological civilization of rural hydropower, strengthening the ecological environment protection in the whole process of rural hydropower planning, design, construction and operation, actively promoting the construction of green small hydropower, and promoting the experience of green small hydropower construction in reducing water reach management, minimum discharge flow supervision, etc., to guide the rural hydropower industry to better implement the requirements of ecological environmental protection, and encourage all localities to explore supporting policies suitable for the construction of green small hydropower in the region in combination with local conditions. • The No. 1 Central Document in 2016 clearly requires the “development of green small hydropower”. • In 2017, Vice Minister Lu Guihua proposed at the Field Work Conference of National Green 	<p>Hydropower Construction in 2017</p> <ul style="list-style-type: none"> • The on-site meeting on Green Renovation of Rural Hydropower in 2019 	

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
				<p>Small Hydropower Construction that the development of green small hydropower in the new era shall accurately grasp the people's new expectations for a better life in the new era, and deeply understand the green development concept that green water and green mountains are invaluable assets.</p> <ul style="list-style-type: none"> In 2019, Vice Minister Tian Xuebin pointed out at the on-site meeting on Green Renovation of Rural Hydropower that in order to promote the green development of rural hydropower in the new era, it is necessary to unify thoughts and actions with Xi Jinping's thoughts on ecological civilization, strive to solve the adverse effects of small hydropower on the ecological environment, strive to provide more high-quality aquatic ecological products, and constantly meet the people's growing needs for a better life and beautiful ecological environment. Vice Minister Tian Xuebin then proposed at the work conference of rural water conservancy and hydropower to continue to promote the upgrade and green transformation of small hydropower. 		
		1.1.2 Whether the project output design revolves around the problems faced by the sustainable development of SHP industry in	/	<ul style="list-style-type: none"> Project tasks: promote the establishment of a sustainable green small hydropower policy and institutional framework, transform existing small hydropower plants, improve the level of green small hydropower construction and safety standardization management, build a knowledge platform for green small hydropower and safe production management, and strengthen capacity 	<ul style="list-style-type: none"> Project proposal Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
		China		<p>building, project monitoring and evaluation .</p> <ul style="list-style-type: none"> • The project will summarize advanced international experience in the environment and management of small hydropower, formulate the green small hydropower construction requirements that adapt to the actual situation of small hydropower in China, promote the establishment of green small hydropower incentive policies and mechanisms, and establish a policy framework for green small hydropower development in China. • The project plans to complete the value-added project tasks of 23 hydropower plants upgrade and renovation in the construction of green small hydropower and safe production standardization, build a group of green small hydropower plants, guide and drive other power plants to consciously protect the ecological environment, and build a number of safe production standardized small hydropower plants, to implement standardized management, optimize hydropower plant operation scheduling and automatic management, and continuously improve the management level. • • The project will ultimately reduce greenhouse gas emissions through the upgrade and renovation of existing small hydropower plants in China, promote the application and promotion of low-emission greenhouse gas technologies and practices in developing 		

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
				countries, and achieve global environmental benefits.		
	1.2 Whether the project target beneficiary group and its primary needs are identified and positioned appropriately	1.2.1 Whether the project target beneficiary group is positioned appropriately	/	<ul style="list-style-type: none"> The target benefit groups of the project are 23 pilot power plants and their communities in 8 project provinces selected according to strict standards. The positioning of the benefit groups is appropriate. 	<ul style="list-style-type: none"> Project proposal Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
		1.2.2 Whether the primary needs of the project target beneficiary group are identified appropriately	/	<ul style="list-style-type: none"> During the 13th Five-Year Plan, the main objectives of rural hydropower upgrade are to update equipment, increase installed capacity and increase annual electricity generation. However, in addition to economic benefit goals, green and sustainable development are increasingly important to the development of hydropower plants. Besides, the community where the hydropower plant is located is also in increasing demand for local employment, gender equality, transportation, and ecology regarding the upgrade of the hydropower plant. Therefore, the primary needs of the target benefit groups of the project are appropriate. 	<ul style="list-style-type: none"> Project proposal Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
Efficiency	2.1 Whether the project is implemented as planned and achieves phased output	2.1.1 Whether the project is implemented as planned	2.1.1.1 Launch timeliness of the project (50%)	<ul style="list-style-type: none"> The planned start time of the project: May 2017. The actual start time of the project: May 2017. 	<ul style="list-style-type: none"> Project proposal Project progress report 	<ul style="list-style-type: none"> File research
			2.1.1.2 The conformity between the project plan and the estimated implementation period (50%)	<ul style="list-style-type: none"> The planned project implementation period: five years, from May 2017 to May 2022 The expected project implementation period: five years, from May 2017 to May 2022 	<ul style="list-style-type: none"> Project proposal Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Forum

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
		2.1.2 Staged completion of project activities	2.1.2.1 Green SHP Assessment Standard and aligned technical standards formulated and revised	<ul style="list-style-type: none"> The central project management office has completed the preparation of the bidding documents and submitted them to UNIDO on 31 July 2019. 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
			2.1.2.2 Preferential green SHP policies recommended and developed and relevant policies introduced	<ul style="list-style-type: none"> The Development Research Center of the Ministry of Water Resources submitted the first draft of the design report, and a review and acceptance meeting was held on September 25. 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
			2.1.2.3 Evaluation Criteria for Rural Hydropower Station Safe Production Standardization (provisional) rolled out nationwide	<ul style="list-style-type: none"> The central project management office has completed the preparation of the bidding documents and submitted them to UNIDO on 31 July 2019. 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
			2.1.2.4 23 business plans and feasibility studies finalised for upgrading SHP demonstration plants	<ul style="list-style-type: none"> The evaluation suggestions of preliminary design report for 15 hydropower plants in 4 provinces (Fujian, Hubei, Chongqing and Yunnan) have been completed. At present, relevant hydropower plants feedback on the suggestions; it is expected to be completed in January 2020. 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
			2.1.2.5 23 selected SHP plants upgraded to green SHP demonstration	<ul style="list-style-type: none"> 18 of the 23 pilot hydropower plants have completed the upgrade of rural hydropower efficiency and capacity expansion during the 13th Five-Year Plan period, and the remaining 5 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
			plants	are expected to be completed by the end of this year. Five of the 23 pilot hydropower plants are expected to complete the GEF value-added upgrade by the end of this year, and the remaining 18 are planned to complete the upgrade by the end of 2020		
			2.1.2.6 Socio-economic and environmental impact of green SHP rehabilitation recorded	<ul style="list-style-type: none"> Prepare relevant bidding documents 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
			2.1.2.7 Capacity building programme for SHP project owners, developers and technicians	<ul style="list-style-type: none"> The central project management office has completed the preparation of the bidding documents and submitted them to UNIDO on 31 July 2019. 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
			2.1.2.8 Capacity building programme for officials on green SHP and Safe Production Standard	<ul style="list-style-type: none"> The central project management office has completed the preparation of the bidding documents and submitted them to UNIDO on 31 July 2019. On August 5, 2019, the central project management office submitted relevant bidding documents to UNIDO. At present, UNIDO is conducting the procedures before the announcement of bidding. 16 owners of pilot hydropower plants were organized to study in the United States, and relevant investigation reports were prepared and submitted to the UNIDO. 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
			2.1.2.9 Awareness raising campaign delivered	<ul style="list-style-type: none"> The central project management office organized a domestic forum in October 2017 to provide relevant training for project owners and officials 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
			2.1.2.9 Establishment of pilot green SHP plants	<ul style="list-style-type: none"> The central project management office has completed the preparation of the bidding documents and submitted them to UNIDO on 31 July 2019. As the funding issue in the UNIDO SAP system has not yet been approved, it is currently being solved through coordination within UNIDO. On August 5, 2019, the central project management office submitted relevant bidding documents to UNIDO. At present, UNIDO is conducting the procedures before the announcement of bidding. 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
			2.1.2.10 Establishment of safe production standardization	<ul style="list-style-type: none"> The central project management office has completed the preparation of the bidding documents and submitted them to UNIDO on 31 July 2019. As the funding issue in the UNIDO SAP system has not yet been approved, it is currently being solved through coordination within UNIDO. On August 5, 2019, the central project management office submitted relevant bidding documents to UNIDO. At present, UNIDO is conducting the procedures before the announcement of bidding. 	<ul style="list-style-type: none"> Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
	2.2 Whether the project budget is invested and used as planned	2.2.1 Fund availability rate	2.2.1.1 Availability rate of GEF grant	<ul style="list-style-type: none"> • GEF grants of US\$1,117,941 have been in place, with an availability rate of 12.53%. GEF grants were paid by UNIDO to the relevant contractors according to the progress of the contract, and the amount already in place accounted for 23.29% of the signed contract amount. 	<ul style="list-style-type: none"> • Project progress report • Financial information 	<ul style="list-style-type: none"> • File research
			2.2.1.2 Availability rate of domestic supporting funds	<ul style="list-style-type: none"> • A total of US\$ 44,417,583 of supporting funds have been in place, with an availability rate of 59.56% 	<ul style="list-style-type: none"> • Project progress report • Financial information 	<ul style="list-style-type: none"> • File research
		2.2.2 Fund utilization rate	/	<ul style="list-style-type: none"> • The use of funds is legal and compliant, and there is no illegal use of funds 	<ul style="list-style-type: none"> • Project progress report • Financial information 	<ul style="list-style-type: none"> • File research • Seminars
	2.3 Whether the project management and implementation organizations are set up and selected appropriately; whether the project management and internal control are in	2.3.1 Whether there is a dedicated project organization or department with sufficient personnel, and whether it promotes project coordination and advancement	/	<ul style="list-style-type: none"> • The project steering committee is composed of the relevant responsible personnel from Department of Rural Water Resources and Hydropower (MWR), Department of International Cooperation and Science and Technology (MWR), Department of International Financing Operation (MOF), Department of Economic Construction (MOF), the International Center of Small Hydropower, Department of Energy and Climate Change of UNIDO, and provincial water conservancy administrative department where the project is located, mainly responsible for the decision-making of major issues such as project 	<ul style="list-style-type: none"> • Project proposal • Project progress report • Project management measures • Project financial management measures • Meeting minutes 	<ul style="list-style-type: none"> • File research

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
	place and ensure the effective implementation of the project			<p>policy design, target tasks, fund allocation, as well as the project implementation progress, quality and fund arrangement.</p> <ul style="list-style-type: none"> The central project management office is located at the International Center of Small Hydropower, responsible for executing the decisions of the project steering committee, organizing, coordinating, guiding and managing the implementation of the project. . Provincial project management offices of Zhejiang, Fujian, Hubei, Guangdong, Guangxi, Chongqing, Yunnan, Shaanxi provinces (autonomous regions, and municipalities directly under the central government) are set up under the leadership of project steering committee and the central project management office, responsible for the organization, implementation, coordination, management, supervision and evaluation of pilot projects in the provinces (autonomous regions, and municipalities directly under the central government). 		
		2.3.2 Whether relevant management measures and implementation rules are formulated and implemented in place	/	<ul style="list-style-type: none"> GEF Project Management Measures and GEF Project Financial Management Measures are formulated and issued, which defines the setting and responsibilities of the project management offices at all levels, establishes the project technical management system, and formulates the annual implementation plan of the project, the project technical review procedures, and management implementation 	<ul style="list-style-type: none"> Project proposal Project progress report Project management measures Project financial management measures Meeting minutes 	<ul style="list-style-type: none"> File research

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
				mechanisms. The project management offices at all levels strictly follow and execute accordingly.		
		2.3.3 Whether there are effective information collection channels	/	<ul style="list-style-type: none"> A communication and reporting mechanism has been established within the project, and relevant information is reported from the bottom up. The project units at all levels shall appoint special personnel to be responsible for project coordination. The central project management office supervises and evaluates the project activities and outputs, and regularly reports to the project steering committee and UNIDO. The UNIDO project manager conducts on-site visits to the project from time to time to check the implementation of the project. 	<ul style="list-style-type: none"> Project proposal Project progress report Project management measures Project financial management measures Meeting minutes 	<ul style="list-style-type: none"> File research
		2.3.4 Whether there are effective risk prevention and control measures	/	<ul style="list-style-type: none"> A project reserve mechanism has been established. If the existing pilot hydropower plants are not included in the implementation plan of “13th Five-Year Plan” or cannot be started in time according to the design scheme, the reserve projects can replace them and be implemented in accordance with the established emission reduction targets Each project unit shall carry out the project in accordance with the provisions in the prevention of corruption and fraud of UNIDO 	<ul style="list-style-type: none"> Project progress report Project management measures Project financial management measures Project contract 	<ul style="list-style-type: none"> File research
	2.4 Whether the resources are invested economically	2.4.1 Cost appropriateness	/	<ul style="list-style-type: none"> The bidding and equipment procurement of the project are carried out in accordance with the domestic procedures, the terms of the contract can be strictly implemented, and the overall cost 	<ul style="list-style-type: none"> Project design scheme Stakeholders’ perspectives 	<ul style="list-style-type: none"> File research Seminars

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
	and effectively; whether the project content design and implementation mechanism are innovative	2.4.2 Innovation of project content design and implementation mechanism	/	of the project is effectively controlled • UNIDO selected the GEF project as an innovative model pilot. The central project management office can directly access the project management system SAP of UNIDO to participate in project implementation and management, and the implementation mechanism is highly innovative	• Project progress report • Stakeholders' perspectives • Project progress report • Stakeholders' perspectives	• File research • Seminars • File research • Seminars
Effectiveness	3.1 Whether the project has achieved the stage performance target	3.1.1 The current realization degree of the project performance objective	3.1.1.1 Small hydropower development policy	• After the implementation of the project, the relevant policies promoted and published are conducive to the green development of small hydropower nationwide.	• Project proposal • Project progress report • Stakeholders' perspectives	• File research • Seminars On-site research
			3.1.1.2 Safety production and management level of pilot hydropower plants	• Through the implementation of the project, the safe and economic operation level of the pilot hydropower plant has been improved	• Project proposal • Project progress report • Stakeholders' perspectives	• File research • Seminars On-site research
			3.1.1.3 Ecological restoration of the river where the pilot hydropower plants are located	• Through the implementation of the project, the ecological environment of 23 rivers has been improved	• Project proposal • Project progress report • Stakeholders' perspectives	• File research • Seminars On-site research
			3.1.1.4 Generating capacity and carbon dioxide emission reduction of the unit put into operation	• Through the implementation of the project, the cumulative electricity generation of the units that have been put into operation is 326,247,644kW · h, and the cumulative GHG emission reduction is 236,760.1 tons.	• Project proposal • Project progress report • Stakeholders' perspectives	• File research • Seminars On-site research

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
			3.1.1.5 Professional and management abilities of the institutional personnel	<ul style="list-style-type: none"> During the implementation of the project, the central project management office organized relevant training, study tours and forums at home and abroad. The personnel of each project unit learned about the advanced experience of green small hydropower at home and abroad, updated the concept, and improved the professional abilities of small hydropower 	<ul style="list-style-type: none"> Project proposal Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research SeminarsOn-site research
		3.1.2 Whether the planned results are expected to be achieved upon completion of the project	/	<ul style="list-style-type: none"> According to the current progress of each project activity, the planned results are expected to be achieved when the project is completed 	<ul style="list-style-type: none"> Project proposal Project progress report Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars
	3.2 Whether the expected actual beneficiary group is the target beneficiary group of the project	3.2.1 Targeting degree of the project to the beneficiary group	/	<ul style="list-style-type: none"> The target benefit groups are mainly: 23 pilot hydropower plants in eight project provinces The aim of the project to the benefit groups is 100% 	<ul style="list-style-type: none"> Project proposal Stakeholders' perspectives 	<ul style="list-style-type: none"> File research SeminarsField research Questionnaire survey
		3.2.2 Coverage of the project to the beneficiary group	/	<ul style="list-style-type: none"> The actual benefit groups of the project cover all the planned benefit groups. In addition to the benefits brought by the project planned results, the actual benefits of the benefit groups will also include increasing employment opportunities, solving traffic problems and improving the ecological environment. 	<ul style="list-style-type: none"> Project proposal Stakeholders' perspectives 	<ul style="list-style-type: none"> File research SeminarsOn-site research Questionnaire survey
Sustainability	4.1 Whether the project is financially sustainable	4.1.1 Whether the project fund can meet the needs of the project implementation	/	<ul style="list-style-type: none"> The total investment budget of the project has been designed and approved with proper investment scale; the implementation unit of the project strictly controls the execution of the budget, the supporting funds have been in place 	<ul style="list-style-type: none"> Project proposal Approval of initial design Stakeholders' perspectives 	<ul style="list-style-type: none"> File research Seminars

Criteria	Key evaluation questions	Primary indicators	Secondary indicators	Evidence	Sources of evidence	Collection method
				according to the schedule, and the subsequent capital investment is guaranteed.		
	4.2 Whether the project implementation is sustainable	4.2.1 Whether the current economic and social factors hinder the implementation of the project	/	<ul style="list-style-type: none"> The Ministry of Water Resources is currently vigorously promoting the construction of green small hydropower. The ecological awareness of the whole society and the demand for the development of green small hydropower continue to increase. There are no factors hindering the implementation of the project. 	<ul style="list-style-type: none"> Project proposal Project progress report 	<ul style="list-style-type: none"> Internet Seminars
		4.2.2 Sustainability of project policy	/	<ul style="list-style-type: none"> The project has established a multi-sectoral cooperation mechanism. Each project province strictly abides by a series of management systems formulated by the central project management office, and the sustainability of the project policy is guaranteed 	<ul style="list-style-type: none"> Project proposal Project progress report 	<ul style="list-style-type: none"> File research Seminars
		4.2.3 Sustainability of project implementing agency	/	<ul style="list-style-type: none"> The central project management office is located at the International Center of Small Hydropower, and the eight provincial project management offices are located at the water conservancy departments of each province, with long-term stability 	<ul style="list-style-type: none"> System documents 	<ul style="list-style-type: none"> File research Seminars
		4.2.4 Sustainability of the project personnel	/	<ul style="list-style-type: none"> Project personnel at all levels are stable and the division of business is clear, which can meet the needs of project implementation 	<ul style="list-style-type: none"> System documents 	<ul style="list-style-type: none"> File research Seminars

Annex 4: Performance evaluation weight and scoring standard

Note: This performance evaluation weight and scoring standard adopts a method of combining objective and subjective standards. The relevance, key evaluation questions, the weights and scores of the primary indicators and secondary indicators in the scoring standard are objective standard and are set according to the requirements of Operational Guidelines for Performance Evaluation of International Financial Institutions Loan Projects; the ratings and specific scores in the scoring standard are subjectively determined by the evaluation team based on relevant evidence.

Criteria (weight)	Key evaluation questions	Primary indicators	Secondary indicators	Scoring standard
Relevance (20%)	1.1 Whether the project objectives and content design conform to the current development strategy of the state, industry and region, and effectively solve practical problems (50%)	1.1.1 The conformity between the project objectives and the development strategy and policy priorities of China's SHP industry (50%)	/	90~100 points: all objectives and contents of the project are highly consistent with the development strategies and policy priorities of small hydropower in China 80-89 points: most of the objectives and contents of the project are consistent with the development strategies and policy priorities of small hydropower in China 60~79 points: the objectives and contents of the project are basically consistent with the development strategies and policy priorities of small hydropower in China 0-59 points: none of the objectives and contents of the project are consistent with the development strategies and policy priorities of small hydropower in China
		1.1.2 Whether the project output design revolves around the problems faced by the sustainable development of SHP industry in China (50%)	/	90~100 points: The project output design is completely aimed at the sustainable development of China's small hydropower industry 80~89 points: The project output design is aimed at the sustainable development of China's small hydropower industry 60~79 points: The project output design is basically aimed at the sustainable development of China's small hydropower industry 0~59 points: The project output design does not aim at the sustainable development of China's small hydropower industry
	1.2 Whether the project target beneficiary group and its primary needs are identified and	1.2.1 Whether the project target beneficiary group is positioned appropriately (50%)	/	90~100 points: the positioning of the project target benefit groups is completely appropriate 80~89 points: the positioning of the project target benefit groups is appropriate 60~79 points: the positioning of the project target benefit groups is basically appropriate 0~59 points: the positioning of the project target benefit groups is inappropriate

Criteria (weight)	Key evaluation questions	Primary indicators	Secondary indicators	Scoring standard
	positioned appropriately (50%)	1.2.2 Whether the primary needs of the project target beneficiary group are identified appropriately (50%)	/	90~100 points: the determination of the primary needs of the project target benefit groups is completely appropriate 80~89 points: the determination of the primary needs of the project target benefit groups is appropriate 60~79 points: the determination of the primary needs of the project target benefit groups is basically appropriate 0~59 points: the determination of the primary needs of the project target benefit groups is inappropriate
Efficiency (50%)	2.1 Whether the project is implemented as planned and achieves phased output (40%)	2.1.1 Whether the project is implemented as planned (40%)	2.1.1.1 Launch timeliness of the project (50%)	90~100 points: the project started on the original date or ahead of schedule 80~89 points: the project started 2 months later than the original date 60~79 points: the project started 4 months later than the original date 0~59 points: the project started 6 months later than the original date
			2.1.1.2 The conformity between the project plan and the estimated implementation period (50%)	90~100 points: the project is implemented according to the planned implementation period or within shortened period 80~89 points: the project implementation takes 2 months more than the planned period 60~79 points: the project implementation takes 4 months more than the planned period 0~59 points: the project implementation takes 6 months more than the planned period
		2.1.2 Staged completion of project activities (60%)	2.1.2.1 Green SHP Assessment Standard and aligned technical standards formulated and revised (10%)	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started
			2.1.2.2 Preferential green SHP policies recommended and developed and relevant policies	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started

Criteria (weight)	Key evaluation questions	Primary indicators	Secondary indicators	Scoring standard
			introduced (5%)	
			2.1.2.3 Evaluation Criteria for Rural Hydropower Station Safe Production Standardization (provisional) rolled out nationwide (10%)	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started
			2.1.2.4 23 business plans and feasibility studies finalised for upgrading SHP demonstration plants (5%)	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started
			2.1.2.5 23 selected SHP plants upgraded to green SHP demonstration plants (30%)	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started
			2.1.2.6 Socio-economic and environmental impact of green SHP rehabilitation recorded (5%)	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started
			2.1.2.7 Capacity building training for 1200 small	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind

Criteria (weight)	Key evaluation questions	Primary indicators	Secondary indicators	Scoring standard
			hydropower owners, developers and technicians (10%)	0~59 points: not started
			2.1.2.8 Capacity building training for government officials on green small hydropower and safety production standardization (10%)	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started
			2.1.2.9 Awareness raising campaign delivered (5%)	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started
			2.1.2.10 Establishment of pilot green SHP plants (5%)	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started
			2.1.2.11 Establishment of safe production standardization (5%)	90~100 points: proceed as planned 80~89 points: slightly lagging behind 60~79 points: severely lagging behind 0~59 points: not started

Criteria (weight)	Key evaluation questions	Primary indicators	Secondary indicators	Scoring standard
	2.2 Whether the project budget is invested and used as planned (40%)	2.2.1 Fund availability rate (40%)	2.2.1.1 GEF grants availability rate (50%)	90~100 points: funds are in place as planned 80~89 points: funds slightly delay 60~79 points: funds seriously delay 0~59 points: funds are not in place
			2.2.1.2 Domestic supporting fund availability rate (50%)	90~100 points: funds are in place as planned 80~89 points: funds slightly delay 60~79 points: funds seriously delay 0~59 points: funds are not in place
		2.2.2 Fund utilization rate	/	90~100 points: the use of funds is fully compliant 80~89 points: the use of funds is basically compliant 60~79 points: the use of funds is irregular 0~59 points: the use of funds is seriously irregular
	2.3 Whether the project management and implementation organizations are set up and selected appropriately; whether the project management and internal control are in place and ensure the effective implementation of	2.3.1 Whether there is a dedicated project organization or department with sufficient personnel, and whether it promotes project coordination and advancement (25%)	/	90~100 points: the project management organization has clear settings and responsibilities, and is equipped with sufficient personnel to promote project coordination and implementation 80~89 points: the project management organization has clear settings and responsibilities, but the management organization or personnel needs to be improved 60~79 points: the project management organization has clear settings and responsibilities, but the management organization or personnel is not perfect, and routine work is affected. 0~59 points: the project management organization is not fully established
2.3.2 Whether relevant management measures and implementation rules are formulated and implemented in place			/	90~100 points: the project has formulated complete management measures and detailed rules that are well implemented 80~89 points: the project has formulated management measures and rules, but still needs to be supplemented and improved. The implementation is not adequate 60~79 points: the project has formulated management measures and rules, but the implementation is not good and needs to be improved

Criteria (weight)	Key evaluation questions	Primary indicators	Secondary indicators	Scoring standard
	the project (10%)	(25%)		0~59 points: the project has not formulated management measures and rules
		2.3.3 Whether there are effective information collection channels (25%)	/	90~100 points: the project has established complete information collection channels that is running effectively 80~89 points: the project has established information collection channels, which still needs to be supplemented and improved 60~79 points: the project has established information collection channels, but the effect is not good 0~59 points: the project has not established information collection channels
		2.3.4 Whether there are effective risk prevention and control measures (25%)	/	90~100 points: the project has adopted comprehensive risk control measures, and the risk control effect is good 80~89 points: the risk control measures are basically in place, but the effect needs to be improved 60~79 points: the risk control measures are partially in place, but the effect is average 0~59 points: basically no risk control measures have been taken in the project
	2.4 Whether the resources are invested economically and effectively; whether the project content design and implementation mechanism are innovative (10%)	2.4.1 Cost appropriateness (60%)	/	90~100 points: the cost is appropriate or low 80~89 points: the cost is slightly higher 60~79 points: the cost is high 0~59 points: the cost is too high
		2.4.2 Innovation of project content design and implementation mechanism (40%)	/	90~100 points: the project content design and implementation mechanism are extremely innovative 80~89 points: the project content design and implementation mechanism are innovative to a large extent 60~79 points: the project content design and implementation mechanism are partly innovative 0~59 points: The project content design and implementation mechanism are not innovative
	Effectiveness (20%)	3.1 Whether the project has achieved the stage performance	3.1.1 The current realization degree of the project performance	3.1.1.1 Small hydropower development policy (25%)

Criteria (weight)	Key evaluation questions	Primary indicators	Secondary indicators	Scoring standard
	target (70%)	objective (50%)	3.1.1.2 Safety production and management level of pilot hydropower plants (10%)	90~100 points: achieve all expected phased performance goals 80~89 points: achieve most of the expected phased performance goals 60~79 points: achieve a small part of the expected phased performance goals 0~59 points: fail to achieve the expected phased performance goals
			3.1.1.3 Ecological restoration of the river where the pilot hydropower plants are located (30%)	90~100 points: achieve all expected phased performance goals 80~89 points: achieve most of the expected phased performance goals 60~79 points: achieve a small part of the expected phased performance goals 0~59 points: fail to achieve the expected phased performance goals
			3.1.1.4 Generating capacity and carbon dioxide emission reduction of the unit put into operation (10%)	90~100 points: achieve all expected phased performance goals 80~89 points: achieve most of the expected phased performance goals 60~79 points: achieve a small part of the expected phased performance goals 0~59 points: fail to achieve the expected phased performance goals
			3.1.1.5 Professional and management abilities of the institutional personnel (25%)	90~100 points: achieve all expected phased performance goals 80~89 points: achieve most of the expected phased performance goals 60~79 points: achieve a small part of the expected phased performance goals 0~59 points: fail to achieve the expected phased performance goals
		3.1.2 Whether the planned results are expected to be achieved upon completion of the project (25%)	/	90~100 points: it is expected that the planned results will be fully realized when the project is completed 80~89 points: it is expected that the planned results will be mostly realized when the project is completed 60~79 points: it is expected that the planned results will be partially realized when the project is completed 0~59 points: it is expected that the planned results will not be realized when the project is completed
	3.2 Whether the	3.2.1 Targeting degree	/	90~100 points: the target benefit groups are exactly the same as the actual benefit

Criteria (weight)	Key evaluation questions	Primary indicators	Secondary indicators	Scoring standard
	expected actual beneficiary group is the target beneficiary group of the project (30%)	of the project to the beneficiary group (50%)		groups 80~89 points: the target benefit groups are basically the same as the actual benefit groups 60~79 points: the target benefit groups are partially consistent with the actual benefit groups 0~59 points: the target benefit groups are completely inconsistent with the actual benefit groups
		3.2.2 Coverage of the project to the beneficiary group (50%)	/	90~100 points: coverage rate of project benefit groups $\geq 90\%$ 80~89 points: $80 \leq$ coverage rate of project benefit groups $< 90\%$ 60~79 points: $60 \leq$ coverage rate of project benefit groups $< 80\%$ 0~59 points: coverage rate of project benefit groups $< 60\%$
Sustainability (10%)	4.1 Whether the project is financially sustainable (50%)	4.1.1 Whether the project fund can meet the needs of the project implementation (100%)	/	90~100 points: project funds are clearly guaranteed, GEF grants and supporting funds are fully in place, and the execution is good 80~89 points: project funds are clearly guaranteed, GEF grants and supporting funds are basically in place, and the execution is good 60~79 points: project funds are partially guaranteed, and GEF grants and supporting funds are in place to a certain extent 0~59 points: project funds are not guaranteed, GEF grants and supporting funds cannot be in place
	4.2 Whether the project implementation is sustainable (50%)	4.2.1 Whether the current economic and social factors hinder the implementation of the project (25%)	/	90~100 points: the economic and social environment can fully ensure the smooth implementation of the project (without hindrance) 80~89 points: the economic and social environment can ensure the smooth implementation of the project (basically not hindered) 60~79 points: the economic and social environment can basically guarantee the smooth implementation of the project (hindered) 0~59 points: the economic and social environment can not guarantee the smooth implementation of the project (very hindered)
		4.2.2 Sustainability of project policy (25%)	/	90~100 points: the project policy environment is complete with effective implementation 80~89 points: the project policy environment is relatively complete with good implementation

Criteria (weight)	Key evaluation questions	Primary indicators	Secondary indicators	Scoring standard
				60~79 points: the project policy environment is relatively complete, but it has not been effectively implemented 0~59 points: the project policy environment is not complete, or the project policy system is not effectively implemented
		4.2.3 Sustainability of project implementing agency (25%)	/	90~100 points: the project implementation agency is very stable 80~89 points: the project implementation agency is relatively stable 60~79 points: the project implementation agency is basically stable 0~59 points: the project implementation agency is unstable
		4.2.4 Sustainability of the project personnel (25%)	/	90~100 points: project personnel can fully meet the needs of project implementation 80~89 points: project personnel can meet the needs of project implementation 60~79 points: project personnel can basically meet the needs of project implementation 0~59 points: Project personnel cannot meet the needs of project implementation

Annex 5: Documentation list

1. GEF CEO Endorsement Document
2. Project Implementation Agreement (PIA)
3. Project Execution Agreement (PEA)
4. Project Agreement (PA)
5. Co-financing Letter of the GEF Project
6. Project Approval Letters for the Demonstration Projects
7. Project Design Reports for the Demonstration Projects
8. Work Plan
9. Work Summary
10. Progress Reports
11. Plan reports and completion reports of the study tours
12. GEF Grant and Co-financing Worksheets
13. Consultation achievements of policy research and capacity building programme
14. Project management institutional structure and arrangement
15. Project monitoring and reporting rules
16. Project Management Regulation
17. Financial Management Regulation

Annex 6: Seminar minutes

Date: Morning of October 9, 2019

Venue: International Center on Small Hydro Power

Participants: Hu Xiaobo, Chu Shiji, Guo Yonghong, Feng Aiming, Li Youmei, Luo Yunxia

1. What are the current situation and main problems of small hydropower development in China? How much changes will it bring to small hydropower industry in China after the implementation of the GEF project? What are the main aspects?

Small hydropower is clean and renewable energy recognized by the international community today, and it is also an important means to promote economic development, ensure the improvement of people's livelihood, and protect the ecological environment. Since the founding of the People's Republic of China, great achievements have been made in the development of small hydropower in China. The installed capacity of small hydropower has reached more than half of the world's, and the electricity problem of more than 300 million rural people has been solved. It has played an important role in increasing the supply of clean energy, improving the level of rural electrification, and accelerating the poverty alleviation in poor areas, and protecting and improving the ecological environment. However, due to a variety of factors, some hydropower stations still have some shortcomings that restrict their development, such as aging and disrepair of equipment, low resource utilization efficiency, multiple potential safety hazards, and business difficulties; some ecological and environmental problems, such as water reduction and drainage of river sections caused by over development of some river basins and construction of hydropower stations, are becoming increasingly prominent. These unbalanced and inadequate developments still have a significant gap with the people's needs for a better life. It is necessary to implement new development concepts, adhere to ecological priority and green development, increase efficiency, expand capacity, make renovation, and add value to small hydropower, and continuously improve the green, efficient, healthy and sustainable development of small hydropower.

According to the estimation, on the basis of the implementation of the Efficiency Improvement and Capacity Expansion Project, the pilot hydropower plants will increase the annual power generation by 153,000 MWh, and realize the direct greenhouse gas emission reduction of 2.2 million tons CO₂eq and indirect carbon dioxide emission reduction of 6.6-60 million tons CO₂eq within the life expectancy of the hydropower plants. The project will also produce a series of other environmental benefits, including increasing biodiversity, reducing water and air pollution, improving public health environment, actively promoting the application and promotion of low-emission greenhouse gas technologies and practices in developing countries, and supporting the cultivation of the market to the benign direction of technology creation and innovation. The main outputs and achievements of the project include:

(1) Summarize the international advanced experience in the environment and management of small hydropower, formulate the construction requirements of green small hydropower to adapt to the actual national situation, promote the establishment of incentive policies and mechanisms for green small hydropower, and establish the policy framework for the development of green small hydropower in China.

(2) Complete the value-added project objectives and tasks for 24 pilot SHP plants in terms of the establishment of green small hydropower plants and the construction of safety production standardization; build a number of green small hydropower plants to guide and drive other power stations to consciously protect the ecological environment; create a number of small hydropower plants of safety production standardization, implement standardized management, optimize the operation and automatic management of hydropower plants, and constantly improve the quality of management.

(3) By the upgrading and renovation of China's existing small hydropower plants, greenhouse gas emissions are reduced, the application and promotion of low-emission greenhouse gas technologies and practices in developing countries are promoted, and the global environmental benefits are achieved.

2. What is the current progress of the project? Is the project implemented on schedule and when is it expected to be completed?

The GEF Governing Council approved the project proposal in June 2016. In May 2017, UNIDO signed the Project Implementation Agreement and Project Execution Agreement with the Ministry of Finance and the Ministry of Water Resources respectively. In July 2017, UNIDO signed the Project Agreement with the International Center on Small Hydro Power, which marked the formal commencement of the project. From March to May 2018, UNIDO signed the GEF Contract with 22 pilot hydropower plants in China respectively, and all project activities are fully launched. Due to the stringent schedule requirements of the 13th Five-Year Plan for the SHP Efficiency Improvement and Capacity Expansion Project, and that the implementation of the GEF project is related to the progress of the 13th Five-Year Plan for the upgrading and renovation projects, some pilot hydropower plants have been launched ahead of schedule. Up to now, the GEF project has been continuously promoted as planned, and some activities have lagged behind slightly. The project is expected to be completed in May 2022, and the overall project is expected to be completed in time.

3. How about the availability and utilization of GEF grant funds for this project? How about the use of supporting funds?

When the project was designed, the GEF grant planned was US\$ 8.925 million, accounting for 10.69% of the total amount of the project. As of August 2019, the cumulative GEF grants of US\$1,117,941 have been in place, with an availability rate of 12.53%. Since the GEF grants are paid by UNIDO to the relevant contractors according to the progress of the contract, the amount already in place accounted for 23.29% of the signed contract amount.

When the project was designed, the supporting fund planned was US\$ 74,578,448, accounting for 89.31% of the total amount of the project. As of August 2019, a total of US\$ 44,417,583 of supporting funds have been in place, with an availability rate of 59.56%

4. How is the reimbursement process for GEF grants? What problems have you encountered? Please specify.

UNIDO signed a contract with each relevant contractor. The contractor shall submit the progress report or achievement report required by the contract before each payment. After UNIDO approves the report, the GEF grant will be paid according to the progress of the contract.

The project owners are not familiar with the reimbursement rules, and the related supporting materials submitted such as progress reports, contracts and invoices are of low quality, and need to be repeatedly modified to meet the reimbursement requirements; some project owners were afraid of the complicated process of reimbursement, and most of them use supporting funds to implement the project first, and only start to prepare materials for reimbursement when the project has made more progress; In addition, there is a process node plan instead of a specific annual plan for fund availability, which leads to a low rate of fund availability in evaluation.

5. How about the project management organization, staffing and stability? What management systems and methods are developed for the project?

The National Project Coordination Committee (NPCC) has been set up specially, and it is composed of the Department of Rural Water and Hydropower of MWR, the Department of International Cooperation, Science and Technology of MWR, Department of International Financial Cooperation of MOF, Department of Economic Construction of MOF, International Center on Small Hydro Power, Department of Energy, UNIDO and provincial departments of water resources. In accordance with the relevant requirements of the Ministry of Water Resources, the Ministry of Finance and the Global Environment Facility, the Project Steering Committee is mainly responsible for decision-making of major issues such as project policy design, target tasks and fund allocation, as well as organization and coordination of project implementation progress, quality and fund arrangement.

The central project management office is set up and located at the International Center on Small Hydro Power, responsible for executing the decisions of the NPCC,

organizing, coordinating, guiding and managing the implementation of the project.

Provincial project management offices of Zhejiang, Fujian, Hubei, Guangdong, Guangxi, Chongqing, Yunnan, Shaanxi provinces (autonomous regions, and municipalities directly under the central government) are established, responsible for the organization, implementation, coordination, management, supervision and evaluation of pilot projects in the provinces (autonomous regions, and municipalities directly under the central government) under the guidance of NPCC and central project management office.

The central project management office is located at the International Center on Small Hydro Power, and the eight provincial project management offices are located at the provincial water conservancy departments. These units are all government agencies and are equipped with sufficient project management personnel to ensure the continuous and stable implementation of GEF projects.

During the process of the project implementation, in addition to the relevant regulations of the state and GEF that are strictly implemented, the central project management office has formulated a series of rules and regulations such as the GEF Project Management Measures and GEF Project Financial Management Measures according to the actual situation of the project, which comprehensively and in detail stipulates the responsibilities and powers of the project implementation units at all levels, clarifies the working procedures, and establishes rules and regulations for all aspects of project implementation such as bidding and procurement, project management, payment, application and reporting, institutional and financial enhancement, etc. It provides a strong system guarantee for the organization and management of the entire project.

6. What impact has this project had on the strengthening of the organization's capacity?

During the implementation of the project, the central project management office organized some domestic and foreign trainings, investigations and seminars. The personnel of each project unit learned about the advanced experience of green SHP at

home and abroad, updated their concept, and improved their professional capabilities and business level of SHP. Other capacity-building activities of the project are being launched as planned, and will further increase the professional and management ability of the institutional personnel upon completion.

7. What innovative measures are taken in the content design and implementation mechanism of the project?

This project is the first pilot innovative model of UNIDO, which is implemented in a different approach than previous. During the implementation of the project, ICSHP was authorized as an external executive agency to login UNIDO SAP system to carry out procurement management and financial management for the project, including procurement methods, competition types, bidding, contract formulation, the content and process of financial management, the operation method of the Enterprise Resource Management System (SAP), etc. In August 2017, UNIDO sent financial and procurement officials to China to conduct special training for the central project management office on the implementation of this project.

This mechanism has played a positive guiding and demonstration role to the project implementation, and helped the central project management office to learn from valuable experiences of UNIDO in project management and internal organization management.

8. What experiences are worth summarizing during the implementation of this project?

(1) Leaders attach great importance and the management organization is sound and effective. The strong support from leaders at all levels and a sound and effective management organization are the prerequisites for the smooth implementation of the project. Under the leadership of NPCC that is composed of the relevant responsible personnel from Department of Rural Water Resources and Hydropower (MWR), Department of International Cooperation and Science and Technology (MWR), Department of International Financing Operation (MOF), Department of Economic Construction (MOF), the International Center on Small Hydro Power, Department of Energy and Climate Change of UNIDO, and provincial water conservancy

administrative department where the project is located, the central project management office closely cooperates and smoothly communicates with provincial project management offices to ensure the smooth implementation of the project.

(2) A sound internal management system is an important guarantee for the smooth implementation of the project. The GEF Project Management Measures and GEF Project Financial Management Measures are formulated and issued according to the relevant requirements. The project was carried out accordingly during the implementation, which effectively promoted the progress of the project.

(3) A number of technical and managerial personnel were experienced and trained through the implementation of international project. This project has trained a group of management personnel, who have participated in the whole foreign-funded project, for each project unit. In the process of project implementation, the central project management office organized targeted training to help each project unit get familiar with the whole process of project implementation, understand the concept and rules of international projects, and master project management methods. Through training and learning, the overall level of all project participating teams, including relevant government departments, project implementation units, design institutes, etc., has been improved to ensure the smooth implementation of the project.

9. What problems need to be solved during the implementation of the project?

(1) The pilot project innovation mode needs to be explored and run-in constantly. In order to strengthen the implementation of the project, UNITO has selected GEF Upgrading Small Hydropower in China as the pilot project with innovative mode, and ICSHP was authorized as to login UNIDO SAP system to participate the project's implementation and management. However, in practice, it was found that the authority required for project execution are limited during the process of project management, expert recruitment, financial budget, bidding and procurement, which prevented the timely advancing the bidding work of related activities, and affected the project implementation progress to a certain extent.

(2) The level of withdrawal reimbursement documentation is insufficient. The

payment reimbursement documents prepared by some pilot project owners were of poor quality and need to be supplemented, modified and reviewed again and again, which results in the delay of GEF grant delivery.

(3) The publicity for the project is insufficient. The GEF project is a model of cooperation between China and the UNIDO in the field of small hydropower. The implementation of the project will drive the sustainable development of small hydropower in China, sharing China's good practices and experience to the global small hydropower development. However, comparing the publicity of GEF project by the central PMO, the publicity in each pilot province is relatively less.

(4) Some local green SHP development supporting policies need to be strengthened. With the exception of Zhejiang and Fujian, other provinces implementing the GEF project haven't issued relevant supporting policies for the development of green SHP yet.

Annex 7: Questionnaires

(I) Questionnaire of GEF Provincial Project Office

In order to better understand the relevant situation of the project in your province (autonomous region or municipality directly under the central government) during the implementation of the GEF Upgrading of China SHP Project, our project performance evaluation team specially carry out this investigation. We expect that you can spare some valuable time from your busy schedule to help us complete the following questionnaire. Your opinions are very important to us. Thank you for your support and cooperation.

I. Your Profile

Name: _____ Gender: _____

Organization: _____ Tel: _____

II. Investigation questions

1. What is the overall progress of the GEF project in your province (autonomous region or municipality directly under the central government)?

2. Are there relevant management policies for green small hydropower development in your province (autonomous region or municipality directly under the central government)? Are there relevant incentives (such as electricity prices, taxes, etc.)? If the answer is yes, please give a brief introduction.

3. What changes have been made to the environmental protection policies and regulations (such as environmental impact assessment, water resources protection, aquatic life protection, etc.) of small hydropower in your province (autonomous region or municipality directly under the central government) after the implementation of GEF project?

4. Are there guidelines and implementation rules for safe production of rural hydropower plants in your province (autonomous region or municipality directly under the central government)? If the answer is yes, please give a brief introduction.

5. Please give a brief introduction to the current grid price of small hydropower in your province (autonomous region or municipality directly under the central government).

6. What's your comments and suggestions on this project?

(II) Questionnaire of GEF Pilot Hydropower Plants

In order to better understand the impact on the pilot hydropower plants during the implementation of the GEF Upgrading of China SHP Project, our project performance evaluation team specially carry out this investigation. We expect that you can spare some valuable time from your busy schedule to help us complete the following questionnaire. Your opinions are very important to us. Thank you for your support and cooperation.

I. Your Profile

Name:_____ Gender:_____

Organization:_____ Tel: _____

II. Investigation questions

1. Is your hydropower plant project progressing smoothly?

A. Smooth B. Average C. Not smooth

2. Do you think the construction of this project has improved the safe and economic operation level of the hydropower plant?

A. Yes B. Not necessarily C. No

3. Do you think the construction of this project is conducive to the healthy and sustainable development of the small hydropower industry?

A. Yes B. Not necessarily C. No

4. Do you think the project will have significant impact on the local natural environment during its implementation?

A. Obvious B. Average C. Not obvious

5. Do you think the project will contribute to the local economic development after completion?

A. Obvious B. Average C. Not obvious

6. What's your comments and suggestions on this project?

(III) Questionnaire for residents in the communities where GEF pilot plants are located

In order to better understand the impact on your daily life and surrounding environment during the implementation of the GEF Upgrading of China SHP Project, our project performance evaluation team specially carry out this investigation. We expect that you can spare some valuable time from your busy schedule to help us complete the following questionnaire. Your opinions are very important to us. Thank you for your support and cooperation.

I. Your Profile

Name: _____ Gender: _____

Place of residence: _____ Tel: _____

II. Investigation questions

1. What's the utilization situation of the river where the plant is located that you know?

A. For daily use B. For irrigation and production C. No production or domestic water

2. What is your current annual income?

A. Less than 20,000 B. 20,000 to 40,000 C. 40,000 to 60,000 D. More than 60,000

3. What is the current impact of this project on you? (multiple choices)

A. Water environment impact B. Noise impact C. Water use impact D. Landscape and ecological environment impact E. Provide employment opportunities and promote local economic development

4. What is the current quality of power supply in your residence?

A. Sufficient use of electricity, good quality of power supply

B. The use of electricity is sufficient, occasionally insufficient, and the quality of power supply is good

C. Poor use of electricity and poor quality of power supply

5. What's your comments and suggestions on this project?

Annex 8: Analysis on questionnaires results

(I) Questionnaire summary of GEF Provincial Project Management Offices

Zhejiang GEF Project Management Office

1. What is the overall progress of the GEF project in your province (autonomous region or municipality directly under the central government)?

Two hydropower plants in Zhejiang Province are included in the GEF pilot projects, including: Panxi Cascade Hydropower Plants in Jinyun County, Lishui City (Panxi Cascades II, III&IV Hydropower Plants as one pilot project), and Qingshuitan Hydropower Plant in Quzhou City.

At present, the two pilot hydropower plants have completed the renovation and have generated power. The two hydropower plants of GEF project are expected to be completed in October 2020.

2. Are there relevant management policies for green small hydropower development in your province (autonomous region or municipality directly under the central government)? Are there relevant incentives (such as electricity prices, taxes, etc.)? If the answer is yes, please give a brief introduction.

Zhejiang Province started to carry out ecological hydropower demonstration zone project in 2015. The construction of ecological hydropower demonstration zone aims to maintain and improve the river ecological environment, optimize the allocation of hydropower resources, make scientific use of hydropower resources, and carry out the comprehensive treatment of hydropower ecological restoration with river basins and regions as the objects. At present, Zhejiang Province has prepared the Implementation Plan for the Construction of Ecological Hydropower Demonstration Zone in Zhejiang Province (2016-2020), and issued the Interim Measures for the Construction and Management of Ecological Hydropower Demonstration Zone in Zhejiang Province (ZSD [2016] No. 3). The construction of ecological hydropower demonstration zone is a general project of Water Resources Department of Zhejiang Province, with partial financial subsidies (the proportion of subsidies calculated internally does not exceed

30% of the initial approved total investment), and there are no other incentive measures related to electricity prices and taxes.

3. What changes have been made to the environmental protection policies and regulations (such as environmental impact assessment, water resources protection, aquatic life protection, etc.) of small hydropower in your province (autonomous region or municipality directly under the central government) after the implementation of GEF project?

The relevant environmental policies and regulations of small hydropower in Zhejiang Province have not changed since the implementation of GEF project.

4. Are there guidelines and implementation rules for safe production of rural hydropower plants in your province (autonomous region or municipality directly under the central government)? If the answer is yes, please give a brief introduction.

(1) In 2007, Zhejiang Province issued the Several Regulations on Safe Production of Rural Hydropower in Zhejiang Province (ZSD [2007] No. 13).

(2) In 2014, Zhejiang Provincial Water Resources Department and Zhejiang Provincial Safety Production Supervision Administration issued the Implementation Measures of Rural Hydropower Safety Production Standardization Ratings in Zhejiang Province (Interim).

5. Please give a brief introduction to the current grid price of small hydropower in your province (autonomous region or municipality directly under the central government).

In 2014, Zhejiang Province issued the Notice of Zhejiang Price Bureau on Matters Concerning Improving the On-grid Price Policy for Small Hydropower (ZJZ [2014] No. 150), which stipulates:

1. Set the on-grid electricity price of small hydropower according to the time period of putting into operation. The on-grid electricity price of the small hydropower put into operation in 1993 and before is 0.43 yuan/kWh (including tax, the same below); the on-grid electricity price of the small hydropower put into operation from 1994 to 2005

is 0.46 yuan/kWh; the on-grid electricity price of the small hydropower put into operation in 2006 and later is 0.48 yuan / kWh.

2. Set a unified Time-of-use electricity price for the whole province according to the time of the hydropower plant put into operation. The time periods are divided: peak hours are from 8:00 to 22:00; trough hours are from 22:00 to 8:00 the next day.

3. Clarify the on-grid price policy for scrapped reconstruction and technological renovation of small hydropower plants. For the scrapped and reconstructed small hydropower plants, the on-grid price shall be implemented at the level corresponding to the completion time of the scrapped reconstruction. For small hydropower stations with capacity upgrading, the comprehensive on-grid power price shall be determined according to the weighted average on-grid price of the installed capacity and the corresponding on-grid electricity price before the renovation, and the increased capacity and the corresponding on-grid electricity price after the upgrading is completed.

6. What are the problems encountered in the implementation of GEF projects in your province (autonomous region or municipality directly under the central government)?

Environmental impact assessment constraints. The environmental impact assessment approval of Qingshuitan Hydropower Plant in Quzhou has been completed, and the relevant work such as EIA acceptance is being prepared. In accordance with the requirements of Environmental Protection Bureau, Panxi Cascade Hydropower Plant in Jinyun first carried out the environmental impact assessment of basin planning, and then carried out the environmental impact assessment of the project. At present, the Provincial Water Resources and Hydropower Survey and Design Institute is preparing the report of environmental impact assessment of basin planning.

Change of project core personnel. Currently, Panxi Cascade Power Generation Co., Ltd. entrusted Jinyun Power Supply Company to perform its operation and maintenance until December 31, 2018. All the original personnel returned to the power supply company, which had a certain impact on the project implementation

progress.

The hydropower plants are not familiar with the rules of the GEF grant project. It's the first time for both power plants to conduct a foreign project. They have no relevant project management experience and are not familiar with the rules of GEF grant projects. It is recommended to strengthen project training.

Fujian GEF Project Management Office

1. What is the overall progress of the GEF project in your province (autonomous region or municipality directly under the central government)?

There are 3 hydropower projects included in the GEF project in Fujian Province. They are Tangban Hydropower Plant in Lianjiang County, Jiaosan/Tantou Hydropower Plant in Taining County and Gaofang Cascade II Hydropower Plant in Pucheng County.

At present, Tangban Hydropower Plant and Jiaosan/Tantou Hydropower Plant have completed the renovation of the GEF project, and Gaofang Cascade II Hydropower Plant is expected to be completed in 2020.

2. Are there relevant management policies for green small hydropower development in your province (autonomous region or municipality directly under the central government)? Are there relevant incentives (such as electricity prices, taxes, etc.)? If so, please give a brief introduction.

In accordance with the spirit of the documents of the Ministry of Water Resources, Fujian province is formulating the Implementation Opinions on Promoting the Green Development of Hydropower Plants and soliciting opinions from various departments directly under the provincial government. In accordance with the requirements of the provincial government, we jointly drafted the Fujian Province Ecological Electricity Price Management Measures with the Provincial Price Bureau to explore the establishment of incentives and punishments for electricity price mechanisms, and guide and promote hydropower plants to implement ecological discharge flows through incentives and restrictions.

3. What changes have been made to the environmental protection policies and regulations (such as environmental impact assessment, water resources protection, aquatic life protection, etc.) of small hydropower in your province (autonomous region or municipality directly under the central government) after the implementation of GEF project?

On July 21, 2017, the Fujian Provincial People's Congress passed the Fujian Province

Water Resources Regulations, which put forward new regulations on hydropower plants: first, it is forbidden to build or expand hydropower projects that focus on power generation. The second is to strictly control the technological renovation of hydropower plants. The technical renovation of a hydropower plant shall meet the conditions of no change in the height of the dam, no increase in the inundation of the reservoir area, no change in the main characteristics of the reservoir, and no increase in the discharge of pollutants, and shall be reviewed and approved by the local people's government at or above the county level. If the operation time has reached the design limit, and the ecological impact has not been comprehensively demonstrated, the technical renovation shall not be approved. Third, the established hydropower plants shall strictly implement the minimum ecological discharge regulations. Fourth, local people's governments at or above the county level shall organize comprehensive demonstrations of hydropower plants that have been built in their administrative areas, and establish a gradual withdrawal mechanism for hydropower plants with serious potential safety hazards and great ecological impact. Hydropower plants that do not meet the requirements of the environmental impact assessment shall be shut down and demolished according to law. The comprehensive demonstration and withdrawal of hydropower plants shall be announced to the public. Fifth, it is clear that the period of the right to the development and use and management measures of hydropower resources can be formulated.

4. Are there guidelines and implementation rules for safe production of rural hydropower plants in your province (autonomous region or municipality directly under the central government)? If the answer is yes, please give a brief introduction.

There are no guidelines and implementation rules for safe production of rural hydropower plants in Fujian province.

5. Please give a brief introduction to the current grid price of small hydropower in your province (autonomous region or municipality directly under the central government).

Before 2007, Fujian province implemented the method of checking and approving the electricity price during the operation period, with one factory one price. Hydropower

plants approved after June 2007 set benchmark electricity prices in different stages according to different installed capacity and storage capacity adjustment capabilities. At present, the average on-grid electricity price in Fujian province is about 0.31 yuan/kWh.

6. What are the problems encountered in the implementation of GEF projects in your province (autonomous region or municipality directly under the central government)?

In the past two years, the drought is serious, the power generation revenue has sharply decreased year on year, the project self-raised amount is large, and the enterprise capital pressure is large; there are many approval links in some local financial audit departments, which affects the progress of the preliminary work. Some equipment manufacturers are unable to deliver on time, which restricts the progress of renovation.

Hubei GEF Project Management Office

1. What is the overall progress of the GEF project in your province (autonomous region or municipality directly under the central government)?

Four hydropower plants in Hubei Province are included in the GEF pilot project, including Zhoujialiang Hydropower Plant, Yangdaohe Cascade Hydropower Plants (Yangdaohe, Chaotianhou, Shijiaba, considered as one pilot plant), Jiugonghe Hydropower Plant and Jiangjunzhu Hydropower Plant (newly included in 2019). At present, all hydropower plants have completed the upgrading in 13th Five-Year Plan. All hydropower plants are expected to complete the renovation of GEF project in October 2020.

2. Are there relevant management policies for green small hydropower development in your province (autonomous region or municipality directly under the central government)? Are there relevant incentives (such as electricity prices, taxes, etc.)? If the answer is yes, please give a brief introduction.

Hubei Province has not yet officially issued relevant management policies for the development of green small hydropower.

3. What changes have been made to the environmental protection policies and regulations (such as environmental impact assessment, water resources protection, aquatic life protection, etc.) of small hydropower in your province (autonomous region or municipality directly under the central government) after the implementation of GEF project?

On August 9, 2017, Enshi Prefecture of Hubei province issued the Ecological Flow Supervision and Management Measures of Enshi Prefecture Hydropower Plant (Trial) (Enshi Prefecture SLF [2017] No. 34). Together with the environmental protection bureau and the electric power company of the prefecture, the ecological discharge of hydropower plants has been systematically regulated and the corresponding guarantee policies are specified.

4. Are there guidelines and implementation rules for safe production of rural hydropower plants in your province (autonomous region or municipality directly

under the central government)? If yes, please give a brief introduction.

In early 2014, Hubei province began to work on the implementation rules. On the basis of careful demonstration and extensive solicitation of opinions on the specific scope of application, institutional responsibilities, organizational procedures and implementation methods of hydropower plant safety production standardization construction in the whole province, the Implementation Rules of Provincial Rural Hydropower Station Safety Production Standardization Compliance Rating (Interim) (ESLG [2014] No.1) was reviewed and approved at the office meeting of the director general of the provincial water resources department on June 16, 2014.

5. Please give a brief introduction to the current grid price of small hydropower in your province (autonomous region or municipality directly under the central government).

At present, the on-grid electricity price of small hydropower in Hubei province is relatively complicated and not unified. The average on-grid price is 0.334 yuan/kWh.

6. What are the problems encountered in the implementation of GEF projects in your province (autonomous region or municipality directly under the central government)?

Jiugonghe Hydropower Plant is at risk of withdrawing from the pilot project of GEF due to many factors such as environmental impact assessment.

Guangdong GEF Project Management Office

1. What is the overall progress of the GEF project in your province (autonomous region or municipality directly under the central government)?

Only Guanxi Hydropower Plant in Ruyuan County, Shaoguan City is included in the GEF pilot project in Guangdong Province, and it is expected to complete the GEF project renovation by the end of this year.

2. Are there relevant management policies for green small hydropower development in your province (autonomous region or municipality directly under the central government)? Are there relevant incentives (such as electricity prices, taxes, etc.)? If yes, please give a brief introduction.

None.

3. What changes have been made to the environmental protection policies and regulations (such as environmental impact assessment, water resources protection, aquatic life protection, etc.) of small hydropower in your province (autonomous region or municipality directly under the central government) after the implementation of GEF project?

None.

4. Are there guidelines and implementation rules for safe production of rural hydropower plants in your province (autonomous region or municipality directly under the central government)? If yes, please give a brief introduction.

On December 30, 2014, the Notice on Printing and Distributing the Implementation Rules of the Guangdong Provincial Department of Water Resources on the Rural Hydropower Plant Safety Production Standardization Rating (Interim) (YSND (2014) No. 33) was released, which was implemented on February 1, 2015. The implementation rules are divided into eight chapters, including general rules, rating management, unit self-evaluation, external review, approval and rating, review agency, supervision and management, and others, with a total of forty articles. According to the actual situation of rural hydropower plants in our province, combined with the standards of the Ministry of Water Resources, the evaluation criteria were

appropriately modified and simplified. A total of 58 evaluation items were set up in 13 categories, and the vetoes were increased from 3 to 4, increasing those with major potential accidents and no treatment plan.

5. Please give a brief introduction to the current grid price of small hydropower in your province (autonomous region or municipality directly under the central government).

According to the Notice on the Implementation of the Minimum Protection Price of Small Hydropower On-grid Price (YFG Price (2016) 486) stipulated by the Guangdong Provincial Development and Reform Commission, the Guangdong Provincial Water Resources Department, and Guangdong Power Grid Co., Ltd., the on-grid electricity price of small hydropower plants with an installed capacity of 50,000 kilowatts and below that are priced separately is subject to the minimum protection price policy. For small hydropower plants within this range, if the original on-grid power price is lower than the current minimum protection price (that is, 43.82 cents per kilowatt-hour excluding tax), the on-grid price shall be raised to the minimum protection price standard and adjusted accordingly with the adjustment of the minimum protection price standard. If the on-grid electricity price is higher than the current minimum protection price, the on-grid electricity price shall remain unchanged.

6. What are the problems encountered in the implementation of GEF projects in your province (autonomous region or municipality directly under the central government)?

The winning bidder's supply and installation did not meet the expectation, resulting in the slow progress of the upgrading project, which affected the progress of part of GEF project; the environmental impact assessment involves water intake and water withdrawal, so it is planned to apply for the change of the landscape restoration of the hydropower plant, changing the “decoration of hoist platform and hoist room building” to “reconstruction of sewage treatment facilities”.

Guangxi Zhuang Autonomous Region GEF Project Management

Office

1. What is the overall progress of the GEF project in your province (autonomous region or municipality directly under the central government)?

Four hydropower plants in Guangxi are included in the GEF pilot project, namely, Sandieling Hydropower Plant, Dongpai Hydropower Plant, Aibu Cascade II Hydropower Plant, and Aibu Cascade III Hydropower Plant in Jingxi City.

At present, Sandieling Hydropower Plant, Dongpai Hydropower Plant and Aibu Cascade II Hydropower Plant have completed the upgrading in 13th Five-Year Plan and have been put into operation. Aibu Cascade III Hydropower Plant is expected to complete the renovation of 13th Five-Year Plan and put into operation by the end of this year. So far, the GEF renovation of the four hydropower plants has not been completed and is expected to be completed in September 2020.

2. Are there relevant management policies for green small hydropower development in your province (autonomous region or municipality directly under the central government)? Are there relevant incentives (such as electricity prices, taxes, etc.)? If yes, please give a brief introduction.

There are currently no relevant management policies for the development of green small hydropower in Guangxi, and there are no relevant incentive measures such as electricity prices and taxes.

3. What changes have been made to the environmental protection policies and regulations (such as environmental impact assessment, water resources protection, aquatic life protection, etc.) of small hydropower in your province (autonomous region or municipality directly under the central government) after the implementation of GEF project?

1). In December 2015, the Environmental Protection Department of Guangxi Zhuang Autonomous Region issued the Notice on Printing and Distributing the List of Construction Projects Not Included in the Environmental Impact Assessment Approval of Guangxi Zhuang Autonomous Region (Revised in 2015) (GHF [2015]

No. 31). The renovation project (the plant location, the installed capacity, etc. remain unchanged) is not included in the list of construction projects approved by the environmental impact assessment (revised in 2015).

2). In May 2017, Guangxi listed the “Environmental Impact Assessment Documents Approved” as one of the conditions for the construction preparation and commencement of water conservancy projects according to the Notice of the Ministry of Water Resources from the Ministry of Water Resources on Adjusting the Construction Preparation and Commencement Conditions of Water Conservancy Projects (GSJ [2017] No. 11) .

4. Are there guidelines and implementation rules for safe production of rural hydropower plants in your province (autonomous region or municipality directly under the central government)? If yes, please give a brief introduction.

At present, there are no guidelines and implementation rules for safe production of rural hydropower plants in Guangxi, and the relevant work is carried out in accordance with the relevant requirements of the Ministry of Water Resources.

5. Please give a brief introduction to the current grid price of small hydropower in your province (autonomous region or municipality directly under the central government).

According to the Guangxi Hydropower Annual Report, the average electricity price of small hydropower in Guangxi in 2016 was 0.2735 yuan/kWh in China Southern Power Grid, and the average electricity price on the rural hydropower grid was 0.2817 yuan/kWh.

6. What are the problems encountered in the implementation of GEF projects in your province (autonomous region or municipality directly under the central government)?

The EIA procedures of Aibu Cascade II and III Hydropower Plants, Sandialing and Dongpai Hydropower Plants are being processed, and have not been approved by the environmental protection department; the construction of Aibu Cascade III Hydropower Plant is hindered by local villagers, and the progress is slow.

Chongqing GEF Project Management Office

1. What is the overall progress of the GEF project in your province (autonomous region or municipality directly under the central government)?

A total of 5 power stations in Chongqing are included in the GEF pilot project, including: Majing Hydropower Plant in Qijiang District, Xiaokeng Hydropower Plant in Beibei District, Gaokeng Hydropower Plant in Tongliang District, Taiping Hydropower Plant in Yunyang County, Jingtanfeng/Huangyan Hydropower Plant in Wuxi County. At present, with the exception of Xiaokeng Hydropower Plant, the remaining 4 hydropower plants have been put into operation for power generation. The renovation of the GEF project of 5 hydropower plants is expected to be completed in October 2020.

2. Are there relevant management policies for green small hydropower development in your province (autonomous region or municipality directly under the central government)? Are there relevant incentives (such as electricity prices, taxes, etc.)? If yes, please give a brief introduction.

Chongqing has not yet issued relevant management policies and incentive mechanisms for the development of green small hydropower.

3. What changes have been made to the environmental protection policies and regulations (such as environmental impact assessment, water resources protection, aquatic life protection, etc.) of small hydropower in your province (autonomous region or municipality directly under the central government) after the implementation of GEF project?

All new projects and renovation projects shall complete environmental impact assessments in accordance with regulations.

4. Are there guidelines and implementation rules for safe production of rural hydropower plants in your province (autonomous region or municipality directly under the central government)? If yes, please give a brief introduction.

None.

5. Please give a brief introduction to the current grid price of small hydropower in your province (autonomous region or municipality directly under the central government).

The on-grid electricity price of small hydropower put into operation before December 1, 2011 is 0.295 yuan/kWh, and the on-grid electricity price of small hydropower put into operation on and after December 1, 2011 is 0.305 yuan/kWh.

6. What are the problems encountered in the implementation of GEF projects in your province (autonomous region or municipality directly under the central government)?

Except for Xiaokeng Hydropower Plant, the EIA of the remaining 4 hydropower plants has not been approved. It is planned to improve the relevant EIA procedures through comprehensive assessment of small hydropower cleaning and rectification.

Yunnan GEF Project Management Office

1. What is the overall progress of the GEF project in your province (autonomous region or municipality directly under the central government)?

Currently, three hydropower plants in Yunnan Province are included in the GEF pilot project, including Mabozi Hydropower Plant in Tonghai County, Yuxi City, Chahe Hydropower Plant in Shiping County, Honghe Prefecture, and Maoyandong Cascade II Hydropower Plant in Luxi County, Honghe Prefecture. At present, Chahe Hydropower Plant and Maoyandong Cascade II Hydropower Plant have completed the upgrading and renovation in 13th Five-Year Plan, and Mabozi Hydropower Plant is expected to complete the upgrading and put into operation by the end of this year. None of the three hydropower plants has completed the renovation of GEF project, which is expected to be completed in October 2020.

2. Are there relevant management policies for green small hydropower development in your province (autonomous region or municipality directly under the central government)? Are there relevant incentives (such as electricity prices, taxes, etc.)? If yes, please give a brief introduction.

In July 2017, in accordance with the spirit of the documents of the Ministry of Water Resources, the Department of Water Resources of Yunnan Province initiated the establishment of green small hydropower under the Notice of the Department of Water Resources of Yunnan Province on the Establishment of Green Small Hydropower Plants (YSD [2017] No.7). Currently, Yunnan Province has not issued relevant management policies and incentive measures for the development of green small hydropower.

3. What changes have been made to the environmental protection policies and regulations (such as environmental impact assessment, water resources protection, aquatic life protection, etc.) of small hydropower in your province (autonomous region or municipality directly under the central government) after the implementation of GEF project?

After 2015, all small hydropower construction projects (including renovation projects) require the approval of environmental impact assessment and water resource

demonstration reports. All hydropower plant projects of rural hydropower upgrading and renovation in Yunnan Province in the 13th Five-Year Plan require the approval of environmental impact assessment and water resource demonstration report. Before 2015, only some prefectures and cities had EIA approval requirements for upgrading projects.

4. Are there guidelines and implementation rules for safe production of rural hydropower plants in your province (autonomous region or municipality directly under the central government)? If yes, please give a brief introduction.

In 2014, the Department of Water Resources of Yunnan Province referred to the Notice of the Department of Water Resources of Yunnan Province on Printing and Distributing the Implementation Plan for Safety Production Standardization Construction in Yunnan Province (YSAJ [2014] No. 47) and the Notice of the Department of Water Resources of Yunnan Province on Printing and Distributing the Opinions on the Division of Powers for Safety Production Supervision of Water Conservancy Project Construction in Yunnan Province (YSAJ [2014] No. 50) to arrange the construction of safety production standardization and clarify the responsibilities of rural hydropower safety supervision. At present, Yunnan Province has not issued guidelines and implementation rules for safe production of rural hydropower plants.

5. Please give a brief introduction to the current grid price of small hydropower in your province (autonomous region or municipality directly under the central government).

Yunnan power grid has basically formed the pattern of “one network” in the whole province. Among the 16 prefectures (cities) in the province, except that Baoshan City (Longyang, Shidian, Tengchong, Longling, and Changning 5 counties) is managed and operated by Yunnan Baoshan Power Co., Ltd., the other 15 prefectures (cities) are managed by China Southern Power Grid Yunnan Company.

The on-grid electricity price of small hydropower in Yunnan Province is relatively complicated. There is no unified on-grid electricity price because of different affiliations, different regions, different operation times, and different on-grid periods.

Basically, the pricing is based on the areas, which is generally divided into three categories, namely, the electricity price in the network, the electricity price in the network transaction, and the electricity price in the non-unified area. According to the Notice of Yunnan Provincial Price Bureau on Issues Related to the Adjustment and Improvement of the Time-of-use Electricity Price Policy in Yunnan Province (YJJG [2013] No. 139), the on-grid electricity prices of other small and medium-sized hydropower plants are uniformly adjusted to 0.235 yuan per kilowatt-hour. The electricity price system of Dehong, Nujiang, Lijiang, Diqing, Lincang, Wenshan and other 6 prefectures (cities) with relatively independent electricity price system provides Yunnan Power Grid Company with the same on-grid electricity price for small and medium hydropower as Yunnan Power Grid, that is, 0.235 yuan per kilowatt-hour (specifically: 0.192 yuan during the wet season, 0.235 yuan during the normal water season, and 0.282 yuan during the dry season). At present, the actual average on-grid electricity price of small hydropower in the province is between 0.12 and 0.222 yuan/kWh.

6. What are the problems encountered in the implementation of GEF projects in your province (autonomous region or municipality directly under the central government)?

Initially five hydropower plants in Yunnan Province were included in the GEF pilot project. Among them, Jiuqianyan Hydropower Plant in Pingbian County, Honghe Prefecture and Quanjiaohe Cascade I/II Hydropower Plants in Yangbi County, Dali Prefecture could not continue to implement the upgrading and renovation in 13th Five-Year Plan due to environmental impact assessment and legal person change. As a result, they were forced to withdraw from GEF pilot project, which had a certain impact on the overall implementation of the project.

Shannxi GEF Project Management Office

1. What is the overall progress of the GEF project in your province (autonomous region or municipality directly under the central government)?

A total of 3 hydropower plants in Shaanxi are included in the GEF pilot project, including: Baiyunxia Hydroower Plant in Taibai County, Baoji City, Xiakou Hydroower Plant in Taibai County, Baoji City, and Xinpingya Hydroower Plant in Ziyang County, Ankang City.

At present, the upgrading and renovation in the 13th Five-Year Plan of all three hydropower plants have been completed and put into operation for power generation. It is expected that the renovation of the GEF project of Xinpingya Hydroower Plant will be completed by the end of this year, and the renovation of the GEF project of the other two hydropower plants will be completed in October 2020.

2. Are there relevant management policies for green small hydropower development in your province (autonomous region or municipality directly under the central government)? Are there relevant incentives (such as electricity prices, taxes, etc.)? If yes, please give a brief introduction.

In 2006, 2010, and 2014, our department successively issued the Notice on Issues Concerning the Minimum Discharge of Rural Hydropower Plants (SSDF [2007] No. 6), the Notice on Strengthening of Hydropower Resources Development Management and Maintenance of Ecological Safety (SSDF [2010] No. 11) and the Guiding Opinions on Green Hydropower Construction, which clarifies the requirements for ecological water discharge standards, engineering measures, and operation modes.

There is no incentive policy yet. There are four hydropower plants at the head of Linjiacun (installed capacity of 8MW), Weijiapu (installed capacity of 18.9MW), Yangling (installed capacity of 5.4MW), Jiangzhang (installed capacity of 0.4MW) at the Baoji Gorge Diversion Irrigation District in the main stream of the Weihe River in Shaanxi Province, with a total installed capacity of 32.7MW, an average annual power generation of 150 million kWh and income of more than 50 million yuan. Hydropower is an important economic support for the irrigation area. In order to

ensure the ecological flow of the Baoji section of the Weihe River, from March 25, 2014, the operation mode of the three hydropower plants was adjusted to discharge the ecological water in full, so that an ecological flow of 5m³/s in the Baoji section of the Weihe River is guaranteed, and the annual power generation is reduced by more than 20 million KWh. Starting from January 20, 2016, "5 (months) in power generation and 7 (months) in suspension" has been implemented, and the three hydropower plants of Weijiapu, Yangling and Jiangzhang have been suspended. In 2016, there was 6 million yuan compensation fund for ecological dispatching.

3. What changes have been made to the environmental protection policies and regulations (such as environmental impact assessment, water resources protection, aquatic life protection, etc.) of small hydropower in your province (autonomous region or municipality directly under the central government) after the implementation of GEF project?

No environmental protection policies and regulations specifically for small hydropower have been issued. After the revision of the Planning Environmental Impact Assessment Law, the requirements for planning environmental impact assessment are more stringent, and rivers that have not undergone planning environmental impact assessment are not allowed to be developed.

4. Are there guidelines and implementation rules for safe production of rural hydropower plants in your province (autonomous region or municipality directly under the central government)? If yes, please give a brief introduction.

Shaanxi Province has formulated the Technical Guidelines for Rural Hydropower Safety Production Standardization in Shaanxi Province, and the Scoring Standards for Rural Hydropower Safety Production Standardization in Shaanxi Province, and published the book Management Mode of Safety Production Standardization of Small Hydropower Plants.

5. Please give a brief introduction to the current grid price of small hydropower in your province (autonomous region or municipality directly under the central government).

For a single station with a total installed capacity of more than 25,000 kW, the on-grid

electricity price is 0.335 yuan/kWh, and the remaining is 0.325 yuan/kWh.

6. What are the problems encountered in the implementation of GEF projects in your province (autonomous region or municipality directly under the central government)?

The environmental impact assessment of three hydropower plants has not been approved yet. Baiyunxia Hydropower Plant and Xiakou Hydropower Plant are located in the Qinling hinterland water source protection area. In recent years, with the comprehensive development of Qinling ecological environment improvement, the management of hydropower plants within the jurisdiction is relatively strict, and there are many constraints, which is expected to have a certain impact on the production and operation of hydropower plants in the later stage; the price of raw materials fluctuates greatly, due to the adjustment and change of national policies, the market prices of raw materials such as sand and gravel have increased significantly, resulting in a large gap between the initial budget and actual expenditure, and the construction cost has increased.

(II) Statistical analysis on questionnaire of GEF pilot hydropower

plants

(21 copies in total, excluding Jiangjunzhu Hydropower Plant and Jiugonghe Hydropower Plant)

Basic information of respondents (GEF pilot hydropower plants)

No.	Name	Organization	Title	Contact
1	姚唐春	盘溪梯级电站	经理	15988039889
2	黄成刚	清水潭电站	经理	13567049802
3	吴泽	塘坂电站	副厂长	13599077679
4	刘宜常	角三/滩头电站	董事长	13507567273
5	钟信群	高坊二级电站	经理	13860051527
6	万常顺	杨道河梯级电站	经理	13507245850
7	郑双彬	周家梁电站	站长	13997848801
8	张建平	官溪电站	站长	13326538005
9	潘海防	三叠岭/峒牌	总工	13481691211
10	潘海防	爱布二级/三级电站	总工	13481691211
11	贺勇	马颈电站	副经理	13983226186
12	殷庆明	小坑电站	董事长	13808339878
13	刘平	高坑电站	经理	13883118828
14	但春建	太平电站	站长	13983500723
15	邹斌	净坛峰/黄岩电站	站长	13983532159
16	钱家学	马脖子电站	董事长	13887664977
17	李锦云	岔河电站	总工	13908736297
18	袁旭	冒烟洞二级电站	总工	15126118879
19	杨军平	白云峡电站	经理	13992763596
20	杨军平	峡口电站	经理	13992763596
21	李晓明	新坪垭电站	李晓明	13700252754

Statistical analysis of questionnaires (GEF pilot hydropower plants)

Questions	Options	Quantity	Proportion to total questionnaires
1. Is the hydropower plant project in your location progressing smoothly?	A. Smooth	19	90.48%
	B. Average	2	9.52%
	C. Not smooth	0	0.00%
2. Do you think the construction of this project has improved the safe and economic operation level of the hydropower plant?	A. Yes	21	100.00%
	B. Not necessarily	0	0.00%
	C. No	0	0.00%
3. Do you think the construction of this project is conducive to the healthy and sustainable development of the small hydropower industry?	A. Yes	21	100.00%
	B. Not necessarily	0	0.00%
	C. No	0	0.00%
4. Do you think that the implementation of the project has a significant impact on the local natural environment?	A. Obvious	0	0.00%
	B. Average	3	14.29%
	C. Not obvious	18	85.71%
5. Do you think it will help the local economic development after the project ends?	A. Obvious (17)	17	80.95%
	B. Average (3)	3	14.29%
	C. Not obvious (1)	1	4.76%
6. What's your comments and suggestions on this project?	<p>1. The project implementation cycle from application to approval is too long and the procedures are complicated. It is recommended to appropriately simplify the approval process.</p> <p>2. There are many procedures for GEF grant reimbursement. It is recommended to strengthen training to improve the reimbursement efficiency.</p> <p>3. It is recommended to organize the project owners to communicate with different pilot hydropower plants and learn from the advanced practices and concepts of other hydropower plants.</p>		

(III) Statistical analysis on questionnaire of GEF pilot hydropower plants

(102 copies in total, including 36 from community where Panxi Cascade Hydropower Plant is located, 36 from community where Tangban Hydropower Plant is located and 30 from community where Yangdaohe Cascade Hydropower Plant is located)

Basic information of respondents (Community where Panxi Cascade Hydropower Plant is located)

No.	Name	Gender	Village or workplace	Contact
1	胡乐雄	男	盘溪二级电站	13735929942
2	杜金慧	女	盘溪二级电站	13957091067
3	胡桂兰	男	胡源乡上坪村	13587138946
4	胡永富	男	胡源乡上坪村	15988001906
5	李士燕	女	胡源乡上坪村	13957094842
6	潜英丹	女	胡源乡上坪村	13587149433
7	胡道庆	男	胡源乡胡林村	15857892846
8	胡怀波	男	胡源乡胡林村	15057881656
9	陈志伟	男	胡源乡怀岙口村	15105881370
10	胡戾伟	男	胡源乡怀岙口村	13757845903
11	杜康	男	盘溪三级电站	15988010909
12	潜威	男	盘溪三级电站	13625781959
13	蒋缙君	女	盘溪三级电站	15957807996
14	徐宅炉	男	胡源乡蛟坑村	13567644318
15	徐焕钟	男	胡源乡蛟坑村	15557826048
16	徐淑芳	女	胡源乡蛟坑村	15990881220
17	胡柏翠	女	胡源乡蛟坑村	15557811569
18	徐慧仙	女	胡源乡蛟坑村	13967063487
19	周子叶	女	胡源乡蛟坑村	/
20	樊岳强	男	胡源乡胡林村	15967259925
21	章勇峰	男	胡源乡章村村	/
22	张浙山	男	胡源乡章村村	/
23	张浙川	男	胡源乡章村村	13906781656
24	胡碧莺	女	胡源乡章村村	13957044682
25	张志标	男	胡源乡上东山村	/
26	胡伟英	女	胡源乡胡村	13757845825
27	刘支梅	女	胡源乡胡村	/
28	潜芬丹	女	胡源乡胡村	/
29	陈灵芬	女	胡源乡怀岙口村	18857811330
30	胡寿群	女	胡源乡怀岙口村	15057881022

No.	Name	Gender	Village or workplace	Contact
31	陈慧丹	女	胡源乡怀岙口村	13567631554
32	蔡政润	男	国网浙江省缙云县供电公司	15215777127
33	胡海默	女	胡源乡人民政府	/
34	叶丽	女	胡源乡人民政府	/
35	李乐华	女	胡源乡人民政府	18767838109
36	李鹏来	男	胡源乡人民政府	15857898772

Basic information of respondents (Community where Tangban Hydropower Plant is located)

No.	Name	Gender	Village or workplace	Contact
1	陈玲	女	潘渡乡塘坂村	15880115562
2	兰金莲	女	潘渡乡塘坂村	13600847060
3	陈芸妹	女	潘渡乡塘坂村	13665029454
4	林辉英	女	潘渡乡塘坂村	13515003052
5	雷明香	女	潘渡乡塘坂村	13905002104
6	陈金伙	男	潘渡乡塘坂村	13950256586
7	赖和平	男	潘渡乡塘坂村沙洲自然村	13675018809
8	兰忠毅	男	潘渡乡塘坂村	13489948003
9	周丽英	女	潘渡乡塘坂村沙洲自然村	15880426091
10	兰华荣	男	潘渡乡塘坂村沙洲自然村	15005947411
11	陈和清	男	潘渡乡塘坂村沙洲自然村	18150036877
12	张银花	女	潘渡乡塘坂村龙村自然村	13509385686
13	黄义灯	男	潘渡乡塘坂村龙村自然村	13799320577
14	雷振文	男	潘渡乡塘坂村半岭自然村	15280019598
15	陈国水	男	潘渡乡高岳村	13509384838
16	雷本耀	男	潘渡乡高岳村	15980137292
17	赖美兰	女	潘渡乡高岳村	13645076168
18	文金顺	女	潘渡乡高岳村	17706908410
19	陈淑英	女	潘渡乡高岳村	13860698029
20	兰春莲	女	潘渡乡高岳村	15859170133
21	雷春如	男	潘渡乡高岳村	13950341004
22	吴克仲	男	潘渡乡政府	15806031787
23	邱景燕	女	潘渡乡政府	13338295309
24	洪必荣	男	潘渡乡政府	13459429615
25	吴舒婷	女	潘渡乡政府	13960880899
26	张华平	男	潘渡乡政府	13860697728
27	雷宗钗	女	小沧乡利洋村	13459425686
28	兰晓尧	男	小沧乡利洋村	13509310259
29	雷云霞	男	小沧乡利洋村	13960944686
30	雷瑞香	女	小沧乡利洋村	13509310236
31	张强	男	山仔水力发电厂	13509387034
32	谢银霞	女	山仔水力发电厂	13960879996
33	黄端萍	女	山仔水力发电厂	13509387131
34	黄宇	男	贵安温泉旅游区管委会	13799349448
35	林燕	女	贵安温泉旅游区管委会	15806017407
36	林礼明	男	连江县电力有限公司	13509385952

Basic information of respondents (Community where Tangban Hydropower Plant is located)

No.	Name	Gender	Village or workplace	Contact
1	黄德失	男	石家坝电站	13227299896
2	陈海燕	女	杨道河电站	13872609536
3	陈学琼	女	杨道河电站	13872511095
4	王岩	男	杨道河电站	13872553003
5	万忠梅	女	杨道河电站	13972013513
6	高晓琴	女	杨道河电站	15090873016
7	李俊	女	高岚河流域办	13997678976
8	朱琴琴	女	兴瑞公司	13487257557
9	朱永国	男	杨道河村委会	15171779828
10	胡文浩	男	李家山村委会	13032720410
11	彭玲	女	杨道河村委会	13886666911
12	闫江兴	男	黄梁水保站	18694089675
13	周娥	女	杨道河村委会	13697299219
14	彭光照	男	黄梁镇居委会	13997744077
15	孙瑞勇	男	水月寺镇高岚居委会	13872515985
16	周能会	女	高岚居委会	15090917529
17	王兆峰	男	高岚居委会	18808607251
18	万忠华	男	高岚河村委会	13986826776
19	丁梨梨	女	高岚河流域办公室	13972594147
20	舒庆华	女	杨道河电站	15871544608
21	杨光海	男	杨道河电站	13508603956
22	陈大树	男	杨道河电站	13986826488
23	王雪春	女	杨道河电站	15071777408
24	李雪峰	男	李家山村委会	13227299836
25	陈世乾	男	石家坝村委会	13997698172
26	舒启新	男	石家坝村委会	15007202495
27	万奇知	男	石家坝村委会	15997579546
28	龚媛媛	女	峡口居委会	15971635268
29	朱远菊	女	建丽坪村委会	13872483789
30	万军知	男	杨道河电站	15926949532

Statistical analysis of questionnaire (community of GEF pilot hydropower plant)

	Project	Number of people	Proportion of total questionnaires
Gender	Male	52	50.98%
	Female	50	49.02%
Age	Under 20	4	3.92%
	20~40	40	39.22%
	41~60	45	44.12%
	>60	13	12.75%
Education	Primary school and below	6	5.88%
	Junior middle school	34	33.33%
	High school or technical secondary school	31	30.39%
	College and above	27	26.47%
What do you know about the utilization of the river where the hydropower plant is located?	Daily life water	49	48.04%
	Irrigation and other production water	38	37.25%
	No production or domestic water	15	14.71%
What is your current annual income?	10,000 to 20,000	13	12.75%
	20,000 to 30,000	26	25.49%
	30,000 to 40,000	29	28.43%
	40,000 to 50,000	17	16.67%
	50,000 to 60,000	12	11.76%
	More than 60,000	5	4.90%
What is the current impact of this project on you? (multiple choices)	Water environment impact	10	9.80%
	Noise impact	10	9.80%
	Impact of production, living, and ecological water use	22	21.57%
	Landscape and ecological environment impact	24	23.53%
	Provide employment opportunities and promote local economic development	65	63.73%
What is the current quality of power supply in	Sufficient use of electricity, good quality of power supply	91	89.22%

your residence?	The use of electricity is sufficient, occasionally insufficient, and the quality of power supply is good	11	10.78%
	Poor use of electricity and poor quality of power supply	0	0.00%
What's your comments and suggestions on this roject?	<p>Panxi Cascade Hydropower Plant:</p> <ol style="list-style-type: none"> 1. It is recommended that the surplus water from the Panxi Cascade II Hydropower Plant shall not directly flow into the mountain pit from the front pond. 2. The tail water of the Cascade III Hydropower Plant is directly led to the Cascade IV Hydropower Plant for power generation, and the water for production, living and ecology of the downstream dehydrated river is insufficient, which is expected to be improved. 3. The operation noise of the hydropower plant is expected to be improved to reduce the impact on the personnel on duty. 4. The water quality of the river is expected to be improved. <p>Tangban Hydropower Plant:</p> <ol style="list-style-type: none"> 1. The upstream water quality is expected to be improved to ensure the ecological environment. 2. It is expected that the hydropower plant will increase the support for the environmental construction of local villagers. 3. It is recommended that the hydropower plant help surrounding villages build more infrastructure. 4. It is expected that the hydropower plant will provide more employment opportunities for local villagers. 5. It is suggested to strengthen the protection of water resources. <p>Yangdaohe Cascade Hydropower Plant:</p> <ol style="list-style-type: none"> 1. Expect to use mature and advanced automation equipment to reduce the difficulty of operation. Improve the operation noise of the hydropower plant and reduce the impact on the personnel on duty. 2. Expect to improve the water quality of the river and beautify the landscape environment. 		

Annex 9: Photos of on-site investigation

(I) Panxi Cascade Hydropower Plant in Jinyun County, Lishui City, Zhejiang Province



Powerhouse of Panxi Cascade I Hydropower Plant



Powerhouse of Panxi Cascade I Hydropower Plant



Powerhouse of Panxi Cascade III Hydropower Plant



Dayang reservoir



Ecological flow relief valve



Management system of ecological flow relief valve



Shallows restoration construction site



On-site investigation of performance evaluation

(II) Tangban Hydropower Plant, Lianjiang county, Fuzhou City, Fujian Province



Powerhouse of Tangban Hydropower Plant



Tangban Reservoir



Sewage treatment station



Plant greening renovation



Ecological flow monitoring system



Downstream channel of hydropower plant



Gate opening and closing control system



On-site investigation of performance evaluation

(III) Yangdaohe Cascade Hydropower Plant in Xingshan County, Yichang City, Hubei Province



Powerhouse of Yangdaohe Hydropower Plant



Powerhouse of Shijiaba Hydropower Plant



Powerhouse of Chaotianhou Hydropower Plant



Ecological flow weir



Ecological flow monitoring device



Ecological environment of downstream river



Hydropower plant staff post card



On-site investigation of performance evaluation

Annex 10: Minutes of the stakeholders consultation meeting

Time: January 13, 2020

Venue: Conference room on the first floor of the International Center on Small Hydro Power

Participants: Guo Yonghong, Feng Aiming, Li Youmei, Luo Yunxia, Wu Yanming, Hu Xiaobo, Chu Shiji, Zhang Yingnan, Bao Lina



On January 13, 2020, the International Center on Small Hydro Power organized a symposium for soliciting opinions on the performance evaluation report of this project. Representatives of the central project management office, the project performance evaluation team and other related parties attended the meeting (list attached). The evaluation team and representatives of various stakeholders conducted full exchanges and discussions on the first draft of the performance evaluation report, and the meeting minutes were as follows:

The content of the evaluation report is informative, objective and fair, without major omissions, the evaluation is organized scientifically, the evaluation process is accurate, the evidence collection and data quotation of the evaluation are reasonable, and the evaluation conclusion is in line with the actual situation.

2. Considering that the project is currently in the mid-term implementation stage, it is recommended that the name of the report be Project Mid-term Performance

Evaluation Report; it is suggested that the performance ratings of “relevance”, “efficiency”, “effect”, “sustainability” and “comprehensive performance” shall be rated in more detail; it is recommended to switch the order of “2.2 Evaluation Design and Implementation” and “2.3 Performance Evaluation Framework and Performance Rating Methods” to make the report structure more logical; it is suggested that the description of ecological flow, environmental protection, social benefits, gender issues and other indicators shall be further improved.

3. According to the feedback and suggestions from stakeholders, the evaluation team supplemented and improved the first draft of the report, and completed the final draft of the evaluation report on this basis.

GEF Upgrading of China SHP Capacity Project
Attendance Form of the Symposium for Comments on Mid-term
Performance Evaluation Report
(January 13,
2020)

全球环境基金中国小水电增效扩容改造增值项目
中期绩效评价报告征求意见座谈会签到表
(2020年1月13日)

序号	姓名	单位	职务/职称	签名
1	郭永洪	中国计量大学	副教授	郭永洪
2	冯爱明	中国计量大学	高工	冯爱明
3	李有梅	中国计量大学	教授	李有梅
4	罗云霞	浙江水利水电学院	教授	罗云霞
5	吴燕明	特邀专家	教高	吴燕明
6	胡晓波	国际小水电中心	处长	胡晓波
7	楚士冀	国际小水电中心	项目官员	楚士冀
8	张影南	国际小水电中心	项目官员	张影南
9	包丽娜	国际小水电中心	项目官员	包丽娜

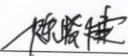
Annex 11: Feedback for performance evaluation report

全球环境基金（GEF）中国小水电增效扩容改造增值项目 绩效评价报告征求意见表

全球环境基金（GEF）中国小水电增效扩容改造增值项目绩效评价，主要是对项目活动的设计、当前实施和管理情况、项目成果产出及影响等进行中期绩效评价，评价的时间范围从2016年6月全球环境基金理事会批准项目建议书到2019年9月绩效评价之时。根据《国际金融组织贷款项目绩效评价操作指南》给出的评价规则和项目综合绩效评级方法，评价小组谨慎地对该项目的相关性、效率、效果、可持续性以及综合绩效进行评价，提出了评价结论、经验教训和对策建议，并形成了评价报告。按照开展绩效评价工作的规定，现向本项目的执行和实施部门及主要利益相关方沟通，主要就评价报告的客观性、评价结果的应用等征求意见和建议。

对绩效评价报告的意见和建议（可另附页）

无意见

填写人（签字）：

工作单位：浙江省水电管理中心

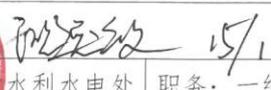
职务：副总工

电话：139 5810 8259

日期：2020.1.7

On January 7, 2020, Chen Xiaojian from Zhejiang Hydropower Management Center, had no comment on the performance evaluation report.

**全球环境基金（GEF）中国小水电增效扩容改造增值项目
绩效评价报告征求意见表**

<p>全球环境基金（GEF）中国小水电增效扩容改造增值项目绩效评价，主要是对项目活动的设计、当前实施和管理情况、项目成果产出及影响等进行中期绩效评价，评价的时间范围从2016年6月全球环境基金理事会批准项目建议书到2019年9月绩效评价之时。根据《国际金融组织贷款项目绩效评价操作指南》给出的评价规则和项目综合绩效评级方法，评价小组谨慎地对该项目的相关性、效率、效果、可持续性以及综合绩效进行评价，提出了评价结论、经验教训和对策建议，并形成了评价报告。按照开展绩效评价工作的规定，现向本项目的执行和实施部门及主要利益相关方沟通，主要就评价报告的客观性、评价结果的应用等征求意见和建议。</p>	
<p>对绩效评价报告的意见和建议（可另附页）</p> <p style="text-align: center; margin-top: 20px;">无意见。</p>	
<p>填写人（签字）： 欧逸敏 </p>	
<p>工作单位：福建省水利厅农村水利水电处</p>	<p>职务：一级调研员</p>
<p>电话：18905019586</p>	<p>日期：2020年1月15日</p>

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On January 15, 2020, Ou Yimin from Rural Water Conservancy and Hydropower Department, Fujian Provincial Water Resources Department, had no comment on the performance evaluation report.

**全球环境基金（GEF）中国小水电增效扩容改造增值项目
绩效评价报告征求意见表**

全球环境基金（GEF）中国小水电增效扩容改造增值项目绩效评价，主要是对项目活动的设计、当前实施和管理情况、项目成果产出及影响等进行中期绩效评价，评价的时间范围从2016年6月全球环境基金理事会批准项目建议书到2019年9月绩效评价之时。根据《国际金融组织贷款项目绩效评价操作指南》给出的评价规则和项目综合绩效评级方法，评价小组谨慎地对该项目的相关性、效率、效果、可持续性以及综合绩效进行评价，提出了评价结论、经验教训和对策建议，并形成了评价报告。按照开展绩效评价工作的规定，现向本项目的执行和实施部门及主要利益相关方沟通，主要就评价报告的客观性、评价结果的应用等征求意见和建议。

对绩效评价报告的意见和建议

一、P22表3.9“十三五”农村水电增效扩容改造进展情况作如下修改：

省份	试点电站	是否完成改造	完工验收时间	竣工验收时间
广东	官溪	√	2019.12	预计2020.12

二、P26~P27表3.10“GEF增值改造进展情况”作如下修改：

省份	试点电站	已完成	待完成		
			活动	已完成工程量比例	预计完成时间
广东	官溪	1.设置保障最小下泄流量的泄放及监测设备； 2.安装防止油料外泄的设施； 3.河道清淤及防洪坡修理； 4.电站景观恢复	1.安全生产标准化建设	已全面开展安全生产标准化建设，制定了实施方案和计划，目前正在进行标准化资料整理	2020.03
			2.绿色小水电评价	正咨询第三方	2020.10

三、P57新增装机1200kW。

填写人（签字）：

工作单位：广东省水利厅农水农电处	职务：副处长
电话：020-38356556	日期：2019.01.08

On January 8, 2019, Xu Yi from Rural Water Conservancy and Hydropower Department, Guangdong Provincial Water Resources Department had the comments on the performance evaluation report as follows:

1. Table 3.9 The progress of rural hydropower upgrading in the 13th Five-Year Plan on Page 22 is modified as follows:

Province	Pilot plant	Completed or not	Completion acceptance time	Final completion acceptance time
Guangdong	Guanxi	√	December, 2019	Expected to be in December, 2020

2. Table 3.10 “Progress of GEF Value-added Renovation Project” on Pages 26-27 is modified as follows:

Province	Pilot hydropower plant	Completed	To be completed		
			Activities	Proportion of completed works	Estimated completion time
Guangdong	Guanxi	1. Set up discharge and monitoring equipment to ensure the minimum discharge flow; 2. Install facilities to prevent oil leakage; 3. River silt removal and flood control slope repair; 4. Landscape restoration of hydropower plant	Safety production standardization construction	The construction of safety production standardization has been fully carried out, the implementation plan and schedule have been formulated, and the standardization data is currently being collated	March.2020
			2. Green small hydropower evaluation	Is consulting a third party	October, 2020

3. On Page 57 Newly installed capacity of 1200kW

**全球环境基金（GEF）中国小水电增效扩容改造增值项目
绩效评价报告征求意见表**

全球环境基金（GEF）中国小水电增效扩容改造增值项目绩效评价，主要是对项目活动的设计、当前实施和管理情况、项目成果产出及影响等进行中期绩效评价，评价的时间范围从2016年6月全球环境基金理事会批准项目建议书到2019年9月绩效评价之时。根据《国际金融组织贷款项目绩效评价操作指南》给出的评价规则和项目综合绩效评级方法，评价小组谨慎地对该项目的相关性、效率、效果、可持续性以及综合绩效进行评价，提出了评价结论、经验教训和对策建议，并形成了评价报告。按照开展绩效评价工作的规定，现向本项目的执行和实施部门及主要利益相关方沟通，主要就评价报告的客观性、评价结果的应用等征求意见和建议。

对绩效评价报告的意见和建议（可另附页）

该报告内容详实，数据准确，评价客观
我单位无其他意见或建议。

填写人（签字）：李仕如	
工作单位：广西水电管理中心	职务：副经理
电话：0771-2185801	日期：2020.1.3

On January 3, 2020, Li Shiri from Guangxi Hydropower Management Center had no comment on the performance evaluation report.

全球环境基金（GEF）中国小水电增效扩容改造增值项目
绩效评价报告征求意见表

全球环境基金（GEF）中国小水电增效扩容改造增值项目绩效评价，主要是对项目活动的设计、当前实施和管理情况、项目成果产出及影响等进行中期绩效评价，评价的时间范围从2016年6月全球环境基金理事会批准项目建议书到2019年9月绩效评价之时。根据《国际金融组织贷款项目绩效评价操作指南》给出的评价规则和项目综合绩效评级方法，评价小组谨慎地对该项目的相关性、效率、效果、可持续性以及综合绩效进行评价，提出了评价结论、经验教训和对策建议，并形成了评价报告。按照开展绩效评价工作的规定，现向本项目的执行和实施部门及主要利益相关方沟通，主要就评价报告的客观性、评价结果的应用等征求意见和建议。

对绩效评价报告的意见和建议

一、P28表3.10 “GEF增值改造进展情况”作如下修改：
 （一）重庆市5个GEF项目的“安全生产标准化建设”和“绿色小水电评价”预计完成时间统一修改为：2020年11月。
 （二）小坑电站待完成活动预计完成时间作如下修改：

活动	已完成工程量比例	预计完成时间
1.提升厂房外立面环境及打造历史景观节点	30%	2020.04
2.水处理设施	50%(已完成基础开挖、预埋，设备采购)	2020.02
3.安装流量在线监控设施	50%(已完成设备采购)	2020.02

（三）净坛峰/黄岩电站待完成活动中的“1.生态流量泄放及在线监测”预计完成时间修改为“2020.02”。

二、P41表3.18“省级项目办主任名单”中“纪碧华”和表3.19“省级项目办协调员名单”中“黄清春”的“工作单位”修改为“重庆市农村水利水电中心”。

三、建议删除P54图3.35净坛峰/黄岩电站最小下泄流量闸及生态堰坝。

填写人（签字）：

工作单位：重庆市农村水利水电中心	职务：调研员
电话：023-86110995	日期：2020.01.03

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On January 3, 2020, Huang Qingchun from Chongqing Rural Water Conservancy and Hydropower Center had the comments on the performance evaluation report as follows:

1. Table 3.10 “Progress of GEF Value-added Renovation Project” on Page 28 is modified as follows:

(1) The estimated completion time of the “Safety Production Standardization Construction” and “Green Small Hydropower Evaluation” of the five GEF projects in Chongqing is revised to November, 2020.

(2) The estimated completion time of the activities to be completed at Xiaokeng Hydropower Plant is modified as follows:

Activity	Proportion of completed works	Estimated completion time
1. Improve the plant facade environment and create historical landscape spots	30%	April, 2020
2. Water treatment facilities	50% (foundation excavation, embedment, equipment procurement completed)	February, 2020
3. Install online flow monitoring facilities	50% (equipment procurement completed)	February, 2020

(3) The estimated completion time of “1. Ecological flow discharge and online monitoring” in the activities to be completed of Jingtanfeng/Huangyan Hydropower Plants is revised to “February, 2020”.

2. On Page 41, the “workplace” of “Ji Bihua” in Table 3.18 “List of Provincial Project Management Office Directors” and “Huang Qingchun” in Table 3.19 “List of Provincial Project Management Office Coordinators” is revised to “Chongqing Rural Water Conservancy and Hydropower Center”.

3. It is suggested to delete Figure 3.35 Minimum discharge flow valve and ecological weir of Jingtanfeng/Huangyan Hydropower Plants on Page 54.

**全球环境基金（GEF）中国小水电增效扩容改造增值项目
绩效评价报告征求意见表（云南省）**

全球环境基金（GEF）中国小水电增效扩容改造增值项目绩效评价，主要是对项目活动的设计、当前实施和管理情况、项目成果产出及影响等进行中期绩效评价，评价的时间范围从2016年6月全球环境基金理事会批准项目建议书到2019年9月绩效评价之时。根据《国际金融组织贷款项目绩效评价操作指南》给出的评价规则和项目综合绩效评级方法，评价小组谨慎地对该项目的相关性、效率、效果、可持续性以及综合绩效进行评价，提出了评价结论、经验教训和对策建议，并形成了评价报告。按照开展绩效评价工作的规定，现向本项目的执行和实施部门及主要利益相关方沟通，主要就评价报告的客观性、评价结果的应用等征求意见和建议。

云南省对绩效评价报告的意见和建议（可另附页）

建议如下：一是表3.9“十三五”农村水电增效扩容改造进展情况（P22页）第一马脖子完工验收时间修改为2020.02。第二冒烟洞二级、马脖子、岔河三座电站竣工验收时间修改为2021.06（原因是竣工验收要求机组试生产期已满，水工建筑物经过一个洪水期和冰冻期的考验；加之2020年底是小水电整改完成时限，整改期间竣工验收难以开展，竣工验收2020年底无法完成）。

二是表3.10 GEF增值改造进展情况（P29-30页）：冒烟洞二级、马脖子、岔河三个电站的安全生产标准化建设及绿色小水电评价预计完成时间统一修改为2021.03。（原因为：安全标准化和绿色小水电需经过评审并公示，需要衔接时间，2020年底完成比较困难）。

填写人（签字）：艾荣奇



工作单位：云南省水利厅水电局

职务：副局长

电话：13708808410

日期：2020年1月6日

On January 6, 2020, Ai Rongqi from Hydropower Bureau of Yunnan Water Resources Department, had the suggestions on the performance evaluation report as follows:

First, Table 3.9 Progress of Rural Hydropower Upgrading in the 13th Five-Year Plan (Page 22). (1) the completion and acceptance time of Mabozi Hydropower plant is revised to February, 2020. (2)The acceptance time for the completion of three hydropower plants (Maoyandong Cascade II Hydropower Plant, Mabozi Hydropower plant and Chahe Hydropower Plant) is revised to June, 2021 (the reason is that the completion acceptance requires the trial production period of the unit has expired, and the hydraulic structure has passed the test of a flood period and a freezing period; in addition, the completion of small hydropower renovation is at the end of 2020. It is difficult to carry out the completion acceptance during the renovation period, and the completion acceptance cannot be completed by the end of 2020).

Second, Progress of GEF Value-added Renovation Project in Table 3.10 (Pages 29-30): the estimated completion time of the safety production standardization construction and green small hydropower evaluation of the three hydropower plants of Maoyandong Cascade II Hydropower Plant, Mabozi Hydropower plant, and Chahe Hydropower Plant is revised to March, 2021. (the reason is: safety production standardization construction and green small hydropower evaluation need to be reviewed and publicized, and transition time is required. It is difficult to complete by the end of 2020)

全球环境基金（GEF）中国小水电增效扩容改造增值项目 绩效评价报告征求意见表

<p>全球环境基金（GEF）中国小水电增效扩容改造增值项目绩效评价，主要是对项目活动的设计、当前实施和管理情况、项目成果产出及影响等进行中期绩效评价，评价的时间范围从2016年6月全球环境基金理事会批准项目建议书到2019年9月绩效评价之时。根据《国际金融组织贷款项目绩效评价操作指南》给出的评价规则和项目综合绩效评级方法，评价小组谨慎地对该项目的相关性、效率、效果、可持续性以及综合绩效进行评价，提出了评价结论、经验教训和对策建议，并形成了评价报告。按照开展绩效评价工作的规定，现向本项目的执行和实施部门及主要利益相关方沟通，主要就评价报告的客观性、评价结果的应用等征求意见和建议。</p>	
<p>对绩效评价报告的意见和建议（可另附页）</p> <ol style="list-style-type: none"> 1、该评价报告内容全面，数据详实，得分合理，评价客观。 2、由于陕西省水利厅李永杰副巡视员已退休，指导委员会委员李永杰变更为陕西省水利厅丁纪民副厅长。 	
<p>填写人（签字）：</p>	
<p>工作单位：陕西省水利水电发展中心</p>	<p>职务：</p>
<p>电话：029-61835130</p>	<p>日期：2020年1月7日</p>

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On January 7, 2020, Xia Jianjun from Shaanxi Water Conservancy and Hydropower Development Center, had the comments and suggestions on the performance evaluation report as follows:

1. The evaluation report is comprehensive in content, detailed in data, reasonable in score and rating, and the evaluation is objective.

2. As Li Yongjie, deputy inspector of Shaanxi Provincial Water Resources Department, has retired, Li Yongjie, a member of the steering committee, is changed to Ding Jimin, deputy director of Shaanxi Provincial Water Resources Department.