



International Center on Small Hydro Power

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	International Green SHP Technical Consultant to develop standards, guidelines and manuals for “Upgrading of China SHP Capacity Project” Project number: SAP 140196–02
Main Duty Station and Location:	Remote work with regular travels to China as necessary
Mission/s to:	Domestic travel to be defined based on work plan
Start of Contract (EOD):	tbc
End of Contract (COB):	tbc
Number of Working Days:	12 work months with possibility of extension for another 6 months
Apply By:	ASAP, no later than 15 July, 2019

1. BACKGROUND

UNIDO in association with the Ministry of Water Resources (MWR) is currently implementing the project entitled Upgrading of China Small Hydropower (SHP) Capacity. The Project will focus on environmental upgrading of rural SHP stations in China, in line with the priorities of the Chinese Government, as outlined in the 12th FYP (five-year plan) 2011-2015.

For the first time, the Outline of 12th FYP for National Economic and Social Development has taken the reduction of CO₂ emission intensity per unit of GDP by 17% as a binding target, and further specified the key tasks for GHG emission control among other aspects. Since 2004, the central Chinese Government has listed rural hydro power development in its rural infrastructure construction tasks to further increase investments and loan input to support rural hydropower development.

The Project aims at supporting the SHP capacity expansion programme of the MWR, by reducing the environmental impact of SHP plants to better meet the challenges imposed by climate change. The objective of this project is to reduce GHG emissions and dependence on fossil fuels through the promotion of upgrading, greening and improving the management of existing SHP stations, contributing to the competitiveness of China's industries. Alongside important social and economic benefits, the project will improve local river ecology, hence contributing to adaptation of SHP plants to climate change. It is estimated that additional electricity of about 154,193 MWh per year will be obtained through the project activities, resulting in emission reductions of 2.16 m tCO_{2e}. The project will transfer knowledge and technology in the field of green hydropower within China, leading to positive environmental impacts.

More specifically the project is structured in three technical components, plus a monitoring and evaluation component, as set out below:

Component 1: Policy and institutional framework. This component will strengthen the policy and regulatory framework to effectively promote and support green SHP upgrading by the development of a Ministerial Standard on green SHP, through support for incentive measures as well as assisting in the roll out of the Safe Production SHP standards.

Component 2: Technology Demonstration. This component will demonstrate technical feasibility and commercial viability of 24 green and safe upgraded SHPs at different capacities demonstrating a variety of environmental measures and safe production measures. Technical assistance and grants will be provided to facilitate the projects' development. These will build the confidence of both industry and the finance sector, create best practice examples to pave the way for replication, on the basis of experience gained reduced (perceived) risk and increase capacity and awareness at multiple levels, i.e. industry (both at operational and decision-making level) and finance.

Component 3: Capacity building and increasing knowledge base. This component will strengthen the institutional capacity as well as address the insufficient technical capacity training, awareness and the development of knowledge products. Activities under this component will be implemented in parallel with components 1 and 2 on policy framework and technology demonstration in order to prepare for the scale up / mainstreaming of green and safe SHP within and beyond the project.

Component 4: Monitoring and Evaluation. A two pronged approach will be followed: 1) monitoring and evaluation against the GEF's strategic indicators and 2) monitoring and evaluation project specific technical indicators for outputs per component (components 1-3 as listed above). Ultimately this will provide an indication of the achievement of the goals that the project has set out to be achieved.

Primary target beneficiaries of the project are SHP owners, designers, policy-making and implementing institutions, primarily MWR and MEP, SHP associations, installers, training institutes, energy professionals and service providers and the financial sector.

International consultant at ICSHP

ICSHP will recruit international and national consultants to support the implementation of the project through their expertise in the field of green SHP technology, policy and regulation, as well as capacity building. Contributing to component 1, the consultant will mainly be involved in providing technical recommendations on the Ministerial Standard on evaluation of green SHP stations and on the development of technical guidelines, as well as conducting research on SHP best practices and case studies. The consultants will report to the National Project Manager at ICSHP. Coordination between international and national consultants will be facilitated through ICSHP. For this purpose, the international consultant will be required to regularly report on the progress of his/her work (See section 5. Reporting). The key roles of the international consultant are detailed below:

Post	Green SHP Technical Expert	Expected duration
Objective	Successful provision of recommendations on the Standard for evaluation of green small hydropower stations and Safe Production Standard, as well as support on the development of the Technical Guidelines and the Best Practice Manual.	

<p>Scope of Work</p>	<ul style="list-style-type: none"> • Review and improve the existing Standard for evaluation of green small hydropower stations by considering international standards on green hydropower whilst ensuring applicability for the Chinese context, including: <ul style="list-style-type: none"> - EU Water Framework Directive (Directive 2000/60/EC) and EU Habitats Directive (Council Directive 92/43/EEC) - Low Impact Hydropower Certification Handbook of the Low Impact Hydropower Institute - Hydropower Sustainability Assessment Protocol of the International Hydropower Association <p>From these findings, discuss the benefits of fish by passes with Chinese experts and how they facilitate fish migration in new SHPs or in SHPs to be upgraded/ refurbished and how it could be possible to include them as part of the proposed standard.</p> • Provide specific recommendations on assessment criteria, including aspects, elements and indices of green SHP • Scrutinise each potential index to ensure they are robust, compare favourably with the international standards and are in line with any environmental legislation • Provide specific recommendations on the grading system to ensure its relevance to any future incentive schemes • Support the finalization process of the Green SHP Assessment Standard 	<p>40%</p>
	<ul style="list-style-type: none"> • Support the development of Technical Guidelines on green SHP measures based on international experience, which will be gender sensitive and include details of the impacts of green SHP measures on both women and men. The technical guidelines will include case studies based on international experience and case studies from China as they become available. • Conduct research on main technical measures to mitigate potential negative impacts of SHP, their applicability and how to implement the improvements 	<p>20%</p>

	<ul style="list-style-type: none"> • Support the nationwide rollout of the “Evaluation Criteria for Rural Hydropower Station Safe Production Standardization” by developing a Best Practice Manual and Case Studies on safe production standards based on international experience and case studies from China as they become available • Review the safe production standard and provide recommendations for it to meet accepted international standards and ensure it is gender mainstreamed. 	40%
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2. QUALIFICATION, REQUIRED SKILLS AND EXPERIENCE

- Established technical expertise in small hydropower with over 10 years of experience;
- Experience providing policy advice in relevant sector;
- Advanced university degree in engineering with thorough understanding of green hydropower technology and mitigation of environmental impacts caused by hydropower;
- Good understanding of the policy-making process in China (preferred);
- Very good technical writing skills;

Required Competencies

Core values:

1. Integrity
2. Professionalism
3. Respect for diversity

Core competencies:

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation
6. Organizational development and innovation

Minimum Organizational requirements

General:

- Master degree in hydraulic or electrical engineering, water resource management, energy management or other related discipline;
- Full command of Microsoft Office software package (Word, Excel and Power Point);
- Ability to communicate diligently and efficiently in cross cultural contexts;

Professional:

- At least 10 years of working experience in the hydropower sector, particularly in the field of green small hydropower and environmental impact assessment;
- At least 5 years of experience in writing technical reports;
- Experience in giving advice and recommendations on policies, regulations and technical guidelines.
- Working experience on GEF, World Bank or UN agencies projects in China will be an

advantage.

Specific:

- Excellent knowledge of existing standards and protocols in the field of hydropower and environmental impact assessment;
- Excellent knowledge of environmental and social impacts of small hydropower and appropriate technical mitigation measures;
- Knowledge of the national SHP Capacity Expansion project under the 13th Five-Year-Plan of the Chinese national government.

Assets:

- Knowledge of Chinese policies and regulations on small hydropower, environmental impact assessment, and water resource management;
- Good understanding of the small hydropower sector in China, including its key institutions and industries;
- Experience in green assessment of SHP projects.

3. LANGUAGES

The candidate should have an excellent command of written and spoken English.

4. DELIVERABLES

The consultant shall meet the following project reporting requirements:

- 1) Report on international initiatives on green hydropower, including recommendations on assessment criteria (aspects, elements and indices of green SHP) and the grading system;
- 2) Report on main technical measures to mitigate potential negative impacts of SHP, including international case studies;
- 3) Report on international best practices on safe production, including international case studies.

5. REPORTING

In addition to the “Deliverables”, the consultant shall meet the following milestones and reporting requirements towards his own work:

- 1) Monthly progress report: summarizing findings, issues, challenges and recommendations related to the execution of the tasks.
- 2) Duty travel: the consultant will have to submit mission reports and related deliverables no later than three weeks after completion of the mission.
- 3) At the conclusion of the assignment the consultant shall submit a final report comprising of a summary of activities carried out with all deliverables prepared within the scope of his/her assignment attached to the report.

The reports and all related documents must be in English and presented in electronic format.

6. APPLICATION PROCEDURE

Submit the cover letter and a detailed CV to secretariat@inshp.org copying recruitment@inshp.org with project number as the subject of the email. Shortlisted candidates will be notified and asked to send the further documents as required. For any queries about this job please contact sagar.dhakal@icshp.org or ynzhang@icshp.org.