Terms of Reference (TOR) for Consultancy Services

Title	**Solarization through On-Grid (Grid-Tied) – Government Owned Large Cold Storages, Bulk Milk Coolers and Chilling Centres – Baseline Assessment, Site Design, Scheme Unlocking, Demonstration Implementation and Impact Assessment**
Location	Karnataka and Maharashtra. Bidders may apply for both states as a single assignment, or as a consortium with a designated lead entity covering both.
Timeline	6 (six) months.
Expected area of expertise	Dairy cold chain and bulk milk cooling technology; refrigeration and thermal energy storage engineering; grid-connected solar PV and net metering; energy audits and load assessment; cooperative dairy sector (Karnataka Cooperative Milk Producers' Federation(KMF)/ Maharashtra State Cooperative Milk Federation Limited(MSCMF) and district milk unions); public finance and scheme design in agriculture, animal husbandry and dairy development; baseline–midline–endline research and MEL; GIS mapping; Kannada and Marathi language field capability.
Apply Link	*https://forms.gle/5LGxHaxBSv5N2qYF8*
Last Date for Apply	5th September, 2026 17.00 hrs

About SELCO Foundation:

SELCO Foundation's mission is to create a platform of solutions that uses sustainable energy as a catalyst to bridge environmental sustainability and poverty alleviation. With holistic development as the primary focus, the organization strives to create equitable societies, where services are accessed by all communities. The interventions of SELCO lead to a sustainable delivery model of essential services like livelihoods, education, and health till the last mile. (Read more about SELCO here: http://www.selcofoundation.org/)

1. About the Programme

Milk is among the most perishable agricultural commodities produced by small and marginal farmers in India. Raw milk must be brought to 4°C within a few hours of milking; beyond that window, bacterial load rises rapidly, acidity develops, and the milk is either downgraded on quality parameters or rejected outright. For a farmer with two or three animals, a single rejected consignment can wipe out several days of margin. Maintaining this cold chain — at bulk milk coolers, chilling centres and larger cold storages alike — is therefore essential, but it comes at a steady and rising electricity cost, since refrigeration equipment runs near-continuously regardless of collection volume.

Both Karnataka and Maharashtra operate three-tier cooperative dairy structures with roots in the Anand pattern promoted under NDDB's Operation Flood, though the two states' structures differ in institutional maturity. In Karnataka, the Karnataka Cooperative Milk Producers' Federation (KMF) works through its District Milk Unions and a network of village-level Dairy Cooperative Societies (DCS) numbering in the thousands, procuring in the region of 80 lakh litres per day, and represents Anand Pattern

implementation with strong federation-level control. In Maharashtra, the **Maharashtra State Cooperative Milk Federation Limited (MSCMF)**, trade name **Mahanand**, works through its District and Regional Milk Unions and village-level Primary Milk Producers' Cooperative Societies, with several hundred chilling centres in operation; Maharashtra's cooperative dairy movement is comparatively more fragmented, with several district unions operating with greater autonomy from the state federation. The exact universe, functional status and existing infrastructure profile — including large cold storages, bulk milk coolers and chilling centres — in both states is to be established by this assignment.

The core problem this assignment addresses is **energy cost, not chilling capacity**: existing bulk milk coolers, chilling centres and large cold storages in both states already run on grid electricity, but tariffs are high and rising, and refrigeration load is a significant and largely fixed component of these facilities' running costs. Three further issues compound this: unreliable three-phase supply forces reliance on diesel gensets at some sites, adding further cost; energy costs per litre chilled or per MT stored are high and increasing year on year; and several facilities carry connected loads that no longer reflect actual, efficiency-optimised running load, meaning both the sizing and the cost of solarisation must be based on measured consumption rather than nameplate rating.

On-grid, grid-tied solarisation of this **existing infrastructure** offers a direct route to reducing that cost. A grid-tied solar PV system — without new refrigeration equipment — offsets daytime grid draw at each site, reducing the net electricity bill under the prevailing net-metering framework, without disrupting the facility's existing chilling or cold-storage operation. The policy environment in both states supports this: Karnataka's Renewable Energy Policy 2022–27 and the KERC Distributed Solar PV (DSPV) framework, which from July 2025 replaced the earlier SRTPV regulations and now permits rooftop, elevated ground-mounted, façade and virtual/group net-metering configurations; and in Maharashtra, the state renewable energy policy framework with **MERC** (Maharashtra Electricity Regulatory Commission) net-metering regulations, MSEDCL as nodal agency, and the four Tata Power-operated distribution utilities (TPCODL, TPWODL, TPNODL and TPSODL).

SELCO Foundation works to demonstrate that decentralised renewable energy, combined with energy-efficient equipment and appropriate design, can make essential services and rural livelihoods reliable, affordable and climate-resilient — and to institutionalise those demonstrations through government schemes and public budgets. Through this assignment, the Foundation intends to build the evidence base on the energy and cost profile of **existing** government-owned bulk milk coolers, chilling centres and large cold storages in Karnataka and Maharashtra, design on-grid solarisation packages sized to offset each facility's measured electricity consumption, demonstrate them at a representative set of sites, and develop a financing and scheme pathway for scale-up by the concerned state departments and federations.

Definition of 'Government-Owned Facility' for this assignment: the scope is restricted to bulk milk cooling units, chilling centres that are owned or operated by the state cooperative dairy federations and their affiliated District/Regional Milk Unions — **KMF** and its unions in Karnataka, **MSCMF (Mahanand)** and its unions in Maharashtra — and large (indicatively 1,000 MT) cold storages that are operated by the **Karnataka State Warehousing Corporation (KSWC)** in Karnataka, and the **Maharashtra State Warehousing Corporation (MSWC)** in Maharashtra and allied government departments — including facilities housed in buildings owned by the union, federation, Gram Panchayat or a government department, and facilities constructed on government or panchayat land or with public scheme funds. Bidders should note that the cooperative structure means 'government-owned' is a matter of degree; the consultant will be required to record ownership precisely for every facility and to propose a defensible inclusion rule at inception, for approval by SELCO Foundation.

2. Objective

Overall objective: To reduce electricity costs and enable low-carbon operation at government-owned large cold storages, bulk milk coolers and chilling centres in Karnataka and Maharashtra through grid-tied solar PV — offsetting the existing electricity bill of these facilities without altering their existing refrigeration equipment or operations — and to create a costed, government-ready pathway for scale-up in both states.

Specific objectives:

- Establish a verified, geo-referenced master database of all government-owned large cold storages, bulk milk coolers and chilling centres in Karnataka and Maharashtra, covering ownership and tenure, building/site condition, connected and running electrical load, existing refrigeration equipment and its condition, electricity connection type and tariff category, and current monthly/annual energy consumption and cost.
- Generate a robust baseline on electricity consumption, cost per unit of output (per litre chilled, per MT stored), grid reliability and diesel-backup dependence at each facility type, against which the impact of solarisation can be measured.
- Develop a prioritisation framework and an evidence-based shortlist of facilities for solarisation in each state, with standardised, replicable on-grid solar system design packages for each facility type (large cold storage, bulk milk cooler, chilling centre) and load band.
- Identify and unlock a viable public financing pathway in each state through which the dairy federations, state warehousing corporations and the concerned departments can fund scale-up of on-grid solarisation, supported by ready-to-use documentation.
- Demonstrate on-grid solarisation at an agreed set of large cold storages, bulk milk coolers and chilling centres, with solar PV systems sized to existing measured load, net-metering interconnection, and a functioning operations-and-maintenance arrangement — with no new refrigeration equipment introduced under this assignment.
- Measure and document outcomes through midline and end-line assessments — principally electricity bill reduction, solar generation offset, impact and payback — and produce knowledge products supporting replication across both states and beyond.
- Implementation Monitoring and Ensuring Handover and other documents collection for the projects. Total target of implementation will be 50 Nos.

3. Scope of Work

The scope is organised into multiple components, to be executed in parallel across both states with dedicated state teams. The consultant is expected to propose refinements to this scope in its technical proposal, with justification.

Note on Hardware cost: unless otherwise stated in the contract, the Hardware cost of solar hardware, civil and electrical works at demonstration sites will be procured and financed separately by SELCO Foundation. The consultant's financial proposal should cover advisory, engineering, supervision, research and project-management services.

Component 1: Baseline Study and Enumeration of Milk Collection Centres

1.1 Desk study and secondary data review

- Review of records held by KMF and its District Milk Unions, MSCMF and its District/Regional Milk Unions, the Karnataka State Warehousing Corporation (KSWC) and the Maharashtra State

Warehousing Corporation (MSWC) for large cold storage assets, the Horticulture Department, APMC-linked cold storages, or NHB-subsidized private/public facilities), Department of Animal Husbandry and Veterinary Services (Karnataka), the Fisheries and Animal Resources Development Department (Maharashtra), the Departments of Cooperation in both states, NDDB and NABARD.

- Review of the cold-chain policy and technical framework: NDDB specifications for bulk milk coolers; BIS IS 12237 and ISO 5708 classification for milk cooling tanks; FSSAI requirements for raw milk handling; the India Cooling Action Plan and the Kigali Amendment schedule for HFC phase-down; and applicable e-waste and refrigerant-handling rules.
- Review of the electricity regulatory framework in both states: Karnataka Renewable Energy Policy 2022–27 and KERC DSPV/net-metering regulations and tariff orders; Maharashtra 's renewable energy policy, MERC (Maharashtra Electricity Regulatory Commission) net-metering regulations and MSEDCL procedures; ESCOM and discom interconnection processes, agricultural/industrial/commercial tariff categorisation applicable to dairy cooperatives, and three-phase supply availability norms in rural feeders.
- Review of prior evaluations, DPRs and scheme documents relating to cold chain investment in the dairy sector in both states, including under NPDD, DIDF, AHIDF, RKVY and NDDB-supported programmes.

1.2 Enumeration of all Bulk milk coolers, Chilling centre & Cold storages in Karnataka and Maharashtra (Scope item: 'List all Bulk Milk Coolers, chilling Centres & Cold storages')

The consultant shall compile a complete, verified and geo-referenced master list of every government-owned milk cooling and chilling centre and cold storages within the agreed inclusion rule, in both states — recording, at minimum:

Data domain	Fields to be captured
Identification	Centre name and code; affiliated District or Regional Milk Union; federation (KMF / MSCMF); State warehousing Cooperation (KSWC/ MSWC); (Village, gram panchayat, block or taluk, district; GPS coordinates; year established; functional or dormant status; contact details of secretary or in-charge.
Ownership and tenure	Building owned by society / union / federation / Gram Panchayat / government department / rented or leased; name of owner; rent payable and lease tenure; land ownership and title status; whether written consent for rooftop or ground-mounted On-Grid PV installation is obtainable; encumbrances.
Building and site (size)	Built-up area and internal layout; plinth and floor condition; roof type (RCC / sheet / tiled) and structural condition; usable and shadow-free roof area; available open or compound area for ground-mounted plant; ventilation; drainage and effluent disposal; water source, availability and quality (critical for clean-in-place); security and enclosure.
Milk volume and membership	Registered and active pourer members, litres procured per day, morning and evening separately; flush-season and lean-season volumes; monthly volumes for the last 24 months; number of collection shifts; peak-day volume; volume rejected or returned with reasons.
Existing chilling infrastructure	Presence, make, model, year, rated capacity and type of bulk milk cooler (direct expansion or ice-bank), refrigerant type and charge, condenser condition, insulation condition, maintenance history and breakdown log; presence of milk analyser, AMCU (Automatic Milk Collection Unit), weighing and testing equipment.
Capacity utilisation	Actual litres chilled per day against rated capacity; utilisation percentage by season; number of cooling cycles per day; idle time; time elapsed from milking to

Data domain	Fields to be captured
	chilling; where no chilling exists, distance and transit time to the nearest chilling centre or BMC and the transport arrangement and cost.
Energy consumption	Discom or ESCOM name; RR / consumer number; tariff category; sanctioned and connected load; single-phase or three-phase supply and phase reliability; 24 months of consumption and billing data; measured or estimated kWh per 1,000 litres chilled; power factor; existing DG set capacity, run hours and monthly diesel expenditure; any existing solar installation. Bill Paid receipt of last 3 months.
Supply reliability	Average hours of supply per day, disaggregated by season and by the morning and evening collection windows; frequency and duration of scheduled and unscheduled outages; voltage fluctuation and phase failure incidence; transformer capacity and loading on the feeder.
Milk quality and loss	MBRT results and other quality test records; average fat and SNF; incidence of curdling, souring and rejection at the chilling centre or dairy; quantity and value of milk lost or downgraded per month; farmer payout rate and any quality-linked deductions.
Operations	Staffing and operator skill level; operating hours; cleaning and CIP practice; record-keeping and digitisation; membership of women's dairy cooperative societies where applicable.

1.3 Field baseline survey

- Physical survey of a statistically defensible, purposively stratified sample of facilities in each state — stratified by milk union/warehousing corporation jurisdiction, agro-climatic zone, capacity/load band, existing refrigeration equipment type, ownership type and supply-reliability class. The sample is to cover large cold storages, bulk milk coolers and chilling centres. The sample design is to be proposed and justified in the inception report.
- Instrumented energy measurement at a sub-sample: data-logging of electricity consumption, connected and running load, refrigeration equipment run hours/duty cycles, and supply availability over a minimum of seven continuous days per site, covering both a peak and a lean/off-season period where the assignment calendar allows.
- Primary data collection from facility operators/caretakers, union or warehousing-corporation engineering and procurement staff, and — for milk facilities — pourer members — including women pourers, operators, and other stakeholders relevant to each facility type — using structured and semi-structured tools in Kannada and Marathi.
- Establishment of baseline values for the agreed indicator set. Indicative indicators: connected and running electrical load; kWh and rupees per unit of output (per 1,000 litres chilled for BMCs/chilling centres, per MT stored for large cold storages); electricity tariff category and monthly bill; diesel/backup litres and expenditure per month; refrigeration asset utilisation and seasonal occupancy pattern; hours of downtime attributable to power failure; and baseline GHG emissions from grid electricity consumption.
- Digitisation of all data into a GIS-enabled, filterable database and dashboard, handed over in open, non-proprietary formats (CSV / GeoJSON / shapefile) with a full data dictionary.
- Compliance with informed consent, data minimisation and the Digital Personal Data Protection Act, 2023 in all primary data collection.

Component 2: Identification and Prioritisation of Milk Collection Centres

- Develop, with SELCO Foundation and the federations, a transparent multi-criteria prioritisation framework. Indicative criteria: current milk volume and demonstrated growth potential; quality loss

and rejection burden; absence or inadequacy of existing chilling; distance and transit time to the nearest chilling point; severity of the electricity reliability deficit and three-phase availability; technical feasibility (roof and ground area, structural condition, water availability); tenure security and ease of obtaining consent; institutional health of the society (active membership, governance, payment discipline); share of women and small/marginal producers; cost per litre of installed chilling capacity; and replicability of the archetype.

- Apply the framework to the full enumerated universe in both states to produce a weighted, ranked list, classified into Tier 1 (immediately ready), Tier 2 (ready with remediation — for example load augmentation, structural repair or water provision) and Tier 3 (not currently feasible), with reasons recorded for each classification.
- Distinguish explicitly between the three facility types in scope, since each carries a different existing refrigeration setup, load profile and solarisation approach: (i) large cold storages (indicatively 1,000 MT capacity), typically with higher connected load, multiple compressors and chamber-wise refrigeration; (ii) bulk milk coolers, typically single-unit refrigeration with an agitator and, in some cases, ice-bank thermal storage; and (iii) chilling centres, typically multi-compressor systems with chilled-water/glycol circulation, ice-bank storage and CIP/wash-water heating loads. In every case, the assignment is limited to on-grid solarisation of the existing, measured electrical load — no new, upsized or replacement refrigeration equipment is to be evaluated, designed or procured under this assignment.
- Recommend a shortlist of demonstration sites for Phase-1 implementation, selected to represent the principal archetypes, volume bands, intervention types and geographies so that findings are generalisable.
- Conduct a validation workshop in each state with the federation, the concerned district milk unions and SELCO Foundation, to secure agreement on the framework, the ranked list and the demonstration shortlist.
- Obtain and support SELCO Foundation in obtaining, administrative approvals, society resolutions, owner consents and site access permissions for the shortlisted centres.

Component 3: Site Assessment and Design Options

3.1 Detailed site assessment

- Detailed energy and cold-chain audit at each shortlisted facility: measured load profile across the operating cycle (morning/evening collection windows for bulk milk coolers and chilling centres; commodity in/out and turnover cycle for large cold storages); cooling load calculation based on actual and projected milk volumes and, for cold storages, actual and projected stored tonnage, commodity type and mix, storage temperature and humidity requirement, and seasonal occupancy pattern (including idle/off-season periods); pull-down time requirement; ambient temperature profile; and identification of critical versus non-critical loads.
- Efficiency-first assessment before any sizing: condenser cleaning and siting, insulation integrity, variable-frequency drives, high-efficiency compressors and motors, waste-heat recovery for clean-in-place hot water, LED lighting, and correction of poor power factor. Generation and chilling capacity must be sized against the post-efficiency, volume-validated load — not against nameplate aspiration.
- Electrical infrastructure assessment: three-phase availability and reliability, sanctioned versus required load, transformer capacity and feeder loading, need for load augmentation or a dedicated transformer, internal wiring and earthing adequacy, and protection coordination.
- Structural assessment of the roof or mounting surface with reference to IS 875 (wind and imposed loads), including a qualified engineer's certification of adequacy or a specification of the

strengthening required; for coastal and cyclone-prone districts of Maharashtra & Karnataka, wind-loading and cyclone-resilience requirements shall be applied explicitly.

- Water availability and quality assessment for cleaning and CIP, and effluent disposal arrangement.
- Shadow analysis, solar resource assessment and generation simulation (PVsyst, Helioscope or equivalent), with documented specific yield and performance ratio.

3.2 Design options and technical documentation

For each site, and for each facility type (large cold storage, bulk milk cooler, chilling centre) and load band, the consultant shall develop and comparatively evaluate the following on-grid configurations — in every case sized to the facility's existing, measured connected and running load, with no new, upsized or replacement refrigeration equipment introduced:

- Grid-tied (on-grid) rooftop solar PV under net metering, sized to offset daytime load at the facility, for sites with adequate roof area and structural capacity.
- Grid-tied ground-mounted or elevated canopy/shade-structure solar PV under net or gross metering, where roof area or structural capacity is inadequate or unavailable — particularly relevant for large cold storages with extensive shed roofing or adjoining open land.
- Virtual or group net-metering configurations where a union campus, warehousing corporation compound, or cluster of facilities within the same jurisdiction can share a single connection or aggregate their solar credits.
- Cluster-based procurement and installation across multiple nearby facilities of the same type (e.g., several bulk milk coolers or chilling centres within a district, or multiple large cold storages under the same warehousing corporation division) to achieve tendering and installation cost efficiencies, even where each site's solar system remains independently sized and metered.

Deliverable-grade documentation for each design shall include:

- MNRE/ALMM requirements and IS 14286 / IEC 61215 / IEC 61730 for modules; IEC 62109 for inverters; and applicable BIS standards for balance of system, cabling, mounting structures and protection.
- Single-line diagram, layout and equipment drawings, foundation and mounting details, earthing and lightning protection scheme (IS/IEC 62305).
- Capital cost estimate, one-year and levelized cost of solar generation per unit, simple payback and net present value against the facility's baseline electricity bill.
- Regulatory and approval pathway per site: discom feasibility and interconnection, net/gross-metering application, load augmentation or tariff re-categorisation where required, KREDL or MSEDCL/MERC registration where applicable, meter change, and owner, panchayat, union or warehousing-corporation NOC, with expected timelines for each.
- Remote monitoring and IoT specification capturing solar generation, grid import/export and facility electricity consumption, with data visible centrally to the union, federation or warehousing corporation — this supports bill verification and O&M, not a food-safety requirement in this context.
- Provisions for solar module/inverter end-of-life management in compliance with the E-Waste (Management) Rules, 2022. (Refrigerant handling is out of scope, since no refrigeration equipment is being installed or modified under this assignment.)
- A standardised 'On-Grid Solar Package' for each facility type and load band — a repeatable specification, drawing set and indicative cost that the federations and warehousing corporations can tender directly at scale.

Component 4: Unlocking Scheme, Financing and Institutionalisation

This component is the principal route to scale and should be treated as central rather than incidental to the assignment. It must be executed separately for each state, since the institutional and budgetary routes differ.

- Map all plausible funding sources in both states, including: the National Programme for Dairy Development (NPDD); the Dairy Processing and Infrastructure Development Fund (DIDF) through NABARD; the Animal Husbandry Infrastructure Development Fund (AHIDF); Rashtriya Gokul Mission; RKVY; National Cooperative Development Corporation (NCDC) lending; NDDB programme support; PM-KUSUM Component C and MNRE grid-connected rooftop solar support where applicable; state plan budgets of the Department of Animal Husbandry and Veterinary Services (Karnataka) and the Fisheries and Animal Resources Development Department (Maharashtra); Departments of Cooperation; federation and union internal accruals and reserves; NABARD RIDF and Climate Change Fund; District Mineral Foundation funds; 15th Finance Commission untied grants; CSR from dairy, banking, cooperative and corporate sources; and climate, carbon or results-based finance where the emissions and food-loss case supports it.
- Assess and compare delivery and ownership models — federation or union CAPEX; society-owned with grant support; RESCO / OPEX with third-party ownership of the solar asset; Cooling-as-a-Service and pay-per-litre-chilled models; ESCO models monetising energy savings; and blended grant-plus-loan structures — with a risk, control, tariff and value-for-money analysis of each in the regulatory context of each state.
- Build a financial model for scale-up in each state: total capital requirement by tier and volume band, phasing options, annual O&M liability, avoided energy and diesel expenditure, value of milk loss averted, incremental procurement volume and its margin contribution, and the resulting payback at society, union and federation level, with sensitivity analysis on milk volume, tariff, capital cost and utilisation.
- Prepare government-ready documentation for each state: a scheme concept note; a draft note for administrative or cabinet approval; a Detailed Project Report for the priority tranche; a proposed budget-line formulation; and model tender documents, technical specifications and evaluation criteria compliant with the Karnataka Transparency in Public Procurements Act, 1999 and the Maharashtra General Financial Rules and e-procurement requirements respectively.
- Design the institutional mechanism for sustainability: nodal officer and reporting structure within each federation; a dedicated recurring O&M budget line; AMC contracting approach; asset registration in union books; vendor empanelment and a local service-technician network capable of handling the chosen refrigerant; monitoring dashboard ownership; operator training pipeline; and grievance redressal.
- Conduct structured stakeholder engagement and advocacy with KMF, MSCMF, the district milk unions, the concerned line departments, KREDL, MSEDCL and the relevant ESCOMs and discoms, including at least two consultation workshops per state.

Target outcome: at least one funding pathway secured in principle in each state, evidenced by a written commitment, an approved note, inclusion in a budget proposal or an equivalent formal step by the concerned federation or department.

Component 5: Implementation of Grid-Tied Cold Storage / Bulk Milk Coolers & Chilling Centres

- **Support SELCO Foundation and/or the federation/warehousing corporation in procurement:** preparation of the RFP or tender, BoQ, technical evaluation criteria, vendor pre-qualification and empanelment, bid evaluation and negotiation support — for solar PV equipment and balance-of-system components only.
- **Supervise installation at each demonstration facility:** pre-dispatch inspection of solar modules, inverters, mounting structures and balance-of-system components; verification of make, model, serial

numbers and ALMM listing; civil and structural works supervision (mounting structure foundation, roof/ground reinforcement where required); adherence to electrical safety protocols; and photographic and written documentation of every stage. (No refrigeration equipment is procured, inspected or handled under this assignment.)
- **Complete electrical enabling works where the audit identifies them as prerequisites:** load augmentation or tariff re-categorisation liaison, internal wiring for the solar interconnection, earthing, lightning protection, and distribution board (ACDB/DCDB) upgrades required specifically for the solar installation.
- **Manage testing, commissioning and regulatory closure:** solar generation performance testing against design estimate, net/gross-metering approval and bi-directional meter installation, discom sign-off, and a commissioning certificate for each site.
- **Establish O&M:** a five-year comprehensive AMC or equivalent covering the solar PV system (modules, inverter, mounting structure, cabling, monitoring); a defined generation-performance SLA (indicatively not less than 90% of estimated generation, with agreed de-rating for panel soiling/ageing) with a fault-response time of 48–72 hours; guaranteed spare-parts availability for inverters and critical components; a trained local service network; and a service ticketing and escalation process. (Existing refrigeration equipment's own AMC, if any, remains with the facility owner and is outside this assignment's scope.)
- **Commission and configure remote monitoring** capturing solar generation, grid import/export and facility electricity consumption, with fault alerts, and hand over dashboard access to the union/federation, the warehousing corporation (for cold storages) and SELCO Foundation.
- **Build capacity:** hands-on training for facility operators/caretakers and union or warehousing-corporation engineering staff on safe operation of the solar system, basic troubleshooting, generation record-keeping and fault reporting; a bilingual user manual and quick-reference card at each site in Kannada or Marathi as applicable; refresher training before handover.
- **Complete formal handover:** asset tagging, entry in the union's or warehousing corporation's asset register, warranty and insurance documentation, as-built drawings and O&M manuals for the solar system.

Component 6: Midline Study

- Conduct the midline assessment approximately 60–90 days after commissioning, using the tools and indicators established at baseline to ensure comparability.
- Assess technical performance: actual solar generation versus design estimate, performance ratio, grid import/export balance, system availability, and fault and downtime analysis, disaggregated by facility type (large cold storage, bulk milk cooler, chilling centre).
- Assess operational and cost outcomes: change in the facility's grid electricity consumption and bill, share of load offset by solar, diesel/backup expenditure where applicable, net-metering credit realisation, and facility operator practice around the solar system (e.g., basic upkeep, fault reporting).
- Identify teething problems, design or specification gaps, sizing errors and behavioural issues, and issue a time-bound corrective action plan with clear ownership.
- Feed findings back into the standardised design packages and the scale-up documentation prepared under Components 3 and 4 — the midline is a course-correction instrument, not merely a reporting exercise

Component 7: End-line Study (6 months after completion of implementation) (To be quoted separately)

- Conduct the end-line assessment six months after completion of implementation, replicating the baseline instruments to permit a valid pre-post comparison at the same facilities, with a comparison group of non-intervened facilities of similar profile where feasible.
- Quantify outcomes against baseline: grid electricity consumption and cost per unit of output (per litre chilled for BMCs/chilling centres, per MT stored for large cold storages); solar generation realised versus design estimate; diesel/backup expenditure displaced; system uptime and downtime; GHG emissions abated (energy pathway); and satisfaction of facility operators and caretakers with the solar system, disaggregated by gender and social group where operator-level data permits.

- Capture a full seasonal cycle where possible, covering both peak and lean operating periods for each facility type — flush and lean milk season for BMCs/chilling centres, and peak-storage versus off-season/idle periods for large cold storages — since solar utilisation and payback vary sharply with each facility's actual seasonal load.
- Undertake a cost-benefit and value-for-money analysis, including realised payback at facility, union/warehousing-corporation and federation level, and the fiscal case for scale-up in each state.
- Assess sustainability: O&M functioning in practice, uptime achieved against the generation-performance SLA, responsiveness of the service network, facility-operator capability retained, and institutional ownership within the union, federation and warehousing corporation.
- Produce revised, evidence-corrected design and cost benchmarks and a final scale-up recommendation for each state.
- Timing note: an end-line six months after completion of implementation cannot fall within an eight-month total assignment — implementation is expected to conclude around Month 7. This component is therefore structured as an optional extension of the same contract, expected around Month 14, to be triggered by written notice from SELCO Foundation and priced separately in the financial proposal (see Section 8, Payment Terms).

Component 8: Knowledge Management, MEL and Dissemination (cross-cutting)

- Develop a Monitoring, Evaluation and Learning framework at inception — theory of change, indicator matrix with definitions, means of verification, data collection protocols and quality-assurance procedures — approved by SELCO Foundation before any data collection begins.
- Produce photographic and video documentation of representative centres, before and after, with appropriate consent.
- Produce a minimum of four site-level case studies (at least two per state) and one policy brief per state suitable for circulation within government and the federations.
- Produce a replication toolkit: standardised designs, specifications, model tender documents, survey instruments, costing templates, operator training material and the O&M protocol, released as open-source material in English, Kannada and Marathi as appropriate.
- Facilitate one state-level dissemination workshop in each state, and one cross-state learning exchange.

Cross-cutting requirements (applicable to all components)

- Two-state delivery: the consultant shall deploy a dedicated state team in each of Karnataka and Maharashtra with local language capability (Kannada and Marathi), under a single team leader accountable for consistency of method, tools and quality across both states. Tools, definitions and indicator constructs must be identical across states, and across all three facility types (large cold storages, bulk milk coolers, chilling centres), so that findings are comparable.
- Gender and social inclusion: all sampling, tools, analysis and reporting shall disaggregate by gender and social group. Particular attention shall be paid to women's dairy cooperative societies and to women pourers and facility operators, for whom access to reliable, low-cost electricity and consistent facility uptime materially affect their livelihoods.
- Institutional coordination: the consultant shall work through the protocols of KMF, MSCMF and the concerned district unions, the Karnataka State Warehousing Corporation (KSWC), the Maharashtra State Warehousing Corporation (MSWC) and other concerned departments, keep SELCO Foundation informed of all official communication, and shall not make commitments to any government body, federation or warehousing corporation on behalf of the Foundation.
- Site access and operational continuity: all field activity — audits, measurements, installation and testing — at bulk milk coolers and chilling centres shall comply with FSSAI hygiene requirements and the union's own protocols, and at all facility types shall be scheduled and conducted so as not to disrupt live milk collection or cold-storage operations.
- Data protection, ethics and safeguarding: informed consent, data minimisation, secure storage, compliance with the Digital Personal Data Protection Act, 2023, and adherence to SELCO Foundation's safeguarding and PoSH requirements for all field teams.

- Field safety and insurance: the consultant is responsible for the safety, transport, accommodation and insurance of its own personnel, including work at height, near live electrical equipment, and during installation and testing of solar PV systems.
- Risk management: maintain a live risk register — delayed approvals, discom interconnection and net-metering timelines, monsoon and cyclone disruption in coastal Maharashtra, seasonal load variation (milk-volume seasonality for BMCs/chilling centres; storage-occupancy seasonality for large cold storages) distorting measurement, facility governance or ownership changes, vendor and EPC performance, solar equipment supply chain and technician availability, and module/inverter price volatility — with mitigation measures reviewed at every monthly review.

4. Roles and Responsibilities

Role of SELCO Foundation (SF)	Expectation from Bidder / Consultant
Overall programme direction; approval of inception report, methodology, tools, inclusion rule, sample design and site shortlist.	Deliver the full scope in both states to professional standard, on time, with its own teams, instruments and logistics.
Share SELCO Foundation's design standards, technical benchmarks and prior learning from decentralised cold chain and solarisation work.	Undertake day-to-day institutional liaison in both states, obtain site access, society/facility resolutions, owner consents and regulatory approvals, and keep SF informed.
Technical review and sign-off of designs, BoQs, cost estimates and study reports; nominate a Programme Lead as single point of contact.	Apply these standards; propose deviations only with written technical justification and SF approval.
Arrange or approve capital financing for demonstration-site equipment and hold vendor contracts where SF procures directly.	Submit all deliverables in draft for review, incorporate feedback within 7 working days, and maintain a version-controlled deliverable log.
Convene review meetings; participate in stakeholder workshops; support advocacy with the federations, warehousing corporations and departments.	Prepare all workshop content and documentation; organise logistics in both states; produce minutes and action-tracking.
Approve knowledge products and authorise external dissemination.	Prepare all workshop content and documentation; organise logistics in both states; produce minutes and action-tracking.
Release payments against accepted deliverables per the agreed schedule.	Produce case studies, policy briefs, toolkit, training material and photo/video documentation to publication standard.
Provide access to relevant SF datasets, contacts and prior studies.	Raise invoices with supporting documentation; maintain auditable records of all expenditure and field data.
	Treat all data as confidential; hand over all raw data, tools, logger files, code and databases in open formats at closure.
	KMF, MSCMF (Mahanand), district/regional milk unions, the Karnataka State Warehousing Corporation (KSWC), the Maharashtra State Warehousing Corporation (MSWC), line departments, KREDL, MSEDCL, MERC and the discoms where required.

5. Deliverables

All deliverables are to be submitted in English (with Kannada and Marathi versions of field tools, operator manuals and site-level material), in editable formats, with underlying data. Every study deliverable must present findings for each state separately as well as in combination. Timelines are counted from the date **of contract signing.**

Sl.No	Deliverable	Timeline	Acceptance criteria
1	Inception Report — refined methodology, agreed inclusion rule defining 'government-owned', MEL framework and indicator matrix, sample design for both states, survey instruments (English, Kannada, Marathi), work plan, risk register, two-state team deployment plan, stakeholder engagement plan.	Month 1	Approved in writing by SF; tools pilot-tested in both states before roll-out.
2	Master Database of Large Cold Storages, Bulk Milk Coolers and Chilling Centres — Karnataka and Maharashtra; geo-referenced, with ownership, building, connected/running electrical load, existing refrigeration equipment, utilisation, and energy consumption fields populated; GIS dashboard; data dictionary; open formats.	Month 2	Complete coverage of the agreed universe in both states; ≥95% field completeness on core fields; spot-check verification passed.
3	Baseline Study Report — desk study, field survey findings, electricity consumption and cost baseline, load and utilisation analysis, facility-type typology; state-wise and combined.	Month 2	Sample achieved as approved; instrumented measurement completed; indicator values traceable to raw data; report accepted by SF.
4	Prioritisation Framework and Ranked Facility List — weighted scoring model, Tier 1/2/3 classification by state, facility-type classification (large cold storage / bulk milk cooler / chilling centre), and recommended Phase-1 demonstration shortlist; validation workshop held in each state.	Month 3	Framework endorsed by SF, KMF, MSCMF, KSWC and MSWC; shortlists approved.
5	Site Assessment and Design Report — energy audits, structural and electrical assessments, comparative design options, technical specifications, BoM/BoQ, drawings, cost estimates, levelised cost of solar generation and payback, approval pathway; standardised 'On-Grid Solar Packages' by facility type and load band.	Month 3	Designs technically reviewed and signed off; costs benchmarked; drawings complete and buildable.
6	Scheme Unlocking and Financing Strategy — state-wise funding source map, delivery-model comparison, scale-up financial model, scheme concept note, draft approval note, DPR for the priority tranche, model tender documents, institutional and O&M mechanism (dairy federations for BMCs/chilling centres; warehousing corporations for large cold storages).	Month 4	Government-ready documents for both states; at least two consultations held per state; SF acceptance.

Sl.No	Deliverable	Timeline	Acceptance criteria
7	Implementation Completion Report — commissioned demonstration facilities with commissioning and generation-verification test certificates, as-built drawings, net-metering approvals, monitoring configured, AMC in place, operators trained, assets tagged and handed over.	Month 5	All agreed facilities commissioned and generating to specification; documentation complete per site; training attendance recorded.
8	Midline Study Report — performance versus design, consumption and cost outcomes, fault analysis, corrective action plan, and revisions to the standard design packages.	Month 6	Report accepted; corrective actions assigned with owners and dates.
9	Final Consolidated Report and Knowledge Products — synthesis of Components 1–6 across both states, four case studies, two policy briefs, replication toolkit, operator training material, photo/video assets, full raw data and tool handover; dissemination workshop in each state with KMF, MSCMF, KSWC and MSWC.	Month 6	All materials accepted by SF; workshops conducted; complete data handover verified.
10	End-line Study Report (optional extension) — pre-post comparison against baseline in both states, seasonal analysis, cost-benefit and VfM analysis, sustainability assessment, revised benchmarks and final scale-up recommendation.	Month 12 (6 months post-completion)	Comparable to baseline methodology; findings evidenced; accepted by SF.

In addition, the consultant shall submit a brief monthly progress report (maximum four pages, with a state-wise deliverable tracker, risk register update and expenditure summary) and participate in a monthly review meeting with SELCO Foundation.

6. Selection Criteria

The agency will be selected on a combined technical and financial evaluation. Proposals must score a minimum of 70% on the technical components (1–5 below) to be considered for financial evaluation.

Evaluation Component	Criteria Focus	Weighting (%)	Required Evidence in Proposal
1. Technical understanding and methodology	Grasp of the dairy cold-chain problem, cooperative structures in both states, and the milk-quality/energy interaction; soundness of the proposed approach to enumeration, audit, design and impact measurement.	20%	Technical approach note; sample design; draft indicator matrix; illustrative survey instrument; instrumented measurement plan.
2. Cold chain and refrigeration engineering capability	Demonstrated experience in energy audits and electrical load assessment of refrigeration-based facilities (bulk milk coolers, chilling centres, or large cold storages); grid-tied solar PV design and net/gross metering integration; and sizing solar systems against	20%	At least two comparable completed assignments with client references, scale and outcomes; sample design/BoQ (redacted as needed); certifications held.

Evaluation Component	Criteria Focus	Weighting (%)	Required Evidence in Proposal
	measured connected and running electrical load.		
3. Research, MEL and analytical capability	Capability to design and execute multi-state baseline–midline–endline studies; statistical rigour; instrumented data collection; GIS and data management.	15%	Two sample research reports; data-quality protocols; GIS/database capability; evidence of multi-state field research.
4. Dairy sector and public finance engagement	Track record with cooperative dairy federations, NDDB/NABARD-funded programmes, or state departments on scheme design, DPRs, budget lines or procurement documentation.	15%	Evidence of prior dairy-sector, scheme or DPR work; named references; proposed engagement strategy for KMF and MSCMF.
5. Two-state delivery capacity and team	Quality and availability of key personnel; genuine field presence in both Karnataka and Maharashtra; Kannada and Marathi language capability; credible plan to run parallel state teams and deliver within six months.	10%	CVs with time allocation; organogram showing both state teams; office/field presence in each state; language capability of field staff.
6. Financial proposal and value for money	Completeness, realism and transparency of costing; person-day rates; state-wise cost split; cost per centre surveyed and per centre implemented.	20%	Completed financial templates (Sections A–E) with HR-day breakdown and state-wise split.
TOTAL		**100%**	

Minimum eligibility (screening — pass/fail):

- Entity legally registered and operating in India for a minimum of three years (company, LLP, partnership, registered society, trust or Section 8 company), or a consortium with a clearly designated lead entity holding full accountability.
- Valid PAN, GST registration and statutory compliance; audited financial statements for the last two financial years.
- At least two completed assignments of comparable scope and scale in the last five years, at least one involving cold chain, refrigeration or dairy infrastructure, and at least one involving solar/DRE for productive or institutional use.
- Demonstrable field presence and local-language capability in both Karnataka and Maharashtra (directly or through a declared consortium partner).
- Not blacklisted or debarred by any central, state or semi-government body, or by any public sector undertaking.
- Availability of key personnel covering, at minimum: a Team Leader/Project Manager; a Refrigeration and Cold Chain Engineer; a Solar PV/Electrical Engineer; a certified Energy Auditor; a Structural/Civil Engineer; an MEL/Research Specialist; a GIS/Data Analyst; a Policy and Public Finance Specialist; and State Coordinators with field enumerators in each state.
- Full disclosure of any commercial relationship with solar equipment manufacturers, module/inverter suppliers, or EPC contractors

Submission Requirements

Interested collaborators (individuals, teams, or agencies) are requested to submit the following before the deadline:

1. **Organizational / Individual Profile:** Overview of the organisation, legal status, registration documents, statutory registrations, audited financials for the last two years, consortium arrangement where applicable, and relevant institutional experience.
2. **Proposed Approach:** A technical document setting out your understanding of the **electricity-cost and energy-efficiency challenge at large cold storages, bulk milk coolers and chilling centres** in Karnataka and Maharashtra and your proposed strategy to execute the scope — covering the enumeration and inclusion rule, sampling and instrumented measurement methodology, **energy audit approach, on-grid solar design and net/gross-metering strategy**, scheme-unlocking approach for each state, implementation supervision, and the baseline–midline–endline measurement design. Include a work plan with a Gantt chart, a risk register, and a stakeholder engagement plan for both states.
3. **Relevant Portfolio:** Examples of previous work on **on-grid/grid-tied solar PV for agricultural, dairy or cold-chain facilities, energy audits of refrigeration-based facilities**, decentralised renewable energy for productive use, cooperative sector or warehousing-corporation engagement, government scheme design, or large-sample multi-state field research — with client references and evidence of outcomes.
4. **Team Composition:** CVs of all key personnel, an organogram showing the two state teams and the central quality function, person-days committed by each, and confirmation of availability for the assignment period.
5. **Financial Proposal:** Detailed quotation for the entire scope using the templates provided in this ToR, with a state-wise cost split and the end-line extension quoted separately.

Please ensure your application directly addresses your capability to own end-to-end execution across research, **solar PV and energy engineering**, institutional engagement and implementation supervision, simultaneously in two states. Agencies are asked to account for flexibility in time allocation and in the number of sites within the given duration of the assignment.

Note: Applicants are required to submit applications through the link provided. Each application should detail the plan, methodology, and deliverables specific to the requirements mentioned in the scope of work.

7. Intellectual Property

All final outputs, datasets, databases, logger data, survey instruments, designs, drawings, specifications, cost models, training material, templates and visual assets created under this engagement will be the intellectual property of SELCO Foundation and will be freely available for public sharing under an open-source licence. The consultant shall not retain, reuse or publish any project data or output without prior written permission from SELCO Foundation. All raw data, code, GIS layers and editable source files shall be handed over at the close of the assignment in open, non-proprietary formats.

8. Payment Terms

Payment will be deliverable based, made in accordance with the terms agreed between the consultant and SELCO Foundation, and released only against deliverables formally accepted in writing by SELCO Foundation. Please provide your proposal and quotation for the above-mentioned programme requirements, capturing timelines and splitting costs wherever possible.

Tranche	Milestone / Deliverable accepted	Timeline	% of contract value
1	Signing of contract and acceptance of Inception Report (Deliverable 1)	Month 1	20%
2	Acceptance of Master Database and Baseline Study Report for both states (Deliverables 2 and 3)	Month 1	20%
3	Acceptance of Prioritisation Framework and Site Assessment & Design Report (Deliverables 4 and 5)	Month 2	15%
4	Acceptance of Scheme Unlocking and Financing Strategy for both states (Deliverable 6)	Month 3	15%
5	Commissioning of demonstration centres and acceptance of Implementation Completion Report (Deliverable 7)	Month 4	10%
6	Acceptance of Midline Study, Final Consolidated Report, knowledge products and full data handover (Deliverables 8 and 9)	Month 6	20%
Sub-total — base assignment		**6 months**	**100%**
7	Acceptance of End-line Study Report (Deliverable 10) — optional extension, triggered by written notice	Month 12	50% - 50%
TOTAL			**100%**

TDS will be deducted as applicable. Travel and field costs, if reimbursable rather than lumpsum, must be pre-approved and supported by original documentation.

9. Application Process

If your enterprise meets the eligibility criteria and is interested in collaborating with the SELCO Foundation, please complete the application form linked below with the required information. Agency / Consultant are requested to upload their technical proposals and financial quotations directly into the application form.

Provide split costs as per deliverables based:

Please provide your proposal and quotation as per deliverables based and mentioned programme requirements. Capture Timelines and Split cost wherever possible, including a separate cost split for Karnataka and Maharashtra.

10. To Apply

Interested consultants / organisations, with relevant experience (please include samples and/or references of 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 undertake for this project, including budgets (with break-ups and explanation), timelines and milestones, and submit the same to the Google form https://forms.gle/5LGxHaxBSv5N2qYF8 on or before 5th September, 2026 17.00 Hrs.

Any further queries please write to procurement@selcofoundation.org with a subject line:

" On-Grid Solarization – Large Cold Storages, Bulk Milk Coolers and Chilling Centres – Karnataka and Maharashtra " (Name of Project)

Financial Proposal Template: Budget Breakdown & HR Allocation

Collaborators are requested to use this template to provide a transparent breakdown of the costs associated with the assignment. All amounts in INR, exclusive of GST (indicate GST separately). Costs must be split between Karnataka and Maharashtra wherever they are state-specific.

Section A: Studies, Design and Strategy (Lump Sum by Deliverable)

Deliverable	HR days – Karnataka	HR days – Maharashtra	Key personnel deployed	Proposed cost (INR)
A.1 Inception, MEL framework and tool development (Del. 1)	[Input]	[Input]	[Input]	[Input]
A.2 Enumeration and master database, both states (Del. 2)	[Input]	[Input]	[Input]	[Input]
A.3 Baseline field survey, instrumented measurement and report (Del. 3)	[Input]	[Input]	[Input]	[Input]
A.4 Prioritisation framework and ranked lists (Del. 4)	[Input]	[Input]	[Input]	[Input]
A.5 Site assessment, cold-chain and energy audits, design packages (Del. 5)	[Input]	[Input]	[Input]	[Input]
A.6 Scheme unlocking, financial model and DPRs, both states (Del. 6)	[Input]	[Input]	[Input]	[Input]
A.7 Midline study (Del. 8)	[Input]	[Input]	[Input]	[Input]
A.8 Final report, knowledge products and dissemination workshops (Del. 9)	[Input]	[Input]	[Input]	[Input]
TOTAL SECTION A	**[Input]**	**[Input]**		**[Input]**

Section B: Implementation Support (Unit Cost per Centre)

Advisory, engineering and supervision services only. Equipment supply and EPC to be quoted separately in Section D if the consultant intends to execute the works.

Activity / unit of output	Qty (no. of centres)	HR days per centre	Cost per centre (INR)	Total cost (INR)
B.1 Detailed cold-chain and energy audit, site survey	[Input]	[Input]	[Input]	[Input]
B.2 Detailed engineering design, drawings and BoQ	[Input]	[Input]	[Input]	[Input]
B.3 Procurement and tender support	[Input]	[Input]	[Input]	[Input]
B.4 Installation supervision and quality assurance	[Input]	[Input]	[Input]	[Input]

Activity / unit of output	Qty (no. of centres)	HR days per centre	Cost per centre (INR)	Total cost (INR)
B.5 Pull-down testing, commissioning, net-metering and discom approvals	[Input]	[Input]	[Input]	[Input]
B.6 Operator training, manuals and site material	[Input]	[Input]	[Input]	[Input]
B.7 Monitoring and temperature-logging configuration and handover	[Input]	[Input]	[Input]	[Input]
TOTAL SECTION B				**[Input]**

Section C: HR Allocation and Management

Role / personnel title	Description of responsibility	Total days on assignment	Rate per day / total (INR)
Team Leader / Project Manager	Overall delivery across both states, client communication, institutional engagement, quality control.	[Input]	[Input]
Refrigeration / Cold Chain Engineer	Energy audit, load assessment, and on-grid solar PV system sizing based on existing refrigeration load at bulk milk coolers, chilling centres and large cold storages.	[Input]	[Input]
Solar PV / Electrical Engineer	Solar system design, sizing, drawings, net metering, load augmentation, commissioning oversight.	[Input]	[Input]
Certified Energy Auditor	Load profiling, instrumented measurement, efficiency recommendations.	[Input]	[Input]
Structural / Civil Engineer	Roof and mounting structural assessment and certification; cyclone-resilience design in coastal Maharashtra.	[Input]	[Input]
MEL / Research Specialist	Study design, indicators, analysis, baseline–midline–endline reporting.	[Input]	[Input]
GIS / Data Analyst	Database design, geo-referencing, dashboard, data quality.	[Input]	[Input]
Policy and Public Finance Specialist	Scheme mapping, financial model, DPR, tender and approval documentation for both states.	[Input]	[Input]
State Coordinator – Karnataka	Field management, KMF and union liaison, Kannada-language interface.	[Input]	[Input]
State Coordinator – Maharashtra	Field management, MSCMF and union liaison, Marathi-language interface.	[Input]	[Input]

Role / personnel title	Description of responsibility	Total days on assignment	Rate per day / total (INR)
Field Enumerators (both states)	Primary data collection across districts.	[Input]	[Input]
TOTAL SECTION C		**[Input]**	**[Input]**

Section D: Travel, Logistics and Other Direct Costs

Item	Unit / basis	Quantity	Cost (INR)
D.1 Field travel – Karnataka (districts, trips, mode)	[Input]	[Input]	[Input]
D.2 Field travel – Maharashtra (districts, trips, mode)	[Input]	[Input]	[Input]
D.3 Inter-state travel and coordination	[Input]	[Input]	[Input]
D.4 Accommodation and per diem	[Input]	[Input]	[Input]
D.5 Energy data loggers, temperature loggers and measurement instrumentation	[Input]	[Input]	[Input]
D.6 Workshops and consultations (2 per state + 2 dissemination + 1 cross-state exchange)	[Input]	[Input]	[Input]
D.7 Translation (Kannada, Marathi), printing, training material and documentation	[Input]	[Input]	[Input]
D.8 Software licences, dashboard hosting	[Input]	[Input]	[Input]
D.9 Optional: solar PV equipment / EPC (only if executed by consultant — quote separately per site)	[Input]	[Input]	[Input]
TOTAL SECTION D			**[Input]**

Section E: Total Contract Value Summary

Description	Karnataka	Maharashtra	Total (INR)
A. Studies, design and strategy cost (Section A)	[Input]	[Input]	[Input]
B. Implementation support cost (Section B)	[Input]	[Input]	[Input]
C. HR / management cost (Section C)	[Input]	[Input]	[Input]
D. Travel, logistics and direct costs (Section D)	[Input]	[Input]	[Input]
E. Contingency (e.g., 5% of A+B+C+D)	[Input]	[Input]	[Input]
F. SUB-TOTAL — BASE ASSIGNMENT (8 months)	**[Input]**	**[Input]**	**[Input]**
G. End-line Study (optional extension, Month 14)	[Input]	[Input]	[Input]
H. GST as applicable			[Input]
I. TOTAL PROPOSED CONTRACT VALUE (F + G + H)			**[Input]**

Note: If there is travel required, kindly mention the tentative budget along with the number of days of travel. Bidders should note that field work spans multiple districts in two states and should cost travel, inter-state coordination and instrumentation realistically.

Refer Terms and Conditions:

1. Sub-contracting

In the event that the Consultant requires the services of subcontractors to perform any obligations under the Contract, the Consultant shall obtain the prior written approval of the Foundation. Any rejection or non-performance of the subcontractor shall not, in and of itself, entitle the Consultant to claim any delays in the performance, or to assert any excuses for the non-performance, of any of its obligations under the Contract, and the Consultant shall be solely responsible for all services, obligations and deliverables performed by its subcontractors.

2. Quality Assurance

The data submitted to SELCO Foundation should be accurate, complete, reliable and relevant. Consulting agency shall establish additional layers for data cleaning and submission.

3. Financials & Reporting

TDS will be deducted on the fixed amount as per Income Tax Act and Rate of Percentage. In accordance with the Central Board of Direct Taxes circular No. 7 of 2022 dated 30th March, 2022 in relation to the clarifications with respect to Section 114AAA of the Income-tax Rules, 1962, failure to link Aadhar number to the PAN card and/or failure by any person, who falls within the income tax bracket or otherwise, to file tax returns in relation to payment of TDS for any service (in accordance with Section 206AB and 206AA) and/or an inoperative PAN card will result in a 20% tax deduction.

4. Indemnification

Both parties shall indemnify and hold its Trustees, Directors and representative officers, employees, agents harmless from and against any and all claims, demands, actions, losses, liabilities, charges, damages, costs and expenses (including but not limited to reasonable attorney's fees) arising out of or resulting from (1) any claims arising in connection with activities undertaken by both parties in connection with the project or (2) Consultant's gross negligence or willful misconduct or breach of any undertaking, covenant, representation or warranty contained in this agreement and/or the actual infringement of any patent, trademark, copyrights, trade secret or any other intellectual property right of the third party.

5. Patent, Copyright and other Proprietary Rights

i. Except as is otherwise expressly provided in writing in the Contract, the Foundation shall be entitled to all intellectual property and other proprietary rights including, but not limited to, patents, copyrights, and trademarks, with regard to products, processes, inventions, ideas, know-how, or documents and other materials which the Consultant has developed for the Foundation under the Contract and which bear a direct relation to or are produced or prepared or collected in consequence of, or during the course of, the performance of the Contract. The Contractor acknowledges and agrees that such products, documents and other materials constitute works made for hire for the Foundation.

ii. Subject to the foregoing provisions, all documents, reports, recommendations, documents, and all other data compiled by or received by the Consultant under the Contract shall be the property of the Foundation, shall be made available for use or inspection by the Foundation at reasonable times and in reasonable places, shall be treated as confidential, and shall be delivered only to the Foundation's authorized officials on completion of work under the Contract.

iii. The Consultant will treat all information given to him/her as information with proprietary value and will not disclose the same to competitors or any outsiders. The Consultant will not at any time, except under legal process, divulge any trade or business secret relating to the Foundation or any customer or agent of the Foundation, which may become known to him by virtue of his position as

consultant, save in so far as such disclosure shall be necessary 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 Foundation.

iv. Reports or other data that are developed specifically for the performance of this Contract shall be the property of the Foundation and the Consultant shall deliver reports and data to the Foundation as per the milestones. Dissemination of the reports and any information from the said contracts shall be done with written approval from the Foundation.

6. Publicity, use of name & Logo of the Foundation

The Consultant shall not advertise or otherwise make public for purposes of commercial advantage or goodwill that it has a contractual relationship with the Foundation, nor shall the Consultant, in any manner whatsoever use the name, emblem, logo or official seal of the Foundation or that of SELCO in connection with its business or otherwise without the written permission of the Foundation.

7. Observance of Law

Compliance with Laws and Regulations: The Consultant will comply with all applicable laws, rules, regulations and statutory requirements and amendments thereof, in the manufacture and distribution of products and supplies and in providing services to SELCO and during the term of this Agreement.

Child Labor: The Consultant will ensure that neither it, its parent entities, partners or subcontractors nor any of its subsidiary or affiliated entities (if any) is engaged in any practice inconsistent with the rights set forth in the Child Labour (Prohibition and Regulation) Act of 1986, which, inter alia, requires that a child shall be protected from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

Forced Labor: The Consultant will not engage in any activity that will result in forced or compulsory labor under applicable laws including the Bonded Labour System (Abolition) Act, 1976.

Abuse of Labor: Consultant will act in accordance with applicable laws and regulations and will not violate the rights of labourers as stated in The Factories Act, 1948 and similar legislations.

Working Hours, Overtime, Wages and Other Benefits: Working hours, wages and benefits shall be provided by the Consultant to its staff and employees in accordance with applicable laws including the Minimum Wages Act, 1948.

Declaration of blacklisting: Consultant represents and warrants to SELCO that, as on the date of signing of this Purchase Order, it is neither blacklisted/debarred nor is it under a declaration of ineligibility by Central/State or Semi-Government Organization/Department or Institutions and Public Sector Undertakings in India and abroad. The Consultant further undertakes to duly inform SELCO in the event it is blacklisted subsequent to execution of this Purchase Order.

Compliance with Anti-bribery Laws: Consultant and each of its directors, officers, employees, agents or other (collectively referred to as "Consultant") represent and warrant that it shall not either directly or on behalf of SELCO Foundation give, offer, promise to offer, or authorize the offer, directly or indirectly (proxy bribing), anything of value (such as money, shares, goods or service, gifts or entertainment) to government officials, government customers, potential government customers or foreign government officials including officials of any public international organizations or officials of any political party either in India or abroad ("Officials") with an intent to influence any act or decision in his or her official capacity, induce the Official to do or omit to do any act in violation of his or her lawful duty to obtain any improper advantage, or induce such Official to use his or her influence improperly to affect or influence an act or decision.

The Consultant shall not provide any offering, promising, giving or receive, solicit or accept a financial or other advantage, or any other thing of value, with the intention of influencing or rewarding the behaviour of a person in a position of trust to perform a public, commercial or legal function to obtain or retain a commercial advantage.

The Consultant understands and acknowledges that any non-adherence to the warranty as stated herein above will be a violation of the provisions of the Indian Prevention of Corruption Act, 1988 and other applicable laws and legislations ("Anti-bribery Laws"). In addition, Consultant agrees to promptly report to SELCO Foundation any incident of breach or potential breach of this section.

Compliance with Sexual Harassment of Women (Prevention, Prohibition & Redressal) Act, 2013 (PoSH): The Consultant shall agree to adhere to the mandates prescribed under the Sexual Harassment of Women (Prevention, Prohibition & Redressal) Act, 2013, which requires all workplaces to have a Policy and Internal Committee to address complaints of sexual harassment that women may face at the workplace.

8. Termination

Either party may terminate this contract by giving a notice in writing to the other party stating their intention to terminate the same on the expiration of Seven (7) days from the date of such notice. In addition, the Foundation may also terminate this contract forthwith in the event of any fraud, misconduct or neglect of duties on the part of the Consultant. Any notice to be given hereunder shall be sufficiently given to the Consultant if forwarded by registered post or by Courier Service to the last known postal address of the Consultant and shall be sufficiently given to the Foundation if similarly forwarded to the registered office. Upon the termination of this contract and payment of the said fees due up to such termination, and payment of all disbursements and out-of-pocket expenses incurred up to the date thereof (provided the same have been incurred after obtaining prior approval), the Consultant shall deliver all deeds, documents and paper in his possession relating to the business of the Foundation or as the Foundation shall direct, and shall continue to afford all reasonable assistance for concluding pending matters at the date of such termination without making any charge thereof.

9. Force Majeure

i. Force majeure as used herein means any unforeseeable and irresistible act of nature, any act of war (whether declared or not), invasion, revolution, insurrection, terrorism, or any other acts of a similar nature or force, provided that such acts arise from causes beyond the control and without the fault or negligence of the Consultant.

ii. In the event of and as soon as possible after the occurrence of any cause constituting force majeure, the affected Party shall give notice and full particulars in writing to the other Party, of such occurrence or cause if the affected Party is thereby rendered unable, wholly or in part, to perform its obligations and meet its responsibilities under the Contract. The affected Party shall also notify the other Party of any other changes in condition or the occurrence of any event which interferes or threatens to interfere with its performance of the Contract. Not more than fifteen (15) days following the provision of such notice of force majeure or other changes in condition or occurrence, the affected Party shall also submit a statement to the other Party of estimated expenditures that will likely be incurred for the duration of the change in condition or the event of force majeure.

iii. On receipt of the notice or notices required hereunder, the Party not affected by the occurrence of a cause constituting force majeure shall take such action as it reasonably considers to be appropriate or necessary in the circumstances, including the granting to the affected Party of a reasonable extension of time in which to perform any obligations under the Contract.

iv. If the Consultant is rendered unable, wholly or in part, by reason of force majeure to perform its obligations and meet its responsibilities under the Contract, the Foundation shall have the right to

suspend or terminate the Contract on the same terms and conditions as are provided for in this Contract.

v. Both the Foundation and the Consultant fully and freely intend to create an independent Contractor relationship under this Contract. Nothing herein shall be deemed to establish a partnership, joint venture, association or employment relationship between the parties. Both parties agree that the consultant has the right to sole and exclusive control over the manner and means employed in performing their activities under this Contract.

10. Settlement of disputes

i. The Parties shall use their best efforts to amicably settle any dispute, controversy, or claim arising out of the Contract or the breach, termination, or invalidity thereof.

ii. Any dispute, controversy, or claim between the Parties arising out of the Contract or the breach, termination, or invalidity thereof, unless settled amicably, within sixty (60) days after receipt by one Party of the other Party's written request for such amicable settlement, the matter shall be referred by either Party to arbitration in accordance with the Arbitration and Conciliation Act, 1996. The venue of the arbitration shall be at Bangalore. Likewise, the jurisdiction will vest with courts in Bangalore.

Annexure 1: Master Database — Large Cold Storages, Bulk Milk Coolers and Chilling Centres — field list and data dictionary (as set out in Component 1.2), with the agreed inclusion rule defining 'government-owned'.

Annexure 2: Site Assessment Data Capture Format — energy audit sheet, connected/running load worksheet, existing refrigeration equipment condition and utilisation checklist, electrical and three-phase availability checklist, roof/ground and structural checklist, photographic record protocol.

Annexure 3: Baseline–Midline–Endline Indicator Framework — indicator definitions, means of verification, frequency, seasonal adjustment, disaggregation and responsible party.

Annexure 4: Technical Specification Benchmarks — minimum acceptable standards for solar PV modules (IS 14286 / IEC 61215 / IEC 61730), inverters (IEC 62109), mounting structures, cabling, protection, earthing and lightning protection, and generation monitoring.

Annexure 5: Format for CVs of key personnel and the person-day allocation matrix, showing deployment by state. *(unchanged)*

Annexure 6: Self-declaration of non-blacklisting, conflict of interest (including any relationship with solar equipment manufacturers, module/inverter suppliers or EPC contractors), and PoSH compliance.