Indo-German Energy Programme – Access to Energy for Rural Areas

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Terms of Reference (ToR) for developing communication material for stakeholder awareness with an objective of creating enabling market environment for Solar Power Irrigation Systems (SPIS) in India, under the 'The Access to Energy for Rural Areas of Indo-German Energy Programme'.

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List of Abbreviations

B2C – Business to Consumer

B2C – Business to Government

BMZ – German Federal Ministry for Economic Cooperation and Development

CV – Curriculum Vitae

Duke – Duke Energy Corporation

DSM – Demand Side Management

GIZ – Deutsche Gesellschaft für Internationale Zusammenarbeit

IGEN – Indo-German Energy Cooperation

IGEN-Access – Indo-German Energy Cooperation Access to Energy in Rural Areas

IGEN-RE – Indo-German Energy Cooperation Renewable Energy

MNRE – Ministry of New and Renewable Energy

OPIC – Overseas Private Investment Corporation

PA – Powering Agriculture

PAEGC – Powering Agriculture: An Energy Grand Challenge for Development

PV – Photo Voltaic

RE – Renewable Energy

SHS – Solar Home Systems

SIDA – Swedish International Development Cooperation Agency

SPIS – Solar Powered Irrigation System

ToR – Terms of Reference

USAID – United States Agency for International Development

VASFA – Vaishali Area Small Farmers Association

1. Background

The Indo-German Energy Programme – Access to Energy in Rural Areas (IGEN-Access) 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. The programme aims to improve the access to clean energy in the rural areas of India. The IGEN-Access project is currently being implemented in four states- Uttarakhand, Uttar Pradesh, Bihar and West Bengal. The programme is being implemented over a period of three years (March 2015 – March 2018). BMZ has commissioned GIZ with the implementation of the project. GIZ is a federal enterprise based in Eschborn and Bonn, Germany.

BMZ supports the international initiative called "Powering Agriculture: An Energy Grand Challenge for Development" (PAEGC), where it collaborates with USAID, the Swedish International Development Cooperation Agency (SIDA), Duke Energy Corporation (Duke) and the Overseas Private Investment Corporation (OPIC). The objective of PAEGC is to develop and scale clean energy solutions[1] for increased yield, decreased post-harvest loss, and increased value added processing - while simultaneously working to decouple the agriculture/fossil fuel linkage and invest in low-carbon economic growth. The BMZ has commissioned GIZ to implement this contribution to the PAEGC on its behalf through the "Powering Agriculture sustainable Energy for Food – PA" project. The German contribution includes support for innovative cooperation formats with private and public sector actors which demonstrate scalable actions.

IGEN Access and PA jointly aim at nurturing the Market Ecosystem for Solar Powered Irrigation in India.

2. Context

The market for solar powered irrigation systems in India is presently driven by government subsidies resulting in a market for "business to government (B2G)" sales. The "business to consumer (B2C)" sales is presently negligible. However, with the removal of government subsidies from diesel and petrol, reduction in the global price for solar panels and the promotion

[1] In the context of PAEGC, the term 'clean energy' is defined as: Usable energy (i.e. electricity, illumination, heating/refrigeration, mechanization) that is derived from renewable sources and supports a reduction in fossil fuel use, increase in efficiency, and/or limitation of greenhouse gas emissions. Clean energy sources include – solar, hydro, wind, geothermal, sustainably harvested biomass, and biogas.

of access to end user financing through banks, there is a high potential for a market-based approach for solar powered irrigation systems.

Although there exists a potential for solar powered irrigation pumps, there are many gaps within the existing market ecosystem. The demand for the product is low due to poor knowledge and lack of adequate awareness about the technology. The supply chain is weak due to primary focus of the technology suppliers on government business through tenders. Misplaced accountability has often led to poor installations and aftersales services. The bankers are skeptical to lend due to their limited knowledge of the technology, and due to their inhibition that the borrowers in this sector may not be able to repay the loan. The opportunity cost for converting a farmer to a potential consumer of solar powered irrigation pump is also very high and resource intensive for the private sector. These are some of the factors that are negatively influencing the growth of the B2C segment.

Unavailability of a clear communication strategy in general, and suitable communications material in particular is a major barrier for the development of the SPIS market. There are no specific communication strategies available with most of the private manufactures/ integrators for targeting farmers (B2C) in order to promote solar powered pumps.

The Indo-German Energy Programme- Access to Energy in rural areas (IGEN-Access) programme, of GIZ India in Partnership with PA, aims to create an enabling market environment for increased adoption of solar powered irrigation systems by addressing the awareness and knowledge gap barrier that currently hinders the market growth and the market penetration.

3. Objectives

The objectives of the assignment are the following

a) To analyse and present the operational data from the two community based solar powered irrigation pumps installed under the GIZ's previous programme (IGEN-RE) in Bihar as a business case and use the learnings from the analysis to designing appropriate awareness creation materials;

b) Design and develop communication material to create better understanding and improved awareness about SPIS leading to increased demand for multiple stakeholder such as policy makers, bankers and agri-extension workers/ farmers.

4. Scope of Work

The work under this assignment is divided into two broad work packages. The work under section 4.1 (Work package 1) deals with analyzing, interpreting and representing the data from two community SPIS installed in Muzaffarpur & Vaishali districts in Bihar serving farmers (members & non-members) of the Vaishali Area Small Farmers Association (VASFA). We expect that the findings from the analysis would also provide insights into the farmer's behavior towards technology adoption. The scope of work under section 4.2 (Work package 2) deals with designing and developing communication material on SPIS targeting policy makers, bankers and agri-extension workers/ farmers to create improved awareness. The consultant would also develop an outreach strategy to reach out to diverse stakeholders with the materials created.

To summarize, the work packages are as following

- Work package 1: To analyze, interpret and represent the data from two community SPIS located in Baniya, Muzaffarpur & Lalpura, Vaishali. The data analysis should be both quantitative & qualitative and its representation should facilitate wider outreach and comprehension. The outputs of this activity will feed into the second work package.

- Work package 2: Designing and developing communication material on diverse aspects of SPIS for awareness among the key stakeholders namely farmers/farmer's cooperative, bankers, and policy makers/senior government officials. The ultimate objective of the intervention is to ensure improved demand creation for the technology.

4.1. Analysing, interpreting and representing the data from two community SPIS installed at Baniya, Muzaffarpur and Lalpura, Vaishali to showcase the SPIS to a wider audience.

Solar Powered Irrigation System is a clean energy solution which can be employed to replace diesel for sustainable irrigation practices. Under the IGEN – RE program, GIZ had successfully installed two community SPIS at Muzaffarpur & Vaishali districts of Bihar. The systems have been operational for over two years since April 2014. The data for the SPIS which includes parameters like duration of the use of the two pumps, hours of operation across the different agricultural seasons over last two years, service charge collected from members and non-members etc. have been collected since the operationalization of the systems.

A detailed analysis of this data and it's representation in an innovative format will contribute in improving the knowledge and understanding of the technology among the different stakeholders and prospective users of this technology.

Main tasks

- Identify set of parameters necessary to perform a detailed analysis of the SPIS. Coordinating with the IGEN-Access team to collect the SPIS data available with GIZ. Perform a cursory data check to evaluate the data sanity and identify the data gaps, if any. Undertake necessary activities to collect the missing data from the project location.

- In consultation with the IGEN Access team, undertake the data cleaning activity (converting the raw data into meaningful data) for analysis. This may involve activities like data processing, dataset cleaning etc. Alongside data cleaning, develop a data analysis methodology.

- The bidder will have to use the data to develop a business case for community based solar powered irrigation pump. The IGEN Access team is of the view that innovative methods (infographics, audio visuals, data visualization etc.) should be employed for communicating the business case so that it is more receptive to a larger sectoral stakeholders.

We expect the bidders to answer the following questions as part of their proposal.

a) What would be your approach and methodology for developing a business case for a community based water-sharing model using solar powered irrigation pump.
b) What are the perceived risks associated with the different tasks under this work package? How does the agency propose to mitigate these risks?
c) What type of data analysis methodology/techniques or data visualization techniques will be used by the bidder? Please elaborate the roles and responsibilities of different team members for implementation of your proposal.

4.2. Designing, developing and testing communication material on diverse aspects of SPIS for stakeholder awareness.

Lack of awareness has been recognized as a major barrier for wider acceptance and penetration of SPIS. Interaction with different stakeholders highlighted the fact that there is a need to develop communication material for stakeholder/consumer awareness on the SPIS.

Hence this activity looks to design an information work package for improving the awareness about the solar powered irrigation system which will facilitate demand creation and enabling ecosystem for the technology.

Under this work package the bidder will design and develop relevant ready to use communication material which can be used by different actors in the sector and by GIZ for awareness generation. The three target groups for awareness creation are Farmers/Farmer's cooperatives, bankers, and policy makers/senior government officials.

Target Audience	Focus Area of the Communication Material	Expected Key Outcome
Farmers/Farmer's Co operatives	Focus on the benefits of using solar powered irrigation systems (SPIS), importance for planning and the sizing of the pump, highlight the operation and maintenance practices, limitations of the technology, access to end user bank finance, and access to service provider (supplier) etc.	Farmers are aware of the benefits of the SPIS and proactively seeking bank-financing to buy and use SPIS.
Bankers	Focus on the savings, incremental income from additional crops, antitheft mechanisms to ensure safety of the assets on the ground, information of authorised vendors and their authorised pumps etc. showcasing interviews with some bankers who have provided loans for installed solar powered irrigation pumps	Financing institutions/banks understand the technology, its economics and its potential applications; and are able to cater to the demand for financing products for SPIS.
Policy Makers/Senior	Focus on the benefits of using the Solar Powered Pumps for	Policy-markers and other institutions are aware of key

Government Officials	Irrigation, importance of site selection, impact on the water quality, environmental impact, and interviews with some key target audience.	variables and issues that affect dissemination and use of SPIS.
Solar water pump manufactures, dealers, integrators	Focus on the financial, environmental and social benefits of SPIS and supports explaining technical concepts to clients	Solar and irrigation companies find materials useful to share with clients and use to support their marketing programmes

Main tasks

- Identify the key message to be communicated for awareness creation and demand generation of solar pumps for relevant stakeholders through suitable research.

- Design and develop ready to use communication material for the sector.The bidders would develop the following as part of the assignment
    a. Two (2) high quality audio visuals/documentary films of duration of 2 minutes each targeting the farmers/ agri extension workers and finance sector professionals (banks and Micro Finance Institutions). Therefore, there will be a total of two audio visuals/documentary films each visual/ film should focus on one type of audience.
    b. Six (6) animated doodle videos of not more than 90 seconds each with the objective of improving awareness on solar powered irrigation pumps targeting the above stated stakeholders.
    c. Two (2) high quality audio clips in Hindi and Bengali language each targeting farmers to create better understanding of the solar powered irrigation pumps. The four jingles in the two language should not be more than 60 seconds each and should be in a format which can be shared as an audio clip with larger audience through social media platforms.

- The knowledge generated from the work package 1 should be utilized for designing the work package 2.
- The bidder has to pilot the communication materials and collect feedback from the relevant stakeholders mentioned above before finalizing the same.

In order to facilitate the selection process, we would expect the consultants to answer the following questions as part of the proposal.

a) What would be your approach to determine and identify the key message for communication for the assignment? Based on your experience, can you share a few sample of key communication messages for each of the diverse stakeholders?
b) Has the team developed or managed similar assignment before? Can you kindly share some examples of some of the similar work undertaken by the bidder? Can you share the link or access to some of the communication products developed by the team?
c) We would request the bidder to justify the existing skillsets existing within the team to undertake the assignment?

d) We would like the bidders to share their approach to validate or pilot the communication material before finalizing the same?

e) Please elaborate roles and responsibilities of the different members of the implementing team as part of your proposal.

5. Deliverables

The specific deliverables from the two work packages for this assignment includes –

Work package 1

A business case through analysis of data for the two community SPIS installed in Bihar using different data visualization techniques to help communicate the findings to a variety of audience. The report should have

- Analysis of the operational data across the agricultural seasons over the span of last two years,
- Feedback and scope for improving the asset utilization (SPIP)
- Key messages based on the analysis, which can be shared for designing of communication materials

Work package 2

Design and develop communication material for awareness creation of SPIS for diverse target audience mentioned before in the ToR. The communication materials will be aligned to SPIS Manual and Tools designed by GIZ, and will thus serve a dual purpose as awareness and training material. The final deliverables will be as follows

a. Two (2) high quality audio visuals/ films of duration of 2 minutes each targeting the farmers/ agri extension workers and finance sector professionals (banks and Micro Finance Institutions). While the film targeting the farmers should be in Hindi and Bengali languages, the film targeting the financial institutions should be in English and Hindi. The film targeting farmers should have subtitles in English. Therefore, there will be a total of two audio visuals/ films each visual/ film should focus on one type of audience.

b. Six (6) animated doodle videos of not more than 90 seconds each with the objective of improving awareness on solar powered irrigation pumps targeting the above stated stakeholders. A lot of background information on the technology, its installation procedure, operation and maintenance etc can be obtained from the SPIS Manual and Tools prepared by GIZ Please refer to the Annexure.

c. Two (2) high quality audio clips in Hindi and Bengali language targeting farmers to create better understanding of the solar powered irrigation pumps. The audio clips should not be more than 60 seconds each and should be in a format which can be shared as an audio clip with larger audience. We plan to share the audio clips through social media through private sector to generate greater awareness about the solar powered irrigation pumps.

d. Electronic photo collection, comprising high quality photographs of impressions from the field,that are useful for story telling. File names to display caption, location, date and photographer name.

6. Structure of the proposal

We would highly appreciate brevity in response to the questions mentioned in the ToR. The applicant needs to answer each of the questions under the different work packages. The capability statement of the firm (or each of the firms in case of a consortium bid) should be

provided in the annexure of the proposal. We request the bidder to provide the roles and responsibilities of each team members.

7. Qualification criteria, Team composition, Timeframe & Reporting

The assignment requires diverse skills sets and experience and the bidder needs to ensure and prove that they have all the relevant skills needed for completing the assignment successfully. The proposed team should have the following experience and expertise:

- Experience of analyzing complex datasets and developing communication strategies to represent them in easy to understand innovative ways;

- Experience of working in the agriculture sector and familiar with activities associated with agriculture DSM, solar pumps, irrigation etc.;

- Experience of designing and developing knowledge and awareness products; and multimedia & advertising expertise.

- The proposed team for this assignment should have members with the following skills and experience.
    - At least one team member as team leader and agri-pump expert with 12 years of experience in project management with multiple experts and around 7 years of research experience on SPIS / promotion of agricultural products
    - At least one member as Research Expert/ Data analysist with 7 years in data analysis and data visualization in research for development sector; The expert should also have around 8 years' experience of working renewable energy for agriculture.
    - At least one member as content developer/ communication expert with 8 years' experience in designing and developing communication material and at least 7 years in designing audio clips in content developing and designing outreach strategies.

    - At least one member as audio visual/multi-media experts with at least 5 years' experience of working with whiteboard videos, 'and at least 10 years of experience in designing high quality audio visuals experience.

- The bidding firms should also have a data visualization expert with at least 5 years of experience in data visualization. The bidder is expected to provide relevant documents to evince the above-mentioned qualifications.

We expect the following human resource days for the above experts for undertaking the assignment. Please note that this is an estimate and may differ based on the approach of the bidding firm.

Human Resources required for the assignment	Human Days
Team Leader/ Agri pump expert (1)	3
Research Expert / Data analysist (1)	10
Data visualization expert (1)	7
Content Developer / Communication expert (1)	30
Audio visual/ Multi-media expert (1)	25
Research support (2)	30 (15 *2)
Total	105

The total duration of the assignment is expected to be 7 months from signing of the contract. The successful bidders will be invited for a presentation at GIZ New Delhi office within 50 days after submission of the proposal. The bidders will be informed about the dates for the presentation at least a week in advance.

Technical Expert IGEN-Access, will be the point of contact for the selected bidding firm.

Reference documents

- Promoting, Financing and Advising on Solar Powered Irrigation Systems-Manual and Tools for Development Practitioners. Can be downloaded from https://energypedia.info/images/temp/d/dc/20160126090948!phpCMtNH5.pdf
- A link on the ideal length on the video http://go.yumyumvideos.com/blog/which-is-the-ideal-explainer-video-length