
SELCO Foundation – Procurement Officer
690, 15th Cross Rd, Jeewan Griha Colony, 2nd Phase, J P Nagar, Bengaluru, Karnataka 560078
procurement@selcofoundation.org


The Tender Estimated value is approximately ₹1.67 Crore (Rupees One Crore Sixty-Seven Lakhs only)

The detailed tender document which can be downloaded at https://selcofoundation.org/tender/

from 08-April-2023. Bids, as per the terms and conditions should be submitted to the undersigned, at the above-mentioned address by 5 pm on or before 20-April-2023.

Chief Executive Officer – SELCO Foundation
SELCO FOUNDATION

TENDER NOTIFICATION

FOR

Supply, Installation & Maintenance of Solar Powered Post Harvest Loss Management (PHLM) Solution- 80MT & 40MT Cold Storage units for Potato, Tomato and Food & Vegetables Growing Farmers in Karnataka & Maharashtra

TENDER DOCUMENT

Address for Communication

SELCO Foundation
#690, 15th Cross Rd, J P Nagar – 2nd Phase
Bangalore, Karnataka – 560078
Telephone: 080-26493145
E-mail: procurement@selcofoundation.org
DISCLAIMER

NIT No: 01/23-24

This tender by SELCO Foundation is for the selection of vendors for the work of Supply, Installation & Maintenance of Solar Powered Post Harvest Loss Management (PHLM) Solution-80MT & 40MTCold Storage units for Potato, Tomato and Food & Vegetables Growing Farmers in Karnataka & Maharashtra during the year 2023-2024.

NOTE:

1. Though adequate care has been taken while preparing the Notice Inviting Tender (NIT) document, the Bidders shall ensure that the document provided to the Foundation are complete in all respects. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any Bidder within seven (7) days from the date of notification of Request for solution (RfS)/ Issue of the RfS documents, it shall be considered that the RfS document is complete in all respects and has been received by the Bidder.

2. SELCO Foundation has the right to award the works under this tender to single or multiple vendors and in multiple tranches based on the technical evaluation or lowest quote ascertained through this tender.

3. Organisations can send the quotations Completely or Partially.

4. SELCO Foundation reserves the right to cancel/ withdraw this invitation for bids without assigning any reason and shall bear no liability whatsoever consequent upon such a decision.

5. SELCO Foundation reserves the right to modify, amend or supplement this document.

6. While this RfS has been prepared in good faith, neither SELCO Foundation nor their employees or advisors make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein, or the accuracy, completeness or reliability of the information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this RfS, even if any loss or damage arises by any act or omission on their part.
1. CONTENTS OF BID DOCUMENT

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NOTICE INVITATION TENDER

Chief Executive Officer of SELCO Foundation, Karnataka State, India hereby invites bids for the Supply, Installation & Maintenance of Solar Powered Post Harvest Loss Management (PHLM) Solution – 80MT & 40MT Cold Storage units for Potato, Tomato and Food & Vegetables Growing Farmers in Karnataka & Maharashtra with its technical specification as stated in Annexure 1, during the year 2023-2024.

1. Tender Ref No. 01/2023-2024
2. Last date & time for the bid submission 20-04-2023, 5 PM
3. Opening date of first cover (technical bid) & second cover (financial bid) 21-04-2023, 11 AM
4. Venue of acceptance and opening of tenders. SELCO Foundation, Bangalore

Interested and eligible Bidders may furnish the Technical & Financial Bids for Supply, Installation & Maintenance of Solar Powered Post Harvest Loss Management (PHLM) Solution – 80MT & 40MT Cold Storage units for Potato, Tomato and Food & Vegetables Growing Farmers in Karnataka & Maharashtra during the year 2023-2024 to the below-mentioned address:

Procurement Officer - Tender NO 01/2023-2024
#690 15th Cross J P Nagar 2nd Phase
Bangalore - 560078
Telephone: 080-26493145
E-mail: procurement@selcofoundation.org

Any further information or clarification may be obtained either in person or through by calling SELCO Foundation during office hours at Ph: 080-2649 3145 or by sending an email – procurement@selcofoundation.org

sd/-
Chief Executive Officer
SELCO Foundation
INSTRUCTION TO BIDDER

1. Eligibility Criteria for Participating in the Bidding:

1.1 The bidder should be in operation for last 3 years in the field of supply, installation, and maintenance of Solar Powered Post Harvest Loss Management (PHLM) Solution- Cold Storage units.

1.2 The bidder should submit the following document along with the Tender:

a. Registration Certificate issued by the competent authority.

b. Valid manufacturing license issued by the competent authority or authorized Dealer Certificate whichever is applicable.

c. List of the Authorized Distributor or Representative in the State of Karnataka & Maharashtra and who shall conduct the business responsibility of the Manufacturer (if the tender is submitted by the manufacturer).

d. Company Profile relevant to the item supply along with Product literature/Specifications including the following documents:
   ● At least 3 similar contracts completed during the last 3 years;
   ● Should have manufactured or marketed the specific goods covered in the bid documents for at least 2 years;
   ● The bidder shall provide proof of experience with knowledge of modes of packaging distribution and transportation of such items under monsoon conditions;

e. Up to date Professional Tax, Income Tax, GST Clearance certificate.

1.3 Bidder should submit the copy of their valid PAN card.

1.4 The bidder should submit the self-declaration certificate where the bidder shall declare that they have not blacklisted from any Govt or non-Govt. agencies or institutes.

1.5 The bidder should be able to provide excellent services. It is expected that any complaints will be attended to within 72 hrs of lodging such complaints. The bidder should provide details of nearest service centres or contact points.

1.6 Declaration by the bidder that they will be able to execute the order before 15th July 2023.

1.7 The bidder should submit the documents to establish that the bidder has implemented projects average of worth 02 Crores or more in the last two years.
2. Cost of bidding:
The Bidder shall bear all costs associated with the preparation and submission of Bid to the Chief Executive Officer, SELCO Foundation (hereinafter referred to as “the Purchaser”) and SELCO Foundation will in no case be responsible or liable for any costs, in relation to the conduct or outcome of the bidding process.

3. The technical proposal shall contain:
   3.1 Particulars of the Firm as per Annexure - 2
   3.2 Checklist of Documents to be submitted in First Envelope as per Annexure -3
   3.3 The Bidder has to submit an acceptance letter of guarantee for 5 years for the total performance of the Cold Storage Unit
   3.4 The bidder has to provide the nearest local service center details.
   3.5 The Bidder has to sign all the pages of the documents as a token of acceptance of all terms and conditions.

4. The financial bid shall contain:
The rate quoted for Cold Storage units can be different in different geographies. The rate quoted should include all taxes levied by the State & Central Govt. Packing, and forwarding charges including transportation, loading & unloading, installation, commissioning & Maintenance.

5. Price schedule:
The Bidder shall complete the price schedule as per Annexure 5 - PRICE SCHEDULE furnished in the Bidding Documents, indicating the total cost towards Supply, installation and maintenance of Solar Powered Post Harvest Loss Management (PHLM) Solution of Cold Storage units. The SELCO Foundation will not pay any extra charges over and above the rate quoted by the Bidder.

6. Fixed price:
Prices quoted by the bidder are firm, final and binding and are not subject to variation or change in any circumstance or on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected. The quotation will remain valid for a period of 12 months from the date of opening the second envelope (financial bid).

7. Period of Validity of Bids:
Bids shall remain valid for a period of 12 months from the date of opening of the Second Envelope (Financial Bid). A Bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.

8. Format and Signing of Bid:
The Bidder shall give a set of hard copies of all the documents on the sealed cover. The Bids could be submitted by hand or post/courier to the below-mentioned address

Procurement Officer - Tender No 01/2023-2024
SELCO Foundation, #690, 15th Cross, 2nd Phase,
JP Nagar, Bengaluru- 560078,
Email id: procurement@selcofoundation.org
9. Deadline for Submission of Bids:
Bids must be received by the Purchaser not later than the time and date specified in the Invitation for Bids. The Purchaser may, at its discretion, extend this deadline for submission of the bid by amending the bid Documents in which case all rights and obligations of the Purchaser and Bidder previously subject to the deadline will thereafter be subject to the deadline as extended.

10. Tender Opening:
The Technical & Financial bids will be opened on the same day itself or on separate days. The financial bids (Second Cover), of only technically qualified Bidders, will be opened. The Bidder Names, Bid Modifications, or Withdrawals, bid prices, Discounts and the presence or absence of the requisite details as the Purchaser, at its discretion, may consider appropriate will be recorded by the Purchasing Committee of SELCO Foundation. No Bid shall be rejected at bid opening, except for late bids, which will be rejected.

11. Clarification of Bids:
During evaluation of Bids, the Purchaser may, at its sole discretion, ask the Organisations for a clarification of its bid. The request for clarification and the response shall be in writing to the address of SELCO Foundation and no change in prices or substances of the Bid shall be sought, offered or permitted.

12. Preliminary Examination:
The Purchaser will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
Arithmetical errors will be rectified on the following basis. If there is a discrepancy between words and figures, the lowest of the two shall prevail and the bid shall stand corrected to that effect. The Purchaser may waive any minor infirmity or non-conformity or irregularity in a bid, which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any Bidder.

13. Acceptance or rejection of bids:
- CEO of SELCO Foundation reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability or any obligation to inform the affected Bidder or Bidder of the grounds for the said action.
- Any Bid with incomplete information is liable for rejection.

Terms and Conditions of the Contract:
1. Duration: The agreement will be valid for a period of 1 Year (12 months) from the date of completion of the installation and commissioning of the Project. The maintenance and service will commence from the date of completion or installation of the project and will be effective for a period of 1 (One) year. The end date of this agreement will be Twelve (12) months after the date mentioned in supply, installation and commissioning reports that will be subsequently annexed to this agreement and will form an integral part of this
2. **Prices:** Prices provided by the bidder, and accepted by the Foundation shall be considered as final and firm and will not be subject to escalation due to any variations in the prices of materials, labour and/or any other reasons which may occur while the order is being carried out (except any increase in costs due to a change in applicable taxes or other such regulations which shall be passed on to the Foundation). The Project Costs are inclusive of taxes, transport, installation, and 1 year of maintenance service which will include minimum two visits to the sites per year. The costs mentioned here do not include replacement of spares while servicing.

3. **Payment Terms:**
   The above cost will be paid in 2 instalments.
   - **1st instalment** of 50% will be paid along with the Work Order (WO).
   - **2nd and final instalment** of remaining 50% will be paid after the installation and commissioning of the materials and submission of material delivery note duly signed by the Foundation representative and submission of the installation completion certificate and hand over letter from the certification of satisfactory working condition of the Cold Storage Unit by Foundation representative.

   Any taxes and charges such as TDS that will have to be deducted from the WO amount as per the rules in force at the time of release of payment will be done by the Foundation and the Bidder will be paid only the net amount. The Bidder should submit the progress report to the Associate Director – Scale Programs, SELCO Foundation who will approve the invoice for payments based on the project performance and stages of completion.

4. **Insurance:**
   Insurance shall be arranged by the bidder till the products are supplied to the end point and installation is completed. Arrangement of transport, warehouse for stocking and safekeeping of the material till the handover is within the bidder’s scope of work and Foundation will not be responsible for any missing item or damage that is incurred before the system is handed over to the respective End User. The bidder will ensure insurance coverage and damage to service staff by way of any accidents during the course of this engagement with the Foundation for providing the services covered under this agreement.

5. **Inspection, Checking, Testing:**
   The products covered by the Work Order shall be subject to inspection within a reasonable time after arrival at the place of delivery and the Bidder must facilitate this process by fixing time, informing the Foundation in advance and making Bidder representative available at the location. Besides, the Foundation is also entitled to do a preliminary inspection at the manufacturing site of the Bidder by giving prior notice. The Bidder shall provide free access to the Foundation during normal working hours at Bidder’s or its sub-Bidder’s works and place at their disposal, internal test reports, material/component test certificates, approved drawings. Even if inspections and tests are fully carried out, Bidder shall not be absolved to any degree from their responsibilities to ensure that products supplied, comply strictly with
requirements of the Work Order and technical specification at the time of delivery, inspection on arrival at site, installation and commissioning and warranty/guarantee period. In any case, the products supplied must be strictly in accordance with the Work Order and the technical specification specified by the tender failing which the Foundation shall have the right to reject goods and hold the Bidder liable for non-performance of contract.

6. **Packing:**
   The products shall be dispatched by the bidder and adequately packed in appropriate packing which should be suitable for inland carriage and ensure complete safety of goods from any kind of damage during transport and subsequent storage at the health center.

7. **Assembly, Pre-installation survey, Installation, after sales service and training:** The bidder shall be fully responsible for the assembly of the product at the destination site and completeness of the Project as per the Work Order. The bidder shall provide necessary "After Sales Service" at the site for a period of 5 years as agreed upon by the Parties. Any Complaints on the equipment will be resolved within 5 to 10 working days of reporting. Installation will be done as per the standards agreed upon. Active contact numbers will be displayed at the site for registering any complaints on the performance of the product. The bidder will submit a plan of servicing to the Foundation before the release of final payment. The bidder will arrange a minimum of two (2) visits per year to the site for maintenance for a period of five (5) years and submit a report to the Foundation on the servicing with a functioning status of each site.

8. **Delivery terms:**
   The delivery of the said products will be to the End User as per the list provided by the Foundation in writing and agreed by the bidder. The time and delivery date as agreed between the Foundation and bidder shall be the essence of the contract. No variation shall be permitted, except with prior authorization in writing from the Foundation. Late delivery (LD) clause with corresponding penalty clause will be applicable at 2% per week beyond a period of one month. Delivery Schedule and terms will be as per the WO.

9. **Risk Purchase on Default:**
   In case of default on the part of the bidder to supply all the products or part thereof covered by the contract as per the standard/specifications within the contractual delivery period stipulated in the contract, the Foundation shall have the right to purchase such products or other of similar description at the risk and cost of the bidder. The bidder shall be liable to pay the cost of such purchase products and the penalty under clause 8 above for resultant delay.

10. **Delay due to force majeure:**
   If any time during the continuance of the Agreement the performance in whole or part by either party on any obligation under the contract shall be prevented or delayed by reason of any war, hostility, explosions, epidemics, quarantine restrictions, or other acts of God,
then provided, notice of the happening of any such event is given by either party to the other within fifteen (15) days from the date of occurrence thereof, neither party shall be reason of such event be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non-performance and delay in performance and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist. Force Majeure conditions shall not affect the payment obligations of the Foundation which shall be made as per clause 3 of this Agreement.

11. Rejection, Removal of Rejected Goods and Replacement:
In case the testing and inspection at any stage by inspectors reveal that the product, material or workmanship do not comply with the agreed specifications and requirements, the same shall be removed by the Bidder at his/its own expenses and risk within 15 to 20 working days of information of rejection by the Foundation. The Foundation shall be at liberty to dispose of such rejected goods in such manner as they may think appropriate, in the event the Bidder fails to remove the rejected goods within the period as aforesaid. All expenses incurred by the Foundation for such disposal shall be to the account of the Bidder. The freight paid by the Foundation, if any, on the inward journey of the rejected material shall be reimbursed by the Bidder to the Foundation before the rejected materials are removed by the Bidder. The Bidder will have to proceed with the replacement of that product or part of the product without claiming any extra payment if so, required by the Foundation, within 2 weeks of notification.

12. Warranty:
The Bidder shall warrant that every material/product to be supplied shall be in accordance with the specifications agreed upon by both parties. The items should be consistent with the established, recognized or stipulated standards for material of the type usually used for the purpose and in full conformity with the specifications and drawings or samples, if any, outlined by the Foundation in the tender documents and agreed upon by the Bidder by the virtue of acceptance of the WO by the Bidder. Products offered must withstand normal operating conditions. The warranty shall continue notwithstanding inspection, payment, acceptance of tendered product and shall expire except in respect of complaints notified to Bidder prior to such date within 48 months from the date of commissioning. The warrant will be according to manufacturer’s warranty policies.

13. Performance Guarantee:
The Bidder shall guarantee that any/all material used in execution of the Work Order shall be in strict compliance with characteristics requirements and specifications agreed upon. The Bidder shall guarantee that all material and products shall be repaired or replaced, as the case may be, at his own expense in case the same have been found to be defective in respect of material, workmanship for smooth and rated operation within a period of 48 months from the date of commissioning. Acceptance by the Foundation of any product and materials or their replacement will not relieve the Bidder of his/its responsibility concerning the above guarantee. In case of any legal case against the Foundation by any
ultimate user of the product with respect to the performance of the system (during the warranty period), the Bidder should support the Foundation with required and relevant technical testing and reports supporting the performance of the product and to defend that the non-performance of the product is not because of any manufacturing defect. The Bidder shall indemnify and hold the Foundation harmless for any misrepresentations, wilful misconduct or negligence of the Bidder, its employees, subcontractors and agents in performance of its obligations under this Agreement. The warranty replacements during the first year will be made within 15 to 20 working days from the date of receipt of the Complaint at the site.

14. Indemnity: The Bidder shall at all times indemnify the Foundation against all claims which may be made in respect of stores for infringement of any right protected by patent, registration of design, trademark or other intellectual property. Provided always that in the event of any claim in respect of alleged breach of patent, registered designs, trademark or other intellectual property being made against the Foundation, the Foundation shall notify the Bidder of the same and the Bidder shall at his own expense either settle any such dispute or conduct any litigation that may arise there from.

15. Intellectual Property

Nothing contained in this Agreement shall be construed as conferring upon the Bidder any right of use in or title to Intellectual Property, whether registered or not, received by it from the Foundation, other than as expressly stated by the Company in writing.

Neither Party shall reverse engineer, decompile, disassemble or otherwise attempt to discover any proprietary information in relation to the Intellectual Property of the other Party.

The Bidder shall not use the Foundation’s brand name, logo, trademarks and other intellectual property in any advertising material, marketing or sales tool or publish the Bidders engagement with the Foundation under this contract, without the prior written consent of the Foundation.

16. Other Clauses:

a. The Bidder will treat all information given under this agreement as information with proprietary value and will not disclose the same to competitors or any outsiders either directly or indirectly. Bidder will not at any time, except under legal process, divulge any proprietary information, trade or business secret relating to the Foundation or any customer or agent of the Foundation, which may become known by virtue of the position as Bidder, save in so far as such disclosure shall be done upon obtaining the prior written notice of the foundation and in the interest and for the benefit of the said Foundation and will be true and faithful to the Foundation in all dealings and transactions whatsoever relating to the said Project.

b. Either party may terminate this contract forthwith in the event of any fraud or misconduct of part of the other party; the Foundation may terminate this contract in the event of delay in supply/installation of the products by the Bidder beyond 15 days from what is stipulated in the WO or the Bidder may terminate in the event of 3 consecutive delays of 15 days from what is agreed to between the parties in making payment to the Bidder in the absence of justifiable reasons intimated by writing. Any
notice to be given hereunder shall be sufficiently given to the other party if forwarded by registered post or by Courier Service to the registered address of the other party mentioned in this agreement or the last known postal address of the other party. Upon the termination of this contract, the Bidder shall refund the entire amount paid by the Foundation. The Bidder shall deliver and further certify in writing that all deeds, documents and paper in his possession relating to the business of the Foundation.

c. Both the Foundation and the Bidder fully and freely intend to create an independent bidder relationship under this Agreement. Nothing herein shall be deemed to establish a partnership, joint venture, association or employment relationship between the parties. Both parties agree that the Bidder has sole and exclusive control over the manner and means employed in performing their activities under this Agreement in matters that are not specifically discussed and agreed upon between the parties to this Agreement.

d. The Foundation represents and warrants that (a) it has the full right and authority to enter into this Agreement, and no consent or authorization not obtained prior to the Effective Date is necessary to be obtained, (b) the Foundation is a charitable trust registered under the laws of India and is authorized to do business to the extent necessary to fulfil its obligations hereunder.

e. Except as specifically set forth in this Agreement, neither party makes any representation or warranty of any kind, express or implied, including without limitation any warranty of merchantability, any warranty of fitness for a particular purpose or use, any warranty of non-infringement, or any other statutory warranty. Each party expressly disclaims any and all implied warranties.

f. This agreement shall not be amended or renewed, except in writing as mutually agreed by both parties. The project shall be fully completed as agreed in the above-mentioned terms and conditions.

g. Notwithstanding anything else to the contrary: -
   - Bidder’s total aggregate liability under this Agreement shall not in any case exceed 100% of the value of this Agreement;
   - neither party shall be liable for any indirect, consequential, special, remote, exemplary, punitive or speculative losses or any losses or damages for loss of profits or business even if such party has been advised of the possibility of such costs or damages; and
   - The Bidder shall have no liability for matters outside of its own scope of works.

h. This Agreement along with the WO contains the entire terms of agreement between the Parties and supersedes any previous oral or written understandings, commitments or agreements pertaining to the subject matter. This Agreement may not be amended, assigned nor any obligation waived, except by in writing as signed by both Parties.

i. No failure or delay by either party in exercising any rights, power or legal remedy available to it hereunder shall operate as a waiver thereof.

j. Neither Parties shall during the term of this Agreement and for a period of one (1) year thereafter, either directly or indirectly, through any Third Party (ies) recruit, solicit, discuss
employment with, hire, employ or induce any such individual to leave the employment of
the other Party, unless prior written consent is obtained from the Party.

k. In the event that any or any part of the provisions contained in this Agreement is
determined to be invalid, unlawful or unenforceable by a court of competent
jurisdiction to any extent, such provision shall be severed from the remaining
provisions which shall continue to be valid and enforceable to the fullest extent
permitted by law.

l. The Parties shall not either directly or indirectly assign, transfer, charge or in any
manner make, offer or purport to assign, transfer or charge this Agreement or any
rights herein or any part thereof without the previous consent in writing of the other
Party.

17. Governing Law and Arbitration:
The Parties agree that this Agreement shall be governed and construed in accordance with
the laws of India. The Parties hereto agree that they shall use all reasonable efforts to
resolve between themselves any disputes, controversy or claim arising out of or relating to
this Agreement. If the Parties fail to resolve the matter within the 30 days of occurrence of
any dispute, controversy or claim shall be settled by binding arbitration under
the Indian Arbitration and Conciliation Act, 1996. There shall be one arbitrator mutually
appointed by the Parties. The place of arbitration shall be Bangalore and the arbitration
proceedings shall be in English. The courts at Bangalore alone shall have the jurisdiction to
entertain and, or try any dispute arising out of or in connection with or in relation to the
terms of this Agreement.
ANNEXURE 1: TECHNICAL SPECIFICATIONS OF SOLUTIONS

The cold storage unit runs on power generated from Solar Photovoltaic. During sunshine hours the electricity generated from solar photovoltaic is used to provide cooling to cold storage units as well as charging in the Thermal Storage System. The thermal storage solution is configured in a manner that solar energy generated from solar photovoltaic panels is converted into cold form through a vapour compression cycle. This cold energy is stored in a phase change material such as water or water salt eutectic mixture and transferred to the cold storage unit depending on the usage needs. During non-solar hours, the cooling needs of cold storage units are met through the stored cooling in the thermal energy storage.

The proposed project shall be commissioned as per the components and its technical specifications given below. Any shortcomings will lead to cancelation of work order & SELCO Foundation’s decision will be final and binding on the bidder.

80MT cold storage:
Site Address: Kuttuwadi village, Sanjeevininagar, Bilekerehobali, Hunusuru taluk, Mysore Dist. – 571189
The site has an existing warehouse (RCC Based one story building) which needed to be converted into cold room by adding PUF insulation to the walls, roof and the floor. Entire roof area is available for solar installation.

40MT cold storage:
Site Address: Site 1: Ghulewadi village, Sangmner Thaluk Ahmednagar district.
Site 2: Sangmner, Ahmednagar district.
The cold storage needed to be installed in the farmgate level at the farm field. Open land area available for installation of cold storage and solar panel shall be mounted on roof of the cold room.

1. Cold Storage unit:
The cold storage shall be configured in a PPGI body of minimum 0.5 mm thickness. An appropriate concrete foundation is to be provided as a base for the cold storage system.

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<th>80 MT</th>
<th>40 MT</th>
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<tr>
<td></td>
<td>Multi Chamber – 3 Rooms</td>
<td>Multi Chamber 4 Rooms (1 pre cooling chamber and 3 staging chamber)</td>
</tr>
<tr>
<td>External Body</td>
<td>Pre-painted galvanized iron (PPGI) with minimum of 0.8 mm thickness</td>
<td></td>
</tr>
<tr>
<td>Internal Volume of Cold Storage</td>
<td>Minimum Internal volume of 8500 CFT</td>
<td>Minimum Internal volume of 6000 CFT</td>
</tr>
<tr>
<td>Temperature range (Setpoint control available to user)</td>
<td>4 to 20°C</td>
<td></td>
</tr>
<tr>
<td>Cold Room chambers</td>
<td>Multi chamber - 3 chambers of equal size</td>
<td>Multi chamber - 4 chambers of equal size</td>
</tr>
</tbody>
</table>
### Internal Walls & Ceiling

Minimum 100 mm Polyurethane Foam with density of 40+/-2 kg/m³ and 0.5mm PPGI sheet on the inner side

### Flooring

Minimum 60 mm Polyurethane Foam with density of 40+/-2 kg/m³ + 1mm Anti-skid aluminium plate

### Door type

Minimum Opening of 6 feet Height x 3 feet Width. 100 mm Polyurethane Foam with density of 40+/-2 kg/m³,

### Door curtain

PVC curtain before the door

### Material of the structure (Door, hinges, floor, ceiling etc.)

Should be non-rusting material

### Display

There should be a display of temperature & humidity

### Emergency Switch

Alarm enabled with a Push button inside the cold room for communication during emergencies

### Light

Proper lighting should be provided inside the cold room

### Control unit to set the temperature & humidity

The control unit to set the temperature & humidity should be secured & kept in a location where it won’t be accessible for public or others

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#### 2. Refrigeration unit:

<table>
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<th>Capacity/Particulars</th>
<th>80 MT</th>
<th>40 MT</th>
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<tbody>
<tr>
<td></td>
<td>Multi Chamber – 3 Rooms</td>
<td>Multi Chamber 4 Rooms (1 pre cooling chamber and 3 staging chamber)</td>
</tr>
<tr>
<td>Refrigeration Rated Capacity @ -5°C evaporating, 45°C condensing</td>
<td>Minimum 12 TR of refrigeration. Certified specification from compressor manufacturer to be provided</td>
<td>Minimum 6 TR of refrigeration. Certified specification from compressor manufacturer to be provided</td>
</tr>
<tr>
<td>Compressor Brands</td>
<td>Bitzer/Frascold/GEA/Dorin</td>
<td></td>
</tr>
<tr>
<td>Temperature Range by using set point control as per requirement</td>
<td>4 to 15°C</td>
<td></td>
</tr>
<tr>
<td>Cooling system type</td>
<td>Air Cooled Vapor Compression System with Variable Speed Compressor</td>
<td></td>
</tr>
<tr>
<td>Refrigerant</td>
<td>R134a/ R407F/R407C</td>
<td></td>
</tr>
<tr>
<td>Power backup</td>
<td>Three Phase, 440VAC, 15 kVA,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Single Phase, 230 Vac, 10 kVA</td>
<td></td>
</tr>
</tbody>
</table>

---

#### 3. Thermal Energy Storage:

There should be a provision to store cooling in a thermal storage system to provide cooling during the off-sunshine period and store excess solar energy in case it is not utilized. The charging and discharging
of the thermal storage shall occur simultaneously. The energy storage medium should be phase change material (PCM) such as water or water salt eutectic mixture. The purpose of using phase change material is that it has longer life than electrical batteries to store energy.

In the case of the use of water salt eutectic mixture, the useful life of phase change material shall be minimum 10 years to minimize long-term expenditure associated with PCM replacement, and it should be non-toxic for usage with food commodities. The supplier shall provide a Material safety data sheet and life cycle test report from the original equipment manufacturer of the water salt eutectic mixture.

When cold storage is not operational, thermal storage shall not be providing any cooling to the cold storage. The purpose is to avoid energy wastage of already harvested solar energy. It shall be estimated based on the latent heat of the phase change material and the overall quantity of phase change material. The need for high energy storage capacity is due to avoid wastage of solar energy on days when cold storage is not utilized for its full load capacity. The excess solar energy will be stored in thermal storage, which will be utilized to provide higher pull-down (precooling) capacity or increased autonomy for cloudy/rainy days.

The energy storage capacity of thermal storage should be monitored and displayed with a minimum four linear graduations from minimum to maximum storage capacity. It will allow the user to pre-plan the cold storage operations and avoid spoilage of agriculture commodities.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Capacity</th>
<th>80 MT</th>
<th>40 MT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal storage medium</td>
<td>PCM (Water or other relevant PCM which maintains ~ -2°C in TES)</td>
<td>Multi Chamber – 3 Rooms</td>
<td>Multi Chamber 4 Rooms (1 pre cooling chamber and 3 staging chamber)</td>
</tr>
<tr>
<td>Cooling Storage Capacity (Minimum)</td>
<td>Minimum of 950 MJ</td>
<td>Minimum of 600 MJ</td>
<td>Minimum of 600 MJ</td>
</tr>
<tr>
<td>Precooling on daily basis (Minimum)</td>
<td>Minimum 10% Of the total cold storage capacity via solar and grid</td>
<td>Minimum 10% Of the total cold storage capacity via solar ad grid</td>
<td></td>
</tr>
<tr>
<td>Precooling of agriculture commodities from</td>
<td></td>
<td>30°C to 4°C</td>
<td></td>
</tr>
<tr>
<td>Door opening</td>
<td>Assuming the door is opened for maximum 8 times in 24 hours with each opening cycle is less than 30 seconds.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal Storage Capacity Indication</td>
<td>Linear with minimum 4 graduations between maximum and minimum thermal cooling capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-leakage from thermal storage/unit to ambient</td>
<td>Maximum 100 Watt at the ambient temperature of 40°C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Solar PV

The PV modules used must qualify to the latest edition of IEC PV module qualification test. The total solar PV array capacity should not be less than allocated capacity and should comprise solar crystalline modules of minimum Wp mentioned in the bill of materials/above wattage. Module capacity less than the minimum of the mentioned Wp shall not be accepted. PV modules must be tested and approved by one of the IEC authorized test centers. The module frame shall be made of corrosion-resistant materials, preferably having anodized aluminum.

The following information must be mentioned in the ID used on each module (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).

- Name of the manufacturer of the PV module.
- I-V curve for the module Wattage, Imax, Vmax and FF (Fill Factor) for the module
- Unique Serial No and Model No of the module

Materials Warranty

- Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than five (5) years from the date of sale to the original customer ("Customer")
- Defects and/or failures due to manufacturing.
- Defects and/or failures due to quality of materials
- Non-conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the Owner’s sole option

Performance Warranty

The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25-year period and not more than 10% after the first ten years period of the full rated original output.

<table>
<thead>
<tr>
<th>Capacity/Particulars</th>
<th>80 MT</th>
<th>40 MT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photovoltaic panels type</td>
<td></td>
<td>Polycrystalline/Monocrystalline</td>
</tr>
<tr>
<td>Solar Power Capacity (minimum)</td>
<td>40 kWp</td>
<td>20 kWp</td>
</tr>
<tr>
<td>Auxiliary Battery Electrical batteries</td>
<td></td>
<td>Auxiliary components such as cooling pump, evaporator fan, lighting, controller, etc., but not condensing unit</td>
</tr>
<tr>
<td>Battery Type</td>
<td>Lead-acid</td>
<td></td>
</tr>
<tr>
<td>Battery Capacity (minimum)</td>
<td>28,800 Vah, 10% discharge rating, 5 years OEM warranty</td>
<td>14,400 Vah, 10% discharge rating, 5 years OEM warranty</td>
</tr>
</tbody>
</table>

**Mounting structure:**
- Hot dip galvanized MS/ anodized aluminum of size, not less than 50 mm x 50 mm x 6 mm size shall be used for mounting the modules/ panels/arrays. Each structure should have an angle of inclination as per the site conditions to take maximum irradiation.
- The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels. Installation of solar structures should not damage the roof in any way. If any concrete or foundation is required, it should be pre-cast type.

**DC combiner box/Array junction box:**
- The junction boxes are to be provided in the PV array for the termination of connecting cables. The Junction Boxes (JBs) shall be made of GRP/FRP/Powder Coated Aluminium/cast aluminium alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JBs shall be such that input & output termination can be made through suitable cable glands.
- Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification.

**Battery:**
- Lead acid
- All the batteries should have a C/10 rate of discharge. The voltage of each battery should be 12 V.
- Battery should conform to the latest BIS/ International standards. A copy of the relevant test certificate for the battery should be furnished.
- The battery should be warranted for a minimum of 5 years.
- The battery should be installed inside the premises of consumers on a Battery rack of acid resistant material to bear the required battery load. The non-reactive acid proof mat should be provided around the floor space of battery bank.

**Protections:**
- Over voltage (automatic shutdown)
- Under voltage (automatic shutdown)
- Overload - Short circuit (circuit breaker & electronics protection against sustained fault)
- Over Temperature
- Battery, PV reverse polarity

**Indicators:**
- Array on
- MPPT charger on
- Battery connected, charging
- Inverter ON
● Load on solar/ battery
● Grid charger on
● Load on Grid
● Grid on
● Fault

**Display Parameters**

- Charging current
- Charging voltage
- Voltage of PV panels
- Output voltage
- Grid voltage
- Inverter loading (kW) & Energy Generation (kWh)
- Output frequency
- Fault / fault code

**Cooling: Air Cooled**
The PCU/ inverters should be tested from the MNRE approved test centers / NABL /BIS accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

**Protections**
The system should be provided with all necessary protections like earthing, Lightning, and grid islanding as follows:

**Lightning protection**
The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc. The entire space occupying the SPV array shall be suitably protected against Lightning by deploying the required number of Lightning Arrestors. Lightning protection should be provided as per IEC 62305 standards.

**Cables**
Cables of appropriate size to be used in the Project shall have the following characteristics:
- Cables, junction box & switches should be IP65 protected
- Temp. Range: −10°C to +80°C.
- Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- Flexible
- Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire Project to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.
- The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. twenty-five (25) Operational Years.

**Tools & tackles and spares**
After completion of installation & commissioning of the power plant, necessary tools & tackles shall be maintained by the successful bidder for maintenance purpose.
Safety measures:
The bidder shall take entire responsibility for electrical safety of the installation(s) and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.

General:

<table>
<thead>
<tr>
<th>Data’s to be displayed and logged</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature of cold room,</td>
<td></td>
</tr>
<tr>
<td>Humidity inside cold room,</td>
<td></td>
</tr>
<tr>
<td>Solar generation,</td>
<td></td>
</tr>
<tr>
<td>compressor status,</td>
<td></td>
</tr>
<tr>
<td>TES &amp; Battery level etc.,</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Warranty</th>
<th>1 Years</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>AMC</th>
<th>5 Years</th>
</tr>
</thead>
</table>
ANNEXURE 2 - DETAILS OF THE ORGANIZATION

(Enclose separate sheets as necessary and in this checklist indicate yes or no)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Name and address of the Bidder (With pin code)</td>
</tr>
<tr>
<td>2</td>
<td>Year of starting the organization</td>
</tr>
<tr>
<td>3</td>
<td>Name and Contact number of the Bidder or Point of Contact</td>
</tr>
<tr>
<td>4</td>
<td>Status of Bidder- Proprietorship / Partnership/ Pvt Ltd / Limited/others</td>
</tr>
<tr>
<td>5</td>
<td>GSTIN (Copies of certificate to be enclosed)</td>
</tr>
<tr>
<td>6</td>
<td>PAN No. (Copies of certificate to be enclosed)</td>
</tr>
<tr>
<td>7</td>
<td>Particulars of Physical Infrastructure and total strength of staff available in the organization relating to Supplier/supply/testing etc.,</td>
</tr>
<tr>
<td>8</td>
<td>Bidders Bank details</td>
</tr>
</tbody>
</table>

Signature of the bidder and address with seal

Date:
### ANNEXURE 3 – CONFIRMATION ON ENCLOSURES

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Description</th>
<th>Whether the Document is enclosed or not</th>
<th>Page No. From and to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Details of Organization as per Annexure – 2</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Copies showing the legal status, places of registration and principal place of business of the firm</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Copies of audited financial statements for the last 02 years - 2020-21, 2021-22</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Copies of GST registration and GST returns filed in the last 02 financial years- 2021-22, 2022-23</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Copies of income tax returns filed in the last 2 financial years – 2020-21, 2021-22</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Copy of PAN Card should be submitted</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Acceptance to give 5 years guarantee for trouble free operation and maintenance.</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Letter of declaration to confirm that the bidder has not been black listed by any entity or institution</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Bidder’s bank details</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Signed, sealed copies of Annexure 1, 2, 3, 4 &amp; 5</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Documents to prove implemented projects of average worth Rs. 2 Crore or more in the last 2 financial years – 2021-22, 2022-23</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Data Sheets/Brouchers of PV Module, Battery &amp; Inverter and charge controllers has to be submitted</td>
<td>YES/NO</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Self-Declaration of Specific Make of PV Module, Battery &amp; Inverters and charge controllers that will be used for the project has to be submitted</td>
<td>YES/NO</td>
<td></td>
</tr>
</tbody>
</table>

I abide by all the above terms & conditions.

**SIGNATURE OF THE BIDDER and with office seal**

**PLACE:**
# ANNEXURE 4- SCHEDULE OF TENDER

Regarding Supply, Installation and commissioning of Solar Powered Cold storage units

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Scheduled activity</th>
<th>Within days (no. of days)</th>
<th>Accepted Schedule by date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply starts after WO</td>
<td>30 days</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Supply/Installation of Cold Storage &amp; training</td>
<td>90 Days</td>
<td></td>
</tr>
</tbody>
</table>

I abide by all the commitments accepted & conditions.

SIGNATURE OF THE BIDDER and with office seal

PLACE:

DATE:
ANNEXURE 5 - PRICE SCHEDULE

PARTICULARS TO BE SUBMITTED IN THE FINANCIAL BID (SECOND COVER).


Rates quoted by the bidder:

a. The rates should be mentioned item wise clearly both in words and figures Item-wise details of rates quoted.
b. Rates should be inclusive of GST.
c. Data Sheets/Brouchers of Cold Storage Unit, PV Module, Battery & Inverter and charge controllers have to be submitted.
d. Rates should include an average transportation cost for supply of solution category in the region of operation of the Bidder.

Table 1:

<table>
<thead>
<tr>
<th>SI No</th>
<th>Quote for Option</th>
<th>Qty</th>
<th>Price in Rs/unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solar Powered Post Harvest Loss Management (PHLM) Solution- 80MTCold Storage unit in Mysore, Karnataka</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Solar Powered Post Harvest Loss Management (PHLM) Solution- 40MTCold Storage unit Ahmednagar District, Maharashtra</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Cost in Words (Total price+ total AMC cost): Rupees ______________________________
CONDITIONS:

If our tender is accepted, we hereby undertake to abide as per the stipulated Terms and Conditions to supplier and supply, installation and maintenance of solar energy-based solutions.

We agree to abide by this tender and if the work is awarded to us, in executing the above contract we will strictly observe the laws against fraud and corruption in force in India namely “Prevention of corruption act 1988”.

We understand that you are not bound to determine the price based on the lowest offer that Foundation may receive.

We accept that all disputes between parties will be adjudicated by a competent court in Bangalore, India.

I, __________________________ (Name of signatory) on behalf of the bidder __________________________ (Name of the bidder), hereby certify that I have noted the technical specifications of solutions mentioned in Annexure 1 and the prices quoted above are as per the details specified and in compliance with Annexure 1 and 2.

Dated this……………. day of………….2023

Signature (Name and Address of the Tender with seal) (In the capacity of……………………………….

……………. Duly authorized to sign the Tender for and on behalf of______________________)