Terms of Reference (TOR)

Development of training materials for solar powered cold storage - technical

Title	Consultant - Training content development - Agri cooling
Contract Supervision	Program Manager - Global SDG7 Hubs, SELCO Foundation
Timeline	4 months : October 2022 - February 2023
Expected area of expertise	Content development, Content Writing, Module development, Training, Media
Email and website	www.selcofoundation.org

About SELCO Foundation
SELCO Foundation is an NGO established in 2010 is working on building a holistic ecosystem for sustainable energy access. In this regard SELCO Foundation engages in technical, financial and social innovation, enterprise development, skill building and financial inclusion. The organisation works on demonstrating and catalysing the role of renewable energy across verticals of well- being, health, education, livelihoods and the built environment.

Context

Indian farmers incur loss of INR 92,651[1] crore per year in post-harvest losses alone,the primary cause of which are poor storage and transportation facilities.Other issues include limited technical know-how on good agricultural practices, lack of market knowledge and inadequate market access. In the absence of proper storage facilities, farmers of perishable commodities such as fruits and vegetables have been rendered devoid of their livelihoods in both the immediate and the long term. Within the agriculture vertical, Agri cooling has emerged as one of the primary priorities for the organisation in terms of building replicable and scalable models across different geographies.Along with the technology developing customised training modules (region-wise, commodity wise) for end-users, technology providers and ecosystem actors will be utmost importance. With SELCO's open source policy and aim to develop solutions for the sector, this project focuses on developing the training modules for technical and non technical aspects of agri cooling in a format that becomes usable, understandable and with little effort can be contextualised by anyone across the globe.

Objective

The objective is to develop training modules for the end users and enterprises that can be used pre, during and post implementation period of solar powered cold storage implementations. The training is aimed to achieve the below mentioned goals.

- To improve the practices of setting up a decentralised renewable energy powered cold storage system.
    - Pre - installation, installation and post- installation - Preparations and best practices for end users and tech vendors.
    - Improve skills & knowledge of end-users / vendor on usage, operation and maintenance
    - To maximise the utilisation of the cold storage facility up to its full potential.
    - To create a complete understanding of troubleshooting of the cold storage technology.
    - Capacity building of CEEs, tech enterprises.
- Enhancing capacity of human resources by capacity building and training.

Scope of the work

Under this work the consultant/ agency is expected to develop training modules, facilitators guide and training tools (PPT, Posters, IEC materials, checklist, guidelines, toolkits etc.) for the following.

1. End user training :
    a. Procurement & pre- installation preparation
    b. During Installation(on day of installation) training
    c. Post Installation training
2. Enterprise training
    a. Procurement & pre- installation preparation training

A brief about each of the above training requirements :

End user	Procurement & pre- installation preparation	• Site preparation document/ design (kind of civil work required) • Permissions on land usage and agreements in place, if any • Understanding of the help required on the day of installation and making sure the same is available during the delivery • Giving inputs to the tech vendors on the terrane and transportation of the cold

		storage till last mile of installation site to help plan route and logistics ● Understanding the BoM and the components of the cold storage that will be coming in ● Installation best practices- pictorial representation of the components and on other best practices in visual format (ex. BoM's pictorial representation) ● Understand when the cold storage will be installed once it reaches field- to make sure of safety of components
	During Installation(on the day of installation) training	A checklist of best practices to cover the prep for the installation day, ex.: ● to identify and get an operator/ manager hired before the site preparation and installation ● Always have the owner of the cold storage be present to get trained on the usability and maintenance of the cold-storage (he/she can then be the master trainer for any manager/ operator coming next During installations, the stakeholders from end-user's side should: ● Understand the roles of tech vendors and other technical support stakeholders locally and otherwise- making sure the line of communication, service support process and timelines are understood ● Understand the warranties given and how & when they can be availed (any free services and check-ups to be clarified and understood by end-user and tech vendors) ● Understand their roles and responsibilities from the tech vendor Live Demo to understand: ● Commissioning of Tech- Live demo showcasing different parts of the cold storage + explaining functionality of each part ● How the parts needs to be operated and what regular maintenance they need ● Test run of the technology- show different scenarios (create different troubleshooting scenarios- battery, water tank, etc.), show dos and don'ts How to operate a cold storage: ● Dos and don'ts- before storage, what happens during overcast, door operating best practice, storage best practice, pre-cooling, cleaning, etc. ● Should be able to prepare a chart during this time basis of the commodities locally- which temp for which commodity and for how many days ● Safety components and explaining that- what needs to be done in these cases (fire, thunder storm, overcast, flood, etc.) Checklist of quality for end-user/ promoting NGO (QA by end-user): ● Understand and check the BoM and quality of material received ● Quality of installation: earthing, Thunder arrestor (where is it installed), MMS quality and panel placement and tilt angle, and site preparation ● Documents (wannaty card, bills, service records, other FaQs and documents- on site videos, posters, etc.)
	Post Installation	● Capturing problems and mitigation plan ● Regular maintenance guide of the system (cleaning, regular check-ups, etc.)- daily, weekly, monthly
Enterprise	Procurement & pre- installation preparation training	● Giving site prep requirements to the end-users before hand (this is to be linked to the site survey- understanding the clearance of area, type of foundation/ground on which it is being put, any water logging or weather issue)- put best practices together ● Giving kind of labour and other help required on field during installation ● Making sure all clearances and transportation route is understood before dispatch (end-to-end)- understanding the local weather scenarios during transportation- putting down all the best practices like product insurance during transportation ● What are dos and don't if its a hybrid system (grid + solar)- focus on communicating voltage requirements, other installations required to cater the same- it can be linked to SSF and what recommendations were made there- this here is a checklist only

Training Target Audience : Ecosystem Stakeholders

- End users: Different types of end users, (individuals- farmers or Micro entrepreneurs, SHGs, FPOs; PWDs, women or youth, Govt.)/ owners, managers and operators of the cold storage
- Clean energy Enterprise and Technology enterprises:: Solar enterprises, cold storage developers and vendors
- Implementing agencies: promoting NGOs, FPOs, CBOs, local partners, etc.
- Internal organisational / partner HR

Methodology and approach

The methodology includes, but is not limited to secondary research, stakeholder consultations, field visits, etc..

1. **Secondary research:** in-depth understanding and review of the existing program documents, reports, program-specific information, any other relevant training materials and ongoing training.

2. **Stakeholder consultations:** Meeting and interacting with stakeholders from across India (including the ones from SELCO's network) to verify the information and get feedback on the process, documentation and modules.
3. **Field visits:** This includes sample sites visits to a few cold storage implementations to understand about the technology and need of the target audicne.
4. **Focus regions:** This project is focused on creating modules which can be easily understandable and usable by anyone in the world. The document can cover examples of Indian states where SELCO have installed the cold storages.
5. **Review and feedback :** Two rounds of review and feedback.
6. **Testing**: On field testing /piloting of the training modules *with relevant stakeholders of SELCO* and training of traines on the training modules and plan a workshop with stakeholders of SELCO and its partners to pilot the modules and training documents. *This should help in getting feedback and improving the final documents and modules.*
7. **ToT** : Training for potential trainers

Deliverables:

- Submit of detailed work plan and timelines
- Training modules / booklet - 4 nos
- Training deck / ppt - 4 nos
- Training handouts / posters/ tools
- Concept and script support for 5 technical training videos
- Testing / pilot : 1 each of 4 modules
- ToT : 5 trainers

Expertise Required

- Individual Agency with experience, preferably in content development and assignment writing.
- Experience on compilation of qualitative information.
- Excellent written and verbal communication skills.
- Technical knowledge and familiarity with solar energy is desirable.

Selection Criteria

The technical proposal will be evaluated based on the following general areas:

1. Agency/ Contractor experience in the field of assignment.
2. Understanding of the aims and objectives.
3. The qualifications and relevant experience of the personnel.
4. The financial proposal will be evaluated on the basis of expertise, cost, lead-time and proposed payment terms.

***It is recommended that the consultant depute one representative with documentation and project management skills to be stationed at SELCO Foundation office in Bangalore during the duration of this project to work closely for this project. The consultant's representative will have to follow SELCO's working hours and holidays during the period that they work from the SELCO office. . The modalities can be further discussed and finalised at the time of signing the contract.

Interested consultants / organisations, with relevant experience (please include samples and/or references of the previous similar work as proof of experience) and based out of India are requested to reach out with a detailed proposal giving a brief on the methodology and the process they will uptake for this project, including budgets (with break-ups and explanation), timelines and milestones and send the same to knowledge@selcofoundation.org marking sikha@selcofoundation.org in cc with a subject line: "Proposal for designing and developing technical training materials for solar cold storage" on or before 25th of October 2022.