

Terms of reference (ToRs) for an individual consultant to support GIZ in executing survey of solar water pumps

Indo-German Energy Programme
Promotion of Solar Water Pumps

**Project number/
cost centre:**

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0. List of abbreviations

AVB	General Terms and Conditions of Contract (AVB) for supplying services and work 2018
ToRs	Terms of reference

1. Context

The Promotion of Solar Water Pumps component of the Indo-German Energy Programme (PSWP-IGEN) is a bilateral technical co-operation measure between the Federal Ministry for Economic Co-operation and Development (BMZ), Germany and the Ministry of New and Renewable Energy (MNRE), Government of India. PSWP was commissioned by BMZ based on the lessons learned from the IGEN-Access module (2015 – 2019).

The project aims at promoting sustainable use of SWP in view of the Water-Energy-Food nexus. The IGEN-PSWP module is being implemented pan-India with a focus to the East and North-East of India. The module is implemented over a period of four years (October 2018 – September 2022). BMZ has commissioned the Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) with the implementation of the project. GIZ is a federal enterprise based in Eschborn and Bonn, Germany.

The PSWP module aims to improve, expand and speed-up the roll-out of sustainable solar water pumps. The activities under the PSWP module will be implemented under the following four components:

- “Enabling Policy environment”, to enable policymakers to design government promotion programs for the productive use of solar pumps in a way that is effective and environmentally sound.
- “Business, Operator and Service Modules”, to enable market stakeholders such as project developers, facility operators and non-governmental organizations (NGOs) to successfully replicate tested business, operator and service models for the productive use of solar pumps in selected federal states.
- “Access to Finance”, to enable financial service providers to offer customized financial solutions for financing solar pumps for productive use.
- “Information, Dissemination, and Upscaling”, to provide agricultural extension service providers in selected federal states the necessary knowledge to carry out technical, environmental and economic assessments of solar pumps for productive usage.

Central and state governments in India have been providing heavy upfront subsidies for installation of solar water pumps (SWPs) under various schemes. The core objective is to provide farmers with access to assured irrigation, given that the reach of the electricity grid in certain parts of rural India continues to remain limited while diesel pumps are an expensive and polluting source. In recent times, the case for SWPs has been further strengthened due to the mounting pressure of agricultural electricity subsidies, the growing awareness about renewable energy and the falling photovoltaic prices.

As a result, SWPs have been slowly but steadily gaining ground, with installations increasing from 29,669 in March 2015 to 2,37,120 in March 2019. This is set to expand further under the central government’s ambitious Pradhan Mantri Kisan Urja Suraksha Evam Utthan

Mahabhiyan (PM KUSUM) scheme which targets an addition of 2 million off-grid and 1.5 million on-grid pumps, along with installation of 10 GW of small solar power plants in rural areas by 2022.

While the installed base of SWPs has been increasing, lack of data regarding operational condition and performance has been a key concern. Previous MNRE schemes had suggested use of remote monitoring systems, which has now been mandated under PM KUSUM. Some states like Chhattisgarh, Rajasthan and Andhra Pradesh have already made provisions for this. However, there is limited clarity on the actual number of pumps that are being remotely or even locally monitored, and how the tracked data is being utilized. In absence of this, it is difficult to ascertain the actual impact of these heavily subsidized interventions on farming practices and farmer wellbeing.

Another key concern with respect to wide disparity in SWP deployment across states. So far, seven states – Chhattisgarh, Rajasthan, Andhra Pradesh, Uttar Pradesh, Madhya Pradesh, Gujarat and Odisha – collectively account for 86 per cent of the country's total installations. This is primarily because states have had the freedom to design their SWP schemes, with variations across crucial parameters and implementation processes, such as choice of implementing agency; application process and beneficiary selection criteria; site selection criteria; technical specifications for SWPs; vendor management; subsidy levels and disbursement process; awareness and technical trainings strategy; after sales service requirement; monitoring practices etc. Each of these have had varied implications on programme efficiency and overall impact of the scheme.

GIZ has been tasked under the IGEN-PSWP module to create an enabling policy environment that helps policy-makers design promotion programs for the productive use of solar pumps in an effective and environmentally sound manner. Along with expanding their deployment, it has become crucial for policy makers to ensure optimal utilization of SWPs. It has also become crucial to study state schemes for SWP promotion to establish best practices and crucial lessons.

To this end, GIZ seeks to engage with an individual consultant with the following objectives:

- To technically and strategically support GIZ in executing survey of SWPs installed under MNRE's previous schemes to assess and analyse operational condition, identify gaps and suggest policy solutions
- To convene SWP users to seek inputs and feedback on issues pertaining to operations and maintenance as well as the state SWPs scheme

2. Tasks to be performed by the contractor

GIZ is implementing a project that entails survey of 935 SWPs installed during 2015-16 in Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand) to monitor the status of old pumps, understand utilization, identify factors hindering optimal performance and adequacy in meeting the farmer's irrigation requirement, operation and maintenance practices and

concerns as well as recommend policy solutions to the identified gaps. The survey would also help get user perspective and experience with respect to the respective state SWP schemes. The survey sample would include 486 SWPs/farmers in Rajasthan, 185 in Uttar Pradesh, 154 in Tamil Nadu and 110 in Odisha (or in Jharkhand).

The contractor engaged through this ToR will be responsible for providing the following services:

- Assistance in executing the survey project in Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand)
- Organizing focused group discussions (FGDs) with alternate set of SWP users with similar characteristics to independently validate the outcome of field surveys

A. Scope of work

The detailed work packages under this ToRs and the associated activities, tasks and subtasks are described below:

Work Package 1: Technical and strategic assistance to GIZ for survey of SWP beneficiaries of 2015-16 in four states – Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand)

Activity 1: Support pre-field planning and preparatory activities for executing field surveys

1.1 Identify primary and secondary sample lists for survey of SWP beneficiaries

- Co-ordinate with state nodal agencies and other relevant government agencies, on behalf of GIZ, to secure complete and detailed list of SWP beneficiaries of 2015-2016 in each of the four states – Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand, in case data from Odisha is not available).
- Analyse the complete list of beneficiaries using appropriate statistical tools to identify a primary and a secondary sample list for executing field surveys, such that the sample set is appropriately stratified (in terms of pump types and make etc., depending on the data details available); the geographical spread of samples is limited to minimum number of districts and villages in each state (maximum 3 districts); and that the survey can be executed within eight to ten weeks.
 - The primary sample list should include 486 beneficiaries in Rajasthan, 185 in Uttar Pradesh, 154 in Tamil Nadu and 110 in Odisha (or Jharkhand).
 - The secondary sample list should include at least 121 alternate beneficiaries in Rajasthan, 46 in Uttar Pradesh, 38 in Tamil Nadu and 28 in Odisha – as a backup list to be utilized in case samples listed in the primary list are not available for survey. This list should focus on the same districts as the primary list.

1.2 Support designing of survey strategy, questionnaire and enumerator training: Prior to execution phase of the survey, the bidder is expected to study the following documents provided by the core team of experts and researchers executing the survey project, and provide his feedback and perspective to GIZ:

- Initial literature review
- Survey plan and strategy
- Designed questionnaires for farmers
- Study materials for enumerator training programmes

Activity 2: Support enumerators in executing field surveys

2.1 Shadow enumerators for during 15 per cent of the field survey

- The bidder must **accompany enumerators in one district of each of the four states during 15 per cent of the survey** i.e. 140 farmers/ SWPs, including 73 in Rajasthan, 28 in Uttar Pradesh, 23 in Tamil Nadu and 17 in Odisha (or Jharkhand). The objective of the activity is ensuring accuracy of collected data and adoption of ethical practices of data collection. The bidder is expected to submit an independent assessment report on state of SWP operations and maintenance based on this.
- Attend FGDs to be organized by the research contractor in two states (Chhattisgarh and Jharkhand/Odisha) where survey is not being undertaken and submit an independent assessment report.
- This activity (2.1) will require the bidder to design a detailed travel and stay strategy in the four states, in coordination with the core team of researcher executing the project.

2.2 Monitor data being collected by enumerators for sanity check: Regularly monitor the data being fed by enumerators through the online software to run a sanity check, to spot unwarranted errors and information gaps at early stages of data collection. Suggest ways to GIZ to mitigate these errors, if required.

Activity 3: Support post-survey data analysis and report development: Support data analysis and recommendations through feedback to GIZ, particularly focusing on identifying status and trends and the underlying reasons drawing from independent qualitative inputs gathered through direct farmer interactions.

Work Package 2: Convene SWP users in Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand) to independently validate survey results through FGDs

- Identify appropriate villages for organizing FGDs with SWP users in Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand), where detailed surveys are being conducted and which were not covered by the bidder during shadowing of enumerators, to independently validate the outcome of field surveys.

- Organize at least one meeting in each state at the village-level with participation of 15 to 20 SWP users, lasting at least 90 minutes. This would include all pertinent activities for executing the meeting, including setting of agenda, liaising with local farmers, arranging logistics etc.
- Submit assessment report for each of the meetings based on the proceedings and discussions.

B. Deliverables

Given the above listed tasks and activities, the bidder is required to deliver the following output:

- Primary and secondary beneficiary sample list with 935 farmers/SWP and 121 alternate farmers/SWP respectively
- Feedback to GIZ on key documents including literature review, survey strategy, questionnaire, enumerator training material and data analysis
- Assessment report on shadowing enumerators during 15 per cent of the survey in each of the states (for 140 farmers/ SWPs) and during the FGDs in 2 states
- At least one FGD in each of the four states (Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha/Jharkhand) with at least 15-20 SWP users, and assessment report of each meeting

All deliverables should be in line with the details mentioned in the work packages. These will be considered only after approval from GIZ and payments will be made accordingly.

Certain milestones, as laid out in the table below, are to be achieved by certain dates during the contract term, and at particular locations:

Milestone	Deadline
Primary and secondary beneficiary sample list	November 2020
Assessment report on shadowing enumerators during 15 per cent of the survey and 2 FGDs	May 2020
Organizing at least one FGD in each of the four states	May 2021

Period of assignment: From November 2020 until May 2021.

3. Concept

In the bid, the bidder is required to show how the objectives defined in Chapter 2 are to be achieved, if applicable under consideration of further specific method-related requirements

(technical-methodological concept). In addition, the bidder must describe the project management system for service provision.

Technical-methodological concept

Strategy: The bidder is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 1). Following this, the bidder presents and justifies the strategy with which it intends to provide the services for which it is responsible (see Chapter 2).

As a part of Strategy description, the bidder is also expected to provide concise answers to the following two questions:

- What factors are crucial for successfully executing surveys in rural India?
- What are the foreseen barriers in executing the assignment and how would these be overcome? Especially highlight the COVID related concerns and mitigation strategies?

The bidder is required to present the actors relevant for the services for which it is responsible and describe the **cooperation** with them.

The bidder is required to describe the key **processes** for the services for which it is responsible and create a schedule that describes how the services according to Chapter 2 are to be provided. In particular, the bidder is required to describe the necessary work steps and, if applicable, take account of the milestones and contributions of other actors in accordance with Chapter 2.

Project management of the contractor: The bidder is required to explain its approach for coordination with the GIZ project.

4. Personnel concept

The individual bidder must be suited for undertaking all the tasks listed above, particularly field-level work, data collection and interpretation. In this context, the following qualifications and skill sets must be demonstrated by the bidder through evidence (documents / references):

2.1.1	Qualifications	Bachelor's and master's degrees in Statistics/ Survey Methodology/ Economics / Sociology or any related field
2.1.2	Language	Good business language skills in English and Hindi (functional knowledge Tamil and/or Odia would be advantageous)
2.1.3	General professional experience	Proven experience of at least 10 years in conducting primary surveys across large sample surveys

2.1.4	Specific professional experience	Proven experience of at least 5 years in conducting primary surveys in rural areas/markets, with a focus on digital surveys
2.1.5	Regional experience	Proven experience of executing at least 2 complex multi-state projects, which required extensive travel and co-ordination
2.1.6	Other	<ul style="list-style-type: none"> • Knowledge of rural water-energy-food nexus is desirable (contribution to at least 1 research project in the area) • Strong field-based research and analytical skills • Excellent inter-personal and networking skills

Note: The reference number in the first column is in accordance with the Grid for Technical Assessment

The bidder must note that the assignment requires necessary and extensive travel to remote locations for almost a continuous duration of 8 to 12 weeks.

The bidder must not be on full time payroll of any firm. Subcontracting of survey works is not allowed under the assignment.

5. Costing requirements

Assignment of personnel

The assessment of the required human days for the listed tasks is as follows:

Work package	No of human days
Technical and strategic assistance to GIZ for survey of SWP beneficiaries of 2015-16 in four states – Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand)	109
Convene SWP users in Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand) to independently validate survey results	16

Note: Estimated human days requirement includes travel days

Travel

The travel cost requirement is based on the places of performance stipulated in the project concept - shadowing enumerators during survey in Rajasthan, Uttar Pradesh, Tamil Nadu, Odisha/Jharkhand and FGD in Chhattisgarh and Odisha/Jharkhand, and independently organizing FGDs in the four states Rajasthan, Uttar Pradesh, Tamil Nadu, Odisha/Jharkhand. The bidder is thus required to travel to a total of six states, in coordination with the travel plan of project executing committee. The details are as such:

- At least 1 district in Rajasthan for shadowing survey of 73 farmers and for conducting 1 FGD
- At least 1 district in Uttar Pradesh for shadowing survey of 28 farmers and for conducting 1 FGD
- At least 1 district in Tamil Nadu for shadowing survey of 23 farmers and for conducting 1 FGD
- At least 1 district in Odisha/Jharkhand for shadowing survey of 17 farmers and for conducting 1 FGD
- At least 1 district in Chhattisgarh for shadowing 1 FGD
- At least 1 district in Jharkhand/Odisha for shadowing 1 FGD

The travel budget includes expenses such as daily allowance, accommodation expenses, flight costs, local travel cost and other expenses.

Events

The cost of organizing events is also as per the project concept (i.e. at least four village-level FGDs as a part of Work Package 2).

6. Requirements on the format of the bid

The structure of the bid must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Section 3) is to be organised in accordance with the positively weighted criteria in the Technical Assessment Grid (not with zero). It must be legible and clearly formulated in English language.

The bidder must submit a technical proposal and a financial proposal separately as per the information detailed in Bidding Conditions.

The contractor also must submit a detailed CV demonstrating qualifications and skills mentioned in the Personnel Concept (Section 4) and provide adequate proof of the same wherever necessary. The CV should be aligned with mentioned requirements.

The complete bid should not exceed 15 pages (excluding a CV and other documents). If the maximum page length exceeds this, the content appearing after the cut-off point will not be included in the assessment.

The shortlisted candidates may be invited for a presentation in GIZ Delhi Office within 40 days of the submission of the proposal.