

GUJARAT COOPERATIVE MILK MARKETING FEDERATION LIMITED,  
AMUL DAIRY ROAD, ANAND 388001, GUJ ,INDIA.

PUR:CR:871

17-05-2018

**DUE DATE : 06.06.2018**

To,  
(List of approved suppliers)

**Sub : Enquiry for walk in cold storage for Dehradun under buyback**

Dear Sir,

As you may be aware, we, Gujarat Cooperative Milk Marketing Federation Ltd., Anand an apex body of 12 District Cooperative Milk Producers” Unions is engaged in marketing of milk and milk products in India and abroad under the world renowned brand names of “Amul” and “Sagar”, operating with an annual sales turnover of more than 28000 Crores. Cooperative Dairies have become important source of income generation for more than 3.37 million milk producer rural families and providing an employment opportunity for the most vulnerable sections of our population.

We are in the market for annual rates contract for requirement of walk in Cold storages to strengthen good quality cold chain. GCMMF may process own orders for own requirement based on rates finalized for the above .

We are pleased to select you in our list of the Bidder for the above requirement & sending you our enquire under criteria lay down by GCMMF. We may consider offers from those Bidders only, which will meet eligibility criteria & data on firm attach at separate sheet.

Quotations will be accepted by Courier, Personal Delivery, Reg.A.D. All quotations may be addressed to the undersigned at the above address. Please go through all terms and conditions(Annexure –I) and scope of supply (Annexure-II) to ensure conformity for the same. Please ensure that your sealed quotation reaches us before **the due date 06.06.2018**, complete with necessary Annexure, product technical leaflets and heat load sheets.

Thank you,  
Yours faithfully,

HOD (PURCHASE)

**GCMMF LIMITED, ANAND**

(Purchase Division)

Annexure -I

**TERMS AND CONDITIONS FOR SUPPLY OF COLD ROOMS**

**1. VALIDITY :**

Your offer is open for acceptance for a period of 90 days from the date of Quotation. No any price escalation shall be granted up to commissioning of the cold storage after our placing of PO.

**2. SPECIFICATION & REQUIREMENT:**

As per indicative specification sheets attach here with and requirement is anticipated in large quantity.

**3. INVOICES:**

Invoices shall be on the name of respective GCMMF's branch office or union etc under GST billing through your local office shall be accepted to avail GST input credit.

**4. INSTALLATION AND COMMISSIONING OF THE COLD ROOM:**

Cold storage materials shall be dispatched within 3 weeks of receipt of order/ site clearance/drawing approval from Depot. The commissioning of cold rooms must be completed strictly in 2/3 weeks after goods delivered at site. Incase of default, we shall procure the cold storage from alternative sources and any extra cost incurred there from shall be charged to you, apart from levying liquidated damages.

**5. RATE APPROVAL:**

Based on the prices, delivery period, technical scrutiny etc. we may approve rates of single or multiple quantity of cold room for our above requirement. The approved Bidder shall be responsible to complete the turnkey project in a stipulated time frame. Failures of the sub contractor or vendor of the principal approved Bidder will be considered as a failure of the principal approved Bidder, for recovering extra cost apart from levying liquidated damages. Multiple parties acceptance and final decision on which shall be depend on situation and decision of our committee.

**6. EARNEST MONEY DEPOSIT (EMD):**

You will have to deposit Nil by demand draft drawn in favour of Gujarat Cooperative Milk Marketing Federation Ltd., Anand payable at Anand only towards EMD and the

same must accompany the quotation. In case your quotation is not accepted the deposit will be refunded within a month from the date of finalisation. EMD will carry no interest. Please note that Demand Draft payable at places other than Anand will not be accepted nor the quotation will consider valid. No any old EMDs will be transferred for this fresh requirement.

- i. Quotation received without EMD shall not be considered.
- ii. In case we find that you have given any misleading information with regard to your machinery infrastructure as mentioned in your data on firm form, we may forfeit your EMD and also delete your name from our list of approved Bidders.

#### **7. SECURITY DEPOSIT :**

Within 20 days after the Bidder's receipt of notification of award of the Contract, the Bidder shall furnish performance security deposit Rs.1,00,000/- or 3 %of total values of the PO, whichever is less by demand draft drawn in favour of Gujarat Cooperative Milk Marketing Federation Ltd., Anand payable at Anand. Bidders payment shall be released on receipt of the SD only. The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Bidder's failure to complete its obligations under the Contract.

#### **8. PAYMENT:**

- a. Requirement of GCMMF/ Member Unions shall be covered under terms i.e. 70% against delivery 20 % against satisfactory commissioning and balance 10% against perfect handing over report to be certified by depots(including taxes and duties etc).
- b. For the balance 10 % amount Bidder has to provide the installation report /handover report and CMR in prescribed format of GCMMF, along with the SD or PBG as laid down time to time by GCMMF/ Mus .

#### **9. THIRD PARTY INSPECTION OF MATERIALS AND COMMISSIONING WORK:**

Third party inspection to be carried out by supplier . The report duly signed by our branch head to be submitted with invoices . The report shall be covered inspection of the materials to match with the specification as per PO, the commissioning parameter of refrigeration system and cold room, the temperature inside the cold room, preparation of the detail report. All payment as above shall be processed on receipt of third party inspection agent report. No any additional charges to be payable to such agency higher by supplier.

#### **10. WARRANTY / GUARANTEE:**

- a. The Bidder warrants that the goods supplied under the contract are new, unused, of the most recent or current models and incorporate all recent improvements in

design and materials unless provided otherwise in the contract. The Bidder further warrants that the goods supplied under this contract shall have no defect arising from design, materials or workmanship or from any act or omission of the Bidder that may develop under normal use of the supplied goods in the conditions obtaining in the country of final destination.

- b. The Bidder also guarantees that the goods supplied shall perform satisfactorily as per the designed/installed capacity as provided for in the orders.
- c. Warrantee/additional comprehensive warranty period covers with replacement of all operational spares with new & genuine i.e. compressors, filters, fan motors, refrigerant, dryer, door gasket, electrical accessories in refrigeration units i.e. contactor /controllers/motor etc, Heaters, handle & hinges & TO & FRO, commissioning etc. This is all in all warranty means of all consumable and materials etc is inclusive. All usual terms and conditions of AMC as laid down by GCMF will be applicable during additional warrantee period, which will be separately provided to the approved Bidder of cold room.
- d. The comprehensive warranty/guarantee shall remain valid for 12 months & further 48 months after the goods or any portion thereof as the case may be, have been installed at the final destination indicated in the contract otherwise in the special conditions of contract. The seller should have to provide 4 quarterly services per annum, during warranty period regularly as well. All operational spare parts included in the total comprehensive warranty period.
- e. Bidder shall provided 60 months of warrantee/ guarantee on servo voltages stabilizers, and 12 months on data logger, energy meter, air curtain etc & free maintenance/ replacement if any during the warranty period. Quarterly preventive maintenance shall also cover proper services of these units .

#### 11. **GOVERNMENT LEVY:**

- a. Any incremental taxes and levies on account of delay in performance of the PO by the Bidder shall be to the Bidders account. Also, default penalties during delivery of the goods at our destination shall be in Bidders accts. and no extra charges paid for the same.
- b. In case there is any increase/decrease in Government taxes on finished product, the same will be made effective immediately from the date prescribed by the Government subject to provision of supporting documents. In case of variation due to change in turnover of the supplier, landed price shall remain constant and basic price shall vary accordingly.

**12. GENERAL REQUIREMENT:**

Engineering drawing of each Cold Room shall be submitted for approval against the PO. The Bidder shall depute his representative in advance to study the site conditions and discuss the scope of erection work before start of erection work with Depot Incharge .

13. **SITE CLERANCE :** In some cases without clearance of site conditions the cold rooms are installed by Bidders & which is causing malfunctioning of the cold room at a later stage. GCMMF shall not allow such faulty installation of cooling unit/ cold room at distributors end or GCMMF's Depots end. Any expenses incurred at a later stage for the rectification of faulty installations, the same shall be debited to the Bidder. You may like to depute your engineer/ technical representative to be present during checking of the site either of GCMMF or of dealers before the order/ installation of cold room which ever is earlier. Bidder has to issue site clearance certificate along with engineering drawing prepared in Autocadd 2000 along with all necessary dimension of the construction area of cold room , along with their acceptance of this PO within next 4 days.

14. **SCOPE OF WORKS:** Bidder shall undertake positively and independently all the jobs entrusted to them for repair / maintenance of machines. To and fro transportation and insurance for material equipment, tool, labour etc., will be borne by Bidder only during the warrantee/additional warrantee period . Bidder agrees to maintain adequate stock of spares to achieve performance objectives.

**15. PENALTY:**

a) Bidder fails to delivered any order goods or perform service within time period , specified in the contract, we shall deduct from the contract price as liquidated damages sum equivalent to 1% of the delivered price of the delayed goods for each week of delay until actual delivery. The total amount exceed 10 % of contract value, GCMMF may consider termination of contract. Any incremental taxes and levies on account of delay in performance of the contract by the Bidder, shall be in the Bidders Accounts.

b) In case of default, GCMMF shall either procure the material from alternative sources and any extra cost incurred there from shall be charged to Bidder, apart from levying liquidated damages OR may levy penalty on goods received late, from you.

16. Bidder has to forward copy of inspection/quality certification reports of cooling units with delivery. Bidder's warranty certificate should also be as per terms No.9 ( a to e).

17. The default penalties during transit, deliveries etc. shall be in your accounts.

18. The goods supplied against this enquiry confirm our description, specifications, etc. Initial acceptance of the goods on delivery is not the final acceptance of quality. All goods if found substandard during actual use shall be rejected and the Bidder shall replace such rejected goods at their cost and risk within one month from the date of communication of rejection.
19. Bidder shall provide technical services and assistance free of charge regarding repairing etc. if necessary. No separate agency commission is payable to Bidder on this order contract .
20. Bidder shall provide quarterly reports to the GCMMF on machines performance, attendance of complaints etc. in format prescribed by GCMMF time to time .
21. Please download data on firm form from [www.amul.com](http://www.amul.com). Kindly fill up the data on firm form duly in all respect and send us with offer without fail. The quotations received without above information or with incorrect information shall not be considered.
22. The Bidder should have in house production facility with R&D, QC with testing facility. Also prefer to have ISO or equivalent certification.
23. The may be select Bidders which have proven FMCG clients' list & have experienced team for installation & commissioning carried out more than 10 000 CFT cold storage capacity in major metros/ cities of the country. Last four years data to be submitted with offer with cliental' names.
24. Bidders which have professional experience in production, supply, installation, commissioning and in after sales services for more than 5 years may only be enlisted for our prestigious projects, allied requirements and for other direct purchase scheme. The Bidder should have all India after sales services facility. Bidder should capable to offer AMC for other make equipments.
25. An Indian agent of imported equipments has to provide the authorization certificate/ agreement for their principal company that they have authorized franchisees for selling and after sales services facility/arrangement in India, for more than 5 years with them.
26. Approved Bidder will provide quarterly report on number of cold rooms installed in requirement of GCMMF and Distributors end.
27. Bidder should capable to offer complete turnkey project with after sales services support & latest technical know-how. No separate agency / third party will be allowed in execution of the same, against our confirmed purchase order.
28. The eligibility criteria are minimum & are not exhaustive & subjected to further scrutinization by GCMMF. The inclusion of the vendor for enquiry as per the

requirement and decision of GCMMF from time to time.

29. **JURISDICTION**: In case of dispute, Anand shall be the place of jurisdiction incase of GCMMF own orders or place/town of Distributor incase of requirement of Distributors.

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**GUJARAT CO-OPERATIVE MILK MARKETING FEDERATION LIMITED, ANAND**

**-:Tender Notice Inviting offer:-**

Name of Company	Gujarat Co-operative Milk Marketing Federation Limited, Amul Dairy Road,,Anand-388120,TA / Dist: Anand,State: Gujarat
Turn key requirement (Tentative planning )	<p><b>Dehradun :</b> 20000 CFT New cold room requirement under buyback of old 7000 CFT cold room PUF Panels.</p> <ul style="list-style-type: none"> <li>• Supplier has to verify the site condition before submit buyback offer. The old cold room of 7000cft is provided with 3 nos. of 3.5 HP refrigeration units. Out of which, new condensor units replaced in 2 Nos. of refrigeration unit. We may utilize them for our new cold room. Supplier has to reduce the price of the same in the final offer.</li> <li>• Also, old good panels of 60 MM to be re utilized in flooring work. Supplier has to reduce the rates of PUF slabs requirement in flooring and pass on discount value of old PUF Panels to be scrapped.</li> </ul>
Note	<p>Supplier are requested that they should verify the old cold room before offer us for buyback . GCMMF LIMITED- DEHRADUN <b>Existing warehouse location:</b> Mrs.SarikaAgarwal,Khasara,No.333-335,HCL Compound, Niranjapur, SaharanpurRoad,Dehradun-248001 <b>New warehouse location:</b> Mr.PradeepDuggal, Near BPCL Petrol Pump, Pithowala, Shimla By Pass Road Dehradun. Contact person name: <b><u>Shri Aswinkumar 9548138623</u></b> ( Dehradun Branch Accts Head)</p>
Type of Work	<ul style="list-style-type: none"> <li>• Supply and unloading of the ordered materials of cold room as per time frame.</li> <li>• commissioning, testing, start up, training etc of the cold room in stipulated time frame &amp; carry out third party inspection of materials and performance of cold room.</li> <li>• Supply and commissioning of the miscellaneous items of the cold rooms as approved by us .</li> <li>• Cable laying work from the main tap , cold room electric panel board of cold room etc</li> <li>• Complete handing over with certification of the satisfactory completion of work .</li> <li>• Five years( 1+4 Yrs)of comprehensive warranty shall be provided on cold room refrigeration equipment and servo stabilizers of individual refrigeration unit.</li> </ul>
Bid Reference No (PI write on cover)	<b>PUR/CR/ 871 , dtd: 17-5-2018</b>
Min. period of rate validation once contract awarded	12 Months from the date of approval. The same further extended on mutual agreed terms



<p>Last Date &amp; Time of Quotation submitting in sealed envelop Submission of Hard Copy</p>	<p>Close: <b>As per due date Time: 17:00PM</b> To, Manager (Purchase) Gujarat Co-operative Milk Marketing Federation Limited Amul Dairy Road, Anand-388001, Ta/Dist: Anand, State: Gujarat-INDIA</p>
<p>Technical clarity</p>	<p>Bidder should have to provide the Annexure of <b>technical details, heat load sheet and leaflet of compressor model as follows :</b> The cold rooms to be provided for 55 Deg Cent condensor temperature and -5 Deg Cent evaporator temperature of wet/Butter products cold room and -27 Deg Cent of the frozen product cold room at ambient temp. 46/47 deg.cent</p>
<p>Terms &amp; Conditions</p>	<ul style="list-style-type: none"> <li>• First check list and Technical data shall be analyzed at our end submitted by bidders. After completion of pre-qualified technical stage, we shall analyze commercial offers/bids.</li> <li>• Bidder should have to abide by all terms and conditions mentioned at Annexure-I.</li> <li>• Bidder should have to abide the specification of items mentioned at Annexure-II.</li> <li>• Bidder should have to provide the rates in prescribed Annexure-III &amp; III (A) of miscellaneous items of the excel file</li> <li>• Tech data sheet Annexure- IV excel file.</li> </ul>
<p>Pre bid discussion</p>	<ul style="list-style-type: none"> <li>• Kindly contact well before due date to Shri Devang Shukla, AM (Purchase) Mobile 7359089990/ <a href="mailto:devang@amul.coop">devang@amul.coop</a>.</li> </ul>
<p>Servo stabilizer &amp; data logger uniform supplier base.</p> <p>The servo to be offered for individual refrigeration units with five years of warranty covering all break down calls. Data logger must with one year of warranty</p>	<ul style="list-style-type: none"> <li>• Standardization of the brand , rate , after sales service and quality etc</li> <li>• Only Krycard make servo stabilizer will be offered by cold room bidders.</li> <li>• Contac number Mr Navi ,GM (M9343093001)/ Mr.Binay(M-9377689966)</li> <li>• Gemini Data logger Model TG 4080, Mr Piyush 9374693429</li> </ul>

**GUJARAT CO-OPERATIVE MILK MARKETING FEDERATION LIMITED., ANAND**

**:Check List:**

**The details is to be provided by bidders in prescribed check list format , as below:**

<b>Sr.</b>	<b>Particulars #</b>	<b>Confirmation</b>	<b>Deviation if any</b>
1	Agreed for Terms, Conditions as enclosed (Yes / No)		
2	Agreed for Technical details & data provided in Annexure-II (Yes / No)		
3	Agreed for Commercial rates & data provided in Annexure-III & III (A) (Yes / No)- excel file		
4	The technical detail provided in Annexure IV ( Yes/No)		
5	Details on Turn Over in Crores ( in INR) Yr: 2016-17 Yr: 2015-16 Yr: 2014-15		
6	Earnest Money Deposit (EMD) enclosed . (Yes / No)		
7	Total Installation of frozen cold room & wet cold room more or equal 10000 CFT (Nos) in last 3 years. *		
8	Service network/centre for our proposed destinations with stock of essential spares / parts (Yes / No)*		
9	Business Experience (Years)		
10	Flow chart of the organization with designation to be enclosed *( Yes/ No)		
11	Old cold room and new cold room site visited or not (yes/ No)		
12	Servo stabilizer Kry card make rates with 5 yrs warranty provided ( Yes/No)		
13	5 years comprehensive warranty including all spare parts provided ( yes/no)		
14	PUF Panels own manufacturing ( yes /No)		
15	Refrigeration own manufacturing ( yes/No)		
16	After sales service own arrangement available at our destination of cold rooms( yes/No)		
17	Miscellaneous expenses work sheet filled up(yes/No)		

\*Tabulate format supporting documents related to above information will be provided by bidders.

**Date:**

**Authorize Signature & Seal of the Company**

GUJARAT CO-OPERATIVE MILK MARKETING FEDERATION LIMITED.,ANAND  
(PURCHASE DIVISION)

Annexure-II

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TECHNICAL SPECIFICATIONS AND SCOPE OF SUPPLY:

**FUNCTIONAL REQUIREMENTS :**

The cold rooms shall be used for storage of wet products at 0 to 2 Deg.cent and frozen products at -22 to -24 deg. cent at the ambient temperature of 46 deg. centigrade. The condensor temp. 55 deg.cent and evaporator -5 dec cent for wet(butter) storage where as for frozen cold room evaporator temp. -27 deg.cent.

**1.0 PUF panels :**

The cold room to be provided walk in type with PUF panels having precision cam locking system. The PUF slab of 60 MM to be used for Ante room and 125 MM for frozen & 60 MM for Wet products duly covered with pre painted milky white shade, corrugation type GI sheet of 0.5 mm thickness. The same to be laminated/wrapped by polyethylene and sound corrugated packing. The insulation of the panels shall be done by injection, in situ, of high-density (minimum 40 kg/m<sup>3</sup>, CFC free and environmental friendly) polyurethane/ cyclopentene foam without having any imperfection and hygroscopicity. The gap between panel to panel fitment should be <3 mm only for air tight/leak free joining of panel ideal for cold room. The GI flashing of outside and inside covering corners, wall and roof joining. Wall panels are to be inserted in U profile channels touching on the floor. U profile must for proper fitting and alignment of wall panels on the floor. Bidder will provide hatch channels work for the roof panels at time of commissioning only.

Swing or sliding Door : Open / Close type with safety release knob ,pesi seal door closer, heater, magnetic gasket suitable for opening direction as per site condition. Opening of door ( left or right) as per site condition, The kick sheet to be provided on the door and frame of the door

**2.0 Roof panel support structure :**

The roof panel support structure (as per separate photograph attach) shall be provided by Bidder as a standard supply item and no separate charge will be payable for the same. The structure work worked out such a way that no bending/ deflection will be observed in future. The rates (BOM) of structure work will be provided with miscellaneous expense of the cold room.



The bending, sagging in of roof panels will be treated as manufacturing defect of panels for period of ten years from date of commissioning of the cold room. In such case, Bidder will have to provide free replacement of defective panels.



100 MM thick \* 300 MM height brick guard wall with paint of yellow and black shade as shown in the picture will be provided by supplier to support wall panels moving or sagging outside due to impact load on wall panels sometimes. As shown in picture the wall must be tightly and in touch of panels to be provided without fail. The miscellaneous expense should be provided with brick wall 4 sides in tight support for wall panels.

The rates (BOM) of structure work will be provided with miscellaneous expense of the cold room.

### 3.0 Refrigeration Unit

The refrigeration system is designed for operation on R404 refrigerant for hermetic sealed Scroll compressors. The condensing units shall meet the latest safety standards. The condensers must be provided with powder coated metal sheet enclosure/cover for long life.

The cooling capacity (BTUH) of condenser unit and evaporator units shall remain same capacity. example .. In case of condenser unit deliver 40000 BTUH capacity - The evaporator capacity should remained same capacity.

- 3.1 **Compressor** - Hermetically sealed - EMERSON / DANFOSS make scroll compressor only complete with drive motor. The motor is fully enclosed suitable for specified electrical supply. It is confirmed that the hermetic is provided with thermostat temperature sensor for protection against excess heating due to over loading and short-circuiting.
- 3.2 **Condenser** – Air-cooled, screen protected compact condenser unit make EMERSON / DANFOSS comprising of Finned copper Tube Heat Exchanger in suitable gauge and in several rows. Condenser fans of reputed make are fitted for the duty. The air circulation fans shall be induced draft type that will ensure blowing the air from inside to outside thereby making the system suitable for dusty and dry areas. Condenser plate is laser welded for all capacity cooling , thus offering prolonged life compared to the regular spot welded evaporators. The single phase preventer and contactors must provided for protecting from electric fluctuation. One number Switchgear each i.e. contactors and overload relay for the motor of compressor, condenser and agitator.
- 3.3 **Receiver** - A suitable size liquid receiver is included in the circuit of each condensing unit that would hold the refrigerant during maintenance and otherwise during the pump down cycle at the end of operation.
- 3.4 **Thermostatic Expansion Valve** – A thermostatic expansion valve shall be maximum operating pressure (MOP) type to ensure optimum quantity of refrigerant to the evaporator.
- 3.5 **Evaporator**- The total evaporator area is individually connected with condenser. Multiple evaporator unit having one condenser will not be allowed. Evaporator plate is laser welded for all capacity cooling having copper tubes of heat exchangers , thus offering prolonged life compared to the regular spot

welded evaporators. The evaporator units must be provided for proper cooling capacity. Pri coated GI sheet or SS sheet cover/encloser must.

**3.6 Refrigerant Pipes & Fittings and Controls-** Compressors are provided with isolation valves to ease the maintenance. Copper tubing having appropriate gauges for refrigerant shall be properly laid to facilitate attending the leakage if occurred during operation without dismantling the total system. All pipes are properly clamped on fixed support and sponge insulated for protection.

**4.0 Electric control panel for Refrigeration System or cold room-**

Following electrical panel component to be supplied & commissioned by approved party, as an integrated part along with cold room unit. The elect. panel is pre wired to terminal connections and shall comprise of the following:

1. Main Incomer and Main MCB.
2. Scannar for Protection of 3 Phase devices against Over voltage, Under voltage, Single Phasing, Reverse Phasing & unbalance supply are one of the major issue in electrical systems.
3. Individual MCBs ( individual for evaporater and condensor unit)
4. IS standard GI cover Powder ctd

Refrigeration control panel shall be conforming to following specifications:

This panel shall be suitable to tap the incoming State Electricity Board supply or main electric control panel and feed the refrigeration unit.

Main MCB will be cover total connection load of the Refrigeration system and other cold room equipment. receive power from main control panel or main tap.

Digital Voltage scanner model protects 3-phase Load against Phase failure and Phase Reversal. It is designed to monitor the incoming 3-phase AC supply voltage. The fault relay contacts trips under the abnormal conditions and it can be used to trip the external 3 phase load such as compressor, motor, transformer, pump or EM contactor operating on 3-phase AC supply.

Individual four pole MBCs for condensers and evaporator units must be provided. The phase indicator LED light (R-Y-B lamps), red off, green on and amber tripping light. Ammeter and voltmeter to be included. Contactors, ammeter, voltmeter, energy-meter, frequency-meter, push buttons etc.

The BOM to be provided for the above requirement in miscellaneous expense quote format.

**5.0 Voltage stabilizer (servo type) and single phase preventer:**

Supplier will responsible for thoroughly checking of voltg. condition at site before ordered out on their vendor. The system should have servo Voltage stabilizer conforming 30 % higher capacity compared to connecting refrigeration unit. Servo stabilizer shall be provided individual for each refrigeration unit. The detail specification as follows:

<b>Description</b>	<b>Specification sheet</b>
<b>Micro controller based digital Servo Controlled Voltage Stabilizer</b>	
Capacity	30 % higher capacity to be provided against the connecting load of the refrigeration units
High Input Voltage range	300-480 volt- 3 ph / 170-280- single ph
Output Voltage (settable)	415 volt / 220 V
Output regulation	+/- 1%

Frequency	47 Hz- 53 Hz
Correction rate	60 V /Sec
Efficiency	98%
Wave form distortion	Nil
Digital Controller	Single Micro processor based for 3 phase control with independent motor control for each phase with LCD display, metering and diagnostics and output voltage settable through controller menu
Input Protections	1. MCB / MCCB 2. High & Low Voltage Cutout - using 3 pole Power contactor. Relay will not be accepted
Output Protections	Micro controller based - using 3 pole Power contactor. Relay will not be accepted. For following 1. Adjustable High voltg. Cut off with settable time delay 2. Adjustable Low Voltg. Cut off with settable time delay 3. Short circuit protection 4. Over load protection 5. Single phase preventor
Indications	1. Input On 2. Output On 3. Low Voltage cut off 4. High Voltage cut off
Metering :Digital /LCD	0-500 V AC Voltmeter to read input voltage and output voltage for each phase (L-N) and Line - Line also. Individual current of each phase (Output) to be displayed also. Analog or LED meter will not be accepted for 3 phase stabilizers.
Ambient temp	0-55 C
Humidity	95% RH
Cooling	Natural Air
Mounting	Unidirectional wheel
Incomer	MCB/MCCB and Power Contactor
Outgoing	Power contactor
Bypass switch	EB- Servo Change over switch
Standard	As per IS 9815
Surge suppressor	EMI/ RF Filter
Connection	Incomer star Outgoing star /delta

**6.0 Cables & Electrical Switch Gears, Lighting arrangement:** The electrical switchgears as required are included in the Refrigeration control panels board mentioned. All power and control cabling between Refrigeration system (indoor & outdoor) through Refrigeration electrical panel shall be flexible un-armoured, wherever laid through conduits. The conduits shall be heavy -duty PVC type. The rates of such cable inclusive in the erection charge.

Cold room inside vaporized LED lighting arrangement for visibility of the products will be in the scope of supplier. The rates of the cold room must to be provided including the appropriate lighting fitting etc arrangement having vaporized LED bulbs for long life.

#### **7.0 Guiding bars inside of cold room :**



For protection of wall panels the fitting of the guiding bar is must. The same is required 4inches distance parallel with inner wall panels . The 4" (Inch)diameter MS pipe section painted with black and yellow colour to be fitted near of wall panels for protection of wall panels complete from inner side . The BOM to be provided for the above requirement in miscellaneous expense quote format.

#### **8.0. Operation Manual:**

One set of operation & maintenance manual in English containing complete details of starting, putting off, critical checks and day-to-day maintenance of the complete system shall be supplied. The manual shall also have the required electrical circuit diagrams.

Bidder shall submit a detailed general arrangement drawing for complete system giving complete details with bill of materials, size, capacity, quantity, material of construction, thickness etc.

#### **9.0 INSTALLATION, COMMISSIONING & TRAINING:**

##### **9.1 Installation:**

The necessary pre-requisites requirement such as building, water and mains supply shall be available timely by the ordering party as per requirement and shall make necessary arrangements at respective sites to store the dispatched material including its safe custody, in case the site is not ready to take up installation. All modifications and arrangements as suggested by bidder shall be made in the building as per pre decided time schedule and the work shall be taken up only when the site is complete as per requirement and handed over for installation. The installation of the cold room shall be carried out only after material verification by the ordering party or their nominated inspection party.

##### **9.2 Commissioning:**

The commissioning of the cold room with the performance trial shall be done at each site. In case product is not available in adequate quantity the performance test i.e capacity trial, cooling temp. under 47 DC ambient etc shall be conducted on receipt of product & the results deemed to have concluded the performance trial. The cold room shall only be handed over when above procedures are completed to the satisfaction.

##### **9.3 Training:**

Bidder shall arrange for training of the team for efficient operation and maintenance of the complete system.

**10 SCOPE OF WORK OF BIDDER- (Compilation):**

- Complete commissioning work of the cold room with panels and Refrigeration system.
- Roof panel support structure work ( as per para 2).
- Hatch channel work of the roof panels. Steel trusses/ structure work & hanging rods etc for hanging support of the ceiling panels.(as per point 2 of tech. specification sheet)
- Guiding bars parallel to the panel walls ( internal ). Brick guiding wall having PCC on brick work with white paint. The same should be provided tighten & parallel with outer wall panels 4 sides.
- Electric panel work with earthing for the Refrigeration systems for cold room as per point 4.
- Complete copper armoured cabling of the condensor & evaporator
- Copper armoured cable from main distribution panel to cold room and Servo stabilizers etc.
- Drain line/pipes , dressing and making of PUF panels, U profile of wall panels , digital temp. indicator ,vaporized lighting in chamber etc.
- Complete Kota Stone flooring, Polished on PCC work.
- Refrigeration piping line with sleeves of insulation (supplier will include the charges of extra length).
- Condensor and evaporator Iron structure stands to withstand adequate load of the equipments.

**11 Following work excluded from scope of Bidder:**

However on demand / order or discussion . the same to be organized by approved bidder. For which an advance estimates will require and submitted based on site visit/verification in miscellaneous expenditures , without fail.

- 0-0 level of flooring.
- Provision of any major civil work, masonry work, lighting outside cold room.
- Provision of cabling work from main line/Pole to transformer or main distribution elect panel board.
- Electrical power including earthing to be provided at the incoming feeder of Main Control Panel.









