Terms of reference (ToRs) to ascertain learnings from state solar water pump schemes, focusing installed asset condition and implementation designs

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Indo-German Energy Programme

Promotion of Solar Water Pumps

Project number / cost centre: 16.2081.4-001.00

0. List of abbreviations

ToRs	Terms of reference
PSWP	Promotion of Solar Water Pumps
IGEN	Indo-German Energy Programme
BMZ	Federal Ministry for Economic Co-operation and Development, Germany
MNRE	Ministry of New and Renewable Energy
GIZ	Gesellschaft für Internationale Zusammenarbeit GmbH
NGO	Non-governmental organization
SWP	Solar water pump
PM KUSUM	Pradhan Mantri Kisan Urja Suraksha Evam Utthan Mahabhiyan
JNNSM	Jawaharlal Nehru National Solar Mission
NABARD	National Bank for Agriculture and Rural Development
O&M	Operational and maintenance

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 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.

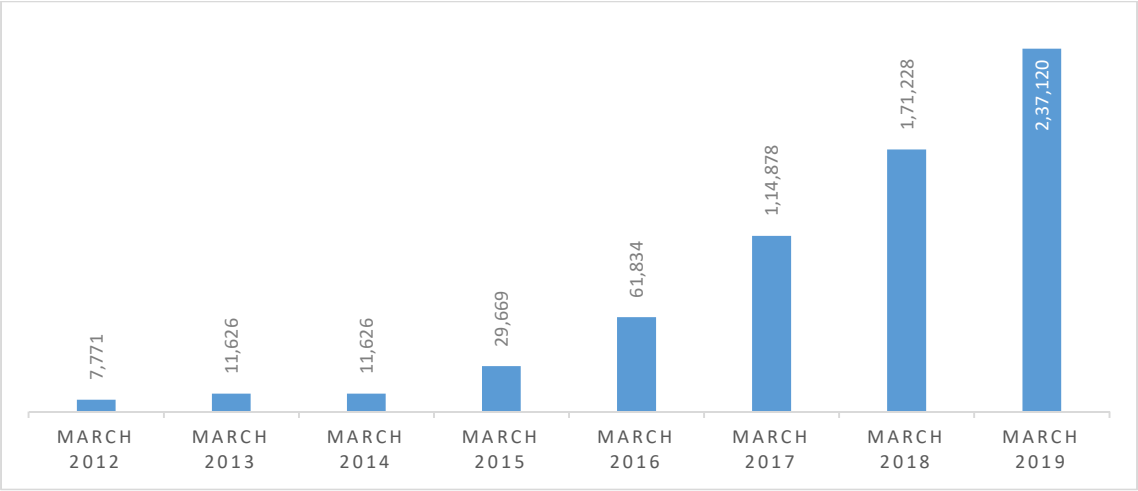
- "Information, Dissemination, and Upscaling", to provide agricultural extension service providers in selected federal states the necessary knowledge to carry out technical, environmental and economic assessments of solar pumps for productive usage.

Solar water pumps (SWPs) currently hold a small but expanding presence in India. According to MNRE, 237,120 SWPs were installed in the country till March 2019 under various central and state government schemes. While this points to their relatively marginal role in irrigation, given an estimated installed base of 20 million electric and 10 million diesel pumps[1], deployment of SWP has picked up commendable pace in recent times, with their number increasing eight-times in the past five years.

This growth is set to continue with the central government now rolling out the 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.

[1] Guidelines for Implementation of Pradhan Mantri Kisan Urja Suraksha evem Utthan Mahabhiyan (PM KUSUM) Scheme, MNRE, July 2019

Graph 1: Growth of solar water pumps in India



Source: MNRE (Data shared in January 2020)

SWP installations have largely been driven by heavy subsidies provided by central and state governments to reduce the upfront capital cost burden on farmers. The primarily objective has been to provide farmers with access to assured irrigation. SWPs are additionally being promoted due to the mounting pressure of agricultural subsidies and the growing awareness about renewable energy. It has only helped that SWP prices have seen a sharp decline. With KUSUM, the government is now trying to leverage SWPs to reduce financial stress on farmers through sale of surplus power back to the grid.

Subsidy-driven programmes for SWPs have existed since 1992. MNRE had included SWPs in the Jawaharlal Nehru National Solar Mission (JNNSM) Phase I with pumps of up to 5 kW capacity, aggregating 200 MW targeted to be installed between 2010 and 2014. The ministry started paying serious attention to it with introduction of the Solar Pumping Programme for Irrigation and Drinking Water in 2014 which targeted installation of 1 million SWPs till 2019-20 through state nodal agencies and an additional 10,000 irrigation pumps through National Bank for Agriculture and Rural Development (NABARD).

So far, the progress under each of the MNRE schemes has been well below the set goals. Moreover, the installations vary considerably across states largely depending on the zeal with which state governments have pushed it on ground and designed respective state schemes.

Seven states collectively account for 86 per cent of the country's total installations. Chhattisgarh leads with nearly 26 per cent share, followed by Rajasthan and Andhra Pradesh with 20 per cent and 14 per cent share respectively. Uttar Pradesh and Madhya Pradesh account for another 8 per cent share each, while Gujarat and Odisha account for 5 per cent share each.

Table 1: SWPs in leading states

State	SWPs (as of March 2019)
Chhattisgarh	61,970
Rajasthan	47,519
Andhra Pradesh	34,045
Uttar Pradesh	19,938
Madhya Pradesh	17,965

Gujarat	11,906
Orissa	11,128
Karnataka	6,602
Jharkhand	4,408
Tamil Nadu	4,306
Maharashtra	4,116
Punjab	2,656
Bihar	2,107

Note: Table includes all states with over 2,000 SWPs; excluding NABARD installations
Source: MNRE (data shared in January 2020)

States have had the freedom to design their SWP schemes. Most leading states have complimented the central financial assistance of 30 per cent of the benchmark capital cost available from MNRE with state financial assistance of 40 to 60 per cent. State schemes have also displayed variations in programme design across multiple parameters – choice of implementing agency and the degree of inter-department co-ordination; application process and beneficiary selection criteria; site selection criteria; technical specifications for SWPs; vendor management; subsidy 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.

States have also been given the responsibility of monitoring and evaluating performance of SWPs installed in the field. Given that these pumps are being set up with massive subsidy support, it is crucial for the government to monitor the status of these pumps post installation in order to ensure optimal performance and adequacy in meeting the farmer's irrigation requirement, as well as identify any existing gaps.

A few pilot projects have been executed over the years by private agencies to remotely monitor pumps. Previous MNRE schemes had only suggested that states consider remote monitoring of SWPs, which has now been mandated under KUSUM. Leading states like Chhattisgarh, Rajasthan and Andhra Pradesh have already made provisions for web-based monitoring in respective scheme designs and tenders. 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 data on operational performance, it is difficult to establish the actual impact of these interventions on farming practices and farmer wellbeing.

A few studies have attempted to so through farmer surveys. For instance, Shakti Sustainable Energy Foundation had commissioned a survey of about 500 farmers in Uttar Pradesh, Bihar, Rajasthan and Tamil Nadu that focused on hours of usage and pointed to limited benefits due to policy level challenges. Another study by Shri Shakti Alternative Energy Limited surveyed 200 sites in Andhra Pradesh and Chhattisgarh concluding the financial impact of SWPs to be substantial, with 70 per cent of surveyed farmers reporting over 25 per cent extra income. An independent research paper based on survey of 430 farmers in Rajasthan pointed to increase in cropping intensity, gross cropped area under fruits and vegetables, and annual profits of SWP adopters. Each of these surveys point to a largely positive impact; but also to the need for addressing a number of policy and implementation gaps.

GIZ has been tasked under the 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. It has become crucial to ensure optimal utilization of installed SWPs given that substantial government funding is being dedicated towards their deployment. There is thus a need for a detailed study on operational condition of old SWPs, to then identify factors hindering optimal utilization. Further, given the scaled-up SWP targets and the wide variations in state-level schemes, it has become equally essential to understand and review ongoing state-level schemes to identify learnings to strengthen future interventions.

Given this background, the objective of the ToRs is as follows:

- To ascertain and analyse the operational condition of SWPs installed under MNRE's previous schemes to identify gaps and policy solutions for optimizing utilization

- To review and evaluate efficacy of scheme designs and implementation process adopted by states for SWP promotion to identify crucial learnings and best practices

2. Tasks to be performed by the contractor

GIZ is seeking services of a specialized firm (hereinafter referred as "the bidder") to identify factors crucial for efficient operations of installed SWPs and for ensuring efficacy of SWP schemes.

The bidder is responsible for providing the following services:

- Survey and audit of a sample of 935 SWPs installed during 2015-2016 through central and state sponsored schemes in four states – 486 in Rajasthan, 185 in Uttar Pradesh, 154 in Tamil Nadu and 110 in Odisha (or Jharkhand), to determine operational condition; associated operational and maintenance (O&M) practices; and key concerns and gaps, to provide policy solutions for ensuring optimal utilization of installed assets.
- Map and review SWP scheme parameters and implementation processes in six states, namely Chhattisgarh, Rajasthan, Uttar Pradesh, Tamil Nadu, Odisha and Jharkhand, to determine best practices and crucial lessons, in context of objectives and targets set under KUSUM.
- Organise a dissemination meeting in New Delhi and state-level consultation meetings in focus states along with GIZ and MNRE.

Milestones, as laid out in the table below, are to be achieved within mentioned timelines during the contract term, and at particular locations:

Milestone	Deadline	Place
Survey of SWP and farmers in four states to determine asset condition and O&M challenges	7 months from the date of contract award	Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand)
Review of SWP scheme parameters and implementation processes in six states, including state-level consultation meetings, to identify best practices	7 months from the date of contract award	Chhattisgarh, Rajasthan, Uttar Pradesh, Tamil Nadu, Odisha and Jharkhand
Dissemination meeting	8 months from the date of contract award	New Delhi

Period of assignment: The project will be for a duration of ten months from the date of contract signing. All work packages must be completed and delivered within the stipulated time. Please refer to Section 5 for details on human days engagement.

3. Concept

SWP installations in India have grown exponentially in the past five years, but states have had vastly varying degrees of success. Strong political will as reflected in high subsidies and efficient scheme designs have been crucial in pushing deployments. Meanwhile, there is very little clarity on the actual impact of these heavily subsidized interventions due to lack of data on utilization of installed SWP. As India now targets to increase SWP deployments at an unprecedented scale under KUSUM, it has become vital for policy makers to understand the operational condition and performance of old SWPs to then identify interventions required to ensure optimal asset utilization over longer-term. It is further crucial to identify scheme elements and practices that have led to effective implementation and sustainable impact of SWPs.

GIZ thus requires technical support of the bidder to survey a sample of farmers and audit SWPs installed during 2015-2016 in four states – Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand), to understand asset condition, utilization, farmer experience, O&M practices, and concerns. The four states collectively account for nearly half of the pumps installed during the period.

Technical support is further required for identifying best practices across crucial scheme parameters and implementation processes through review and analysis of state specific schemes for SWP promotion and detailed stakeholder's consultations across six states – Chhattisgarh, Rajasthan, Uttar Pradesh, Tamil Nadu, Odisha and Jharkhand. These states have all made consistent efforts over the past four to five years to promote SWP and represent a mix of implementation and monitoring practices.

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).

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).

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 present and explain its approach to **steering** the measures with the project partners and its contribution to the results-based monitoring system.

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.

The bidder is required to describe its contribution to knowledge management for the partner and GIZ and promote scaling-up effects (**learning and innovation**).

Should the bidder's tender be accepted, the bidder shall:

- comply with GIZ and MNRE policies and standard of ethics and abide by all instructions and conditions which may be generally or specifically mentioned in this ToRs.
- share fortnightly progress reports providing update on the ongoing and planned works.
- not assign its work / responsibility to any third party, except by GIZ's special permission. If permitted, this will in no way relieve the bidder of its obligations and responsibilities.
- at all times work in coordination with GIZ and its personnel.

The detailed work packages under the ToRs are detailed as follows:

Work Package 1: Survey farmers and audit SWPs installed during 2015-16 in Rajasthan, Uttar Pradesh, Tamil Nadu and Odisha (or Jharkhand) to analyse performance, O&M practices and challenges as well as to understand efficacy of state SWP schemes

- **Activity 1: Design survey questionnaire for farmers –** The bidder will design a survey questionnaire for farmers such that it covers all relevant queries pertinent for assessment of the operational condition and adequacy (in meeting the farmer's pumping requirement over the years) of SWPs installed in 2015-16 as well as for determining efficacy of state SWP scheme and implementation processes. The questionnaire will thus cover a host of subjects, including but not limited to operational condition of SWP, its utilization levels and adequacy in meeting irrigation requirements, O&M practices followed by farmers, after sales experience, security and other concerns. It must be designed to be executed on an online platform in a multiple-choice format, taking appropriate measures to ensure high quality survey.

  This activity will thus entail the following tasks:

  - Identify key parameters and variables that need to be probed given the two objectives of the study (as mentioned in Chapter 1), through analysis and expert input.

  - Design a questionnaire that covers all identified parameters and concerns, provides multiple-choice answers to each question and is simple enough for enumerators and farmers to understand.

  - Access an appropriate software and server for online execution of the survey and upload the final questionnaire.

- **Activity 2: Design and execute farmers' survey and audit of old SWPs in four states –** The bidder will be required to plan and execute field surveys covering SWP installed in 2015-16 in the four selected states. This would cover 935 farmers, including 486 in the Bikaner district of Rajasthan, 185 in two to three districts of Uttar Pradesh, 154 in two to three districts Tamil Nadu and 110 in two to three districts of Odisha (or Jharkhand, in case data on Odisha is not available). The list of farmers to be surveyed will be identified and provided to the bidder by GIZ. In case of unavailability of the identified farmer for survey, the bidder in consultation with GIZ can include a suitable alternative (pump of same size and age in the same district) after describing the reason for his exclusion. For this purpose, GIZ will identify a primary and a secondary sample list. Any deviation

from the primary list must be accepted and agreed by GIZ in writing. Further, the bidder is expected to adopt good practices and standards for data collection, storage and protection.

The tasks under this activity will be:

- Design the survey strategy, such that it is executed online, is completed within the indicated timeframe, ensures quality input, and meets high standards for data collection and protection.

- Engage adequate number of qualified enumerators for conducting the field survey.

- Design and execute a training programme (minimum two-day) for enumerators prior to starting the field survey, along with closely monitored test runs with enumerators covering at least 1 per cent of the households to be surveyed.

- Execute and manage field surveys across all locations. This should include geotagging of installed asset along with a photograph.

The bidder will be required to design the survey strategy and questionnaire in consultation with GIZ. The strategy should necessarily conform with GIZ's data management and confidentiality requirements.

- **Activity 3: Analyse data to draw conclusions and recommendations** – The bidder will use appropriate statistical tools to clean and analyse the collected data and to draw conclusions regarding operational performance of surveyed SWPs and the efficiency of state schemes and implementation processes. The analysis should determine reasons behind the status and trends revealed by the survey. This should further be utilized to draw appropriate recommendations for the MNRE and state policy makers for designing future SWP schemes and interventions.

  The bidder will be required to share with GIZ the data collected during the survey in a excel format (both raw and cleaned).

- **Activity 4**: **Organize national-level meeting for dissemination of results and recommendations –** The bidder will organise national-level dissemination meeting, in collaboration with MNRE and GIZ, to share the results and recommendations from the study. The half-day meeting will be held in New Delhi for about 50 delegates including relevant state-level policy makers and implementing authorities (from renewable energy, agriculture, irrigation departments), SWP vendors, think tanks etc.

Work Package 2: Map, review and evaluate state-level schemes and implementation processes for SWP promotion in six states – Chhattisgarh, Rajasthan, Uttar Pradesh, Tamil Nadu, Odisha and Jharkhand, to identify best practices across key parameters

- **Activity 1: Research on state schemes and implementation parameters for preliminary mapping** – The bidder will be required to undertake desk research to scan all SWP scheme related documents in Chhattisgarh, Rajasthan, Uttar Pradesh, Tamil Nadu, Odisha and Jharkhand. The research must include all SWP schemes implemented in the respective states since 2015, in order to track changes introduced over time and the rationale and effectiveness for these changes. The documents may include scheme guidelines as updated from time to time, tender documents, and

state government notifications, among others. The bidder will then be required to review each document to map the required parameters for each state.

The tasks under the activity thus include:

- Shortlist scheme parameters and implementation processes (at least eight) having an impact on efficiency of SWP schemes, through detailed analysis and expert inputs.
- Conduct research (sourced from relevant websites or directly through relevant government offices) to secure SWP scheme related documents (since 2015) from the six focus states.
- Review accessed documents to identify and map required details regarding scheme parameters and implementation processes, including changes introduced over time.

The bidder will be required to present the scheme maps clearly for each state through flow diagrams. A preliminary matrix can be shared as a part of the proposal.

- **Activity 2: Compile detailed information on parameters along with stakeholder's feedback** – Bidder will be required to first describe in detail each scheme parameter/process in each state, and then to assess its implication and effectiveness based on programme success (against the desired goals) and inputs received from relevant stakeholders. This will entail the following tasks:
  - Describe all parameters/procedures in detail, including changes introduced over time and the stated objective/rationale.
  - Identify relevant stakeholders in each state for consultations.
  - Prepare detailed questionnaire for each stakeholder group to assess effectiveness of listed parameters/processes against the desired goal and their on-ground impact.
  - Organise state-level consultation meetings and direct meetings to collect insights on the various parameters. This must include:
    - At least one round-table meeting with at least 10 relevant stakeholders in each of the six states. These meetings, lasting at least for half a day, should include a mix for policy makers, implementing agencies, local SWP vendors/distributors, sector experts etc.
    - At least one focused group discussion (FGD) with SWP users/beneficiary farmers in each of the two states where detailed surveys are not being conducted (i.e. Chhattisgarh and Jharkhand/Odisha). These FGDs should be organized in villages with high density of SWP beneficiaries and include at least 15 farmers, lasting for at least 90 minutes.

The bidder will be required to design the stakeholder consultation strategy and questionnaire in consultation with GIZ.

- **Activity 3: Analyse compiled information and insights to identify best practices across focus parameters** – The bidder will analyse and assess data and insights collected on scheme parameters/processes across states to identify best practices and draw lessons, along with a clear

rationale for further emulation. This will include recommendations for MNRE and state governments/ nodal agencies on strengthening future schemes for SWP promotion and deployment.

The bidder will finalize the structure of the report and agenda of the meeting in consultation with GIZ.

Structure of the proposal

The bidders are required to maintain brevity in response to all queries mentioned in the ToRs. All questions under the different sections of the ToRs need to be answered. Please elaborate on the roles and responsibilities of the different members of the implementing team as part of your proposal.

Bidders must review this ToRs carefully before submitting their respective tenders. In case of doubts, explanation or clarification may be sought from GIZ, which will be provided as written response and published on GIZ website.

The proposal must include answers to the following questions:

1. What are the key queries to be included in the farmers' survey, given the two indicated objectives of the study? Please provide the tentative proposed structure of the questionnaire.

2. What will be your strategy for conducting the field survey of indicated number of farmers within the set timelines? Please indicate details such as survey team composition, measures for quality check and data security, strategy for training enumerators, software for conducting survey etc.?

3. What, according to you, are the crucial scheme design and implementation process parameters that impact implementation efficiency of SWP schemes? What will be your strategy for accessing new and old documents related to state-specific schemes for the past five years? What will be the approach for evaluating effectiveness of each parameter/process?

4. What are the anticipated risks in each of the two work packages, and what would be the mitigation strategies followed?

Deliverables

The deliverables will be considered only after approval from GIZ and payments will be made accordingly.

<u>Work Package 1</u>

- Complete cleaned-up data set collected from the field surveys

- Detailed report based on survey results, including data analysis, reasons/explanation of identified trends and recommendations for policy makers

- Half-day dissemination roundtable meeting with 50 stakeholders in New Delhi

<u>Work Package 2</u>

- Scoping study of SWP promotion schemes and implementation practices in selected states

- State-level consultation meetings in the six focus states with participation of at least 10 stakeholders (at least one in each state), as well as FGDs with SWP users in two states (where surveys are not being conducted) with at least 15 farmers (at least one in each state)

- Detailed report including state-wise policy profiles covering all parameter along with efficiency assessment; and identification of best practices across parameters

- At least five policy briefs (not more over two pages) to highlight crucial best practices

Note: The bidder is required to facilitate setting up of a core advisory group of technical experts (including 3 to 4 experts) to provide inputs and comments on crucial works including survey questionnaire and methodology, data analysis, and recommendations. The advisory group will be independent of the bidding firm. GIZ will be responsible for finalizing the composition of the advisory group, based on the names suggested names by the bidder. The bidder will co-ordinate with the advisory team and organize a roundtable meeting once every quarter during the project duration at the GIZ's New Delhi office. The travel & accommodation costs, honorarium and other associated costs of the advisory group engagement will be borne by GIZ. The advisory group will remain active throughout the assignment duration.

Project management of the contractor

The bidder is required to explain its approach for coordination and project management with the GIZ project.

4. Personnel concept

Eligibility criteria for bidding firm

The bidder must demonstrate through evidence the following:

1. A minimum average turnover of €170,000 in the past three financial years, and at least 10 full-time employees at the time of bid submission.

2. Demonstrated experience in managing high value contracts (of larger than €20,000 value) received from comparable organizations.

3. Minimum ten years of experience in renewable energy policy research, consulting or advisory services in India.

4. Minimum five years of experience in executing primary surveys across large sample sizes.

5. At least four reference projects in aligned areas of work, including two in distributed renewable energy research and/or advisory and two in primary survey-based research and statistical analysis in rural India.

6. Prior experience of working with state governments and agencies in areas of energy sector research, consulting or advisory.

7. Demonstrated knowledge of energy-water nexus in rural India, specifically of the role of solar water pumps, promotion techniques, rationale and impact.

If the bidder is a consortium, they must provide signed agreement/letter from all consortium partners highlighting the willingness to collaborate and respective roles. Also, the lead agency in the consortium should meet financial and technical requirements. At least one member from the consortium should be present at the time of presentation at the GIZ office.

Team composition

The bidder is required to provide personnel suited for tasks described in this ToRs. The personnel requirement along with key tasks and minimum expected qualifications are listed as follows:

1. Team leader

- Tasks
  - Overall project management to ensure high quality of output/deliverables within the committed deadlines, and regularly reporting of progress
  - Taking all strategic decisions related to the assignment, including planning and personnel management
  - Supporting experts with regular review and inputs
  - Coordinating communications with relevant officers, agencies and organizations in the focus states, and with other stakeholders including MNRE, experts, vendors etc.

- Qualification requirement

Parameter	Reference*	Details
Qualification	2.1.1	Post-Graduation in Management/Engineering/Economics/Energy from a premier academic institution
Language	2.1.2	Proficiency in English
General professional experience	2.1.3	20 years of experience in the policy research and/or advisory, with a focus on electricity and renewable energy sector
Specific professional experience	2.1.4	10 years of experience in renewable energy policy research and/or advisory
Leadership experience	2.1.5	Project/programme management experience of at least 10 years
Others	2.1.8	- Proven experience in managing/contributing to survey-based study or in impact assessment study - Proven expertise in distributed renewable energy segment, preferably in solar water pumps - Clear understanding and knowledge of rural water-energy-food nexus in India

*Reference to Technical Assessment Grid

2. Energy policy expert (Expert 1)

- Tasks
  - Designing overall research, survey and consultation strategy/approach for the study
  - Managing all research activities including identification of parameters to be probed under the two study objectives, designing of questionnaire, stakeholder consultations, meetings, data analysis etc.
  - Executing the survey strategy, including engaging required personnel and tools

- Writing the final report, including analysis of surveyed data on operational condition of SWPs, review and evaluation of state schemes and implementation processes, and final recommendations for policy makers
- Managing all activities related to dissemination of report, including meeting, agenda, speaker and delegate invitation etc.

- Qualification requirement

Parameter	Reference	Details
Qualification	2.2.1	Post-Graduation in Management/Engineering/Economics from a premier academic institution (or any appropriate subject)
Language	2.2.2	Proficiency in English
General professional experience	2.2.3	10 years of experience in the energy policy research, consulting or advisory, with a focus on renewable energy sector
Specific professional experience	2.2.4	5 years of experience in renewable energy policy research, consulting or advisory, with special focus on distributed renewable energy
Leadership experience	2.2.5	Project lead experience of at least 5 years
Others	2.2.8	- Proven experience of contributing to survey-based study/assessment - Proven expertise in distributed renewable energy segment, preferably in solar water pumps - Clear understanding and knowledge of rural water-energy-food nexus is desirable - Strong research and analytical skills - Excellent inter-personal and networking skills

3. Energy policy researchers (Short-term expert pool 1)

- Tasks
  - Overall responsibility of executing research and consultation, including identifying key parameters under the two study objectives, designing of questionnaire for survey and stakeholder consultation, executing stakeholder consultations through one-on-one or round-table meetings, data cleaning, and data and input analysis.
  - Supporting the energy policy expert in report writing
  - Organizing dissemination meeting, including drafting the agenda, inviting speakers and delegates, and making required bookings etc.

- Qualification requirement

Parameter	Reference	Details
Qualification	2.6.1	Post-Graduation in Management/Engineering/Economics from a premier academic institution
Language	2.6.2	Proficiency in English and Hindi (Working knowledge of Tamil and Oriya would be preferable, at least within the broader team)
General professional experience	2.6.3	5 years of experience in energy policy research, consulting or advisory
Specific professional experience	2.6.4	3 years of experience in renewable energy policy research, consulting or advisory, with special focus on distributed renewable energy
Others	2.6.7	- Proven experience of contributing to survey-based study/assessment

		- Proven expertise in distributed renewable energy segment, preferably in solar water pumps - Clear understanding and knowledge of rural water-energy-food nexus is desirable - Excellent networking and inter-personal skills - Precise and lucid writing capabilities

The bidder is expected to engage appropriate number of researchers (at least three) to complete the listed tasks within given timelines. CVs of three researchers submitted as a part of the proposal would be evaluated.

4. Field Survey Expert (Expert 2)

- Tasks
  - Overall managing the survey component of the study
  - Supporting energy policy expert in defining details of the survey strategy, including personnel engagement, accessing appropriate software and tools
  - Training enumerators for executing field surveys, including dummy survey
  - Tracking and managing enumerators to ensure high quality of survey output within committed timelines

- Qualification requirement

Parameter	Reference	Details
Qualification	2.3.1	Graduation in Statistics/Engineering/Economics/Survey methodology
Language	2.3.2	Proficiency in English and Hindi
General professional experience	2.3.3	10 years of experience in conducting primary surveys across large sample surveys, with a focus on rural consumers/markets
Specific professional experience	2.3.4	5 years of experience in conducting primary surveys in rural areas, with a focus on digital surveys
Leadership experience	2.3.5	Project lead experience of at least 5 years

5. Enumerators (Short-term expert pool 2)

- Tasks
  - Undergo the training designed for executing the survey.
  - Execute the survey on ground in accordance with the decided strategy, including traveling to the remote destinations as per the beneficiary list, interviewing farmers and accurately feeding the data
  - Regularly communicate outcomes, obstacles and experience with field survey expert
  - Be resourceful in managing discrepancies and anomalies in beneficiary list, in consultation with the field survey expert

- Qualification requirement

Parameters	Reference	Details
Qualification	2.7.1	Graduation in any relevant subject

Language	2.7.2	Proficiency in English and local language (Oriya in Odisha, Tamil in Tamil Nadu and Hindi in Rajasthan, Uttar Pradesh, Chhattisgarh and Jharkhand)
General professional experience	2.7.3	5 years of experience in conducting primary surveys in rural areas, including at least 3 years of experience in conducting digital surveys
Others	2.7.7	- Very strong interpersonal skills - Resourceful and flexible

The bidder is expected to engage appropriate number of enumerators (at least 10) from each state to execute the survey efficiently within the given timelines. CVs of at least one enumerator to be engaged in each of the four states should be shared with the proposal for evaluation. These four enumerators may act as state leads and should not be replaced during the survey.

6. Statistician (Expert 3)

- Tasks
  - Supporting energy policy and field survey experts in designing survey strategy by proposing statistical research methodologies that ensures compliance to good statistical research standards in data capturing and analysis.
  - Supporting researcher in data cleaning and analysis.

- Qualification requirement

Parameter	Reference	Details
Qualification	2.4.1	Post-graduation in Statistics/Economics
General professional experience	2.4.3	5 years of experience in using statistical analysis tools
Specific professional experience	2.4.4	3 years of experience in contributing to primary survey-based research, preferably in rural India
Others	2.4.5	Clear understanding of survey techniques and technologies

Note: The bidder may form a consortium with an organization specializing in field surveys to execute works by the Field Manager and Enumerators in case the required competencies are not available within the lead organisation. In this case, detailed profile of the field survey organization and the CVs of field manager and enumerators should be included in the proposal. The representative of all organizations included in a consortium should be present at the pre-award presentation.

Also, the bidder cannot change the composition of the team during execution of the contract without GIZ clear and written approval. Under unavoidable circumstances, GIZ must be provided with at least three CVs that meet the minimum qualification criteria set under this ToRs to select an appropriate replacement.

5. Costing requirement

The bid assessment must consider the following cost requirements:

- Human days

Resource category	Unit	Expert days
Team leader	1	15 days
Energy policy Expert	1	85 days
Energy policy Researcher	3	225 days (3*75)
Field Survey Expert	1	40 days
Enumerator	10	400 days (4*100)
Statistician	1	10 days

Note: Expert days include travel days

- Travel and accommodation

The bidder must calculate the travel required by experts, researchers and enumerators based on the work packages and tasks stipulated in Chapter 2. These expenses considered should include flight costs, accommodation expenses, daily allowance, and other travel expenses.

- Meetings/conferences

The bidder is required to organize at least ten events which include the following:

- Two-day training for enumerators (1)
- Half day stakeholder consultation meetings in each of the six focus states (2-7)
- Focused group meetings with SWP users in each of the two states where survey is not being conducted (8-9)
- Dissemination roundtable meeting in New Delhi (10)

All events must be executed in accordance with the details mentioned in Chapter 2.

- Other costs

The bidder will share in details the anticipated additional cost requirements such as cost of renting software and server for conducting the online survey. Associated details of such cost items should be included in the proposal.

6. Requirements on the bid format

The structure of the bid must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Chapter 3) is to be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). The bidder must respond to all questions mentioned under Section 3. It must be legible (font size 11 or larger) and clearly formulated. The bid is drawn up in English.

The complete bid shall not exceed 15 pages (excluding CVs).

The CVs of the personnel proposed in accordance with Chapter4 of the ToRs must be submitted using the format specified in the terms and conditions for application. The CVs shall not exceed 2 pages. The CVs must clearly show the position and job the proposed person held in the reference project and for how long. The CVs can also be submitted in English.

If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment.

Please calculate your price bid based on the activity and costing requirements mentioned in Chapter 4 and 5.

The right of accepting tender rests with GIZ, and it reserves exclusive right to accept or reject any tender without assigning any reason thereof. GIZ does not bind itself to accept the lowest tender.

Shortlisted bidders will be invited for a presentation at the GIZ office, New Delhi within 45 days of closing the bid.