T E N D E R D O C U M E N T

F O R

BULK MILK COOLERS / D.G. SETS / SERVO VOLTAGE STABILISER / WEIGHING MACHINE

E.M.D. :	**BULK MILK COOLER**	**– Rs.2,00,000.00**
	D.G. SETS	**– Rs. 50,000.00**
	SERVO VOLTAGE STABILISER	**– Rs. 10,000.00**
	WEIGHING MACHINE	**– Rs. 10,000.00**

Cost of Tender Document - Rs.1,050.00

Sale of Tender Documents up to 24.02.2015 at 1.00 PM
Submission of filled in Tender Documents up to 24.02.2015 at 5.00 PM

Opening of Tender at 11.00am on 25.02.2015

Name of the Tender:

_____

Address:_____

_____

_____

TELEPHONE NO._____

FAX NO:_____

THE CUTTACK CO-OPERATIVE MILK PRODUCERS UNION LTD.

Mahanadi VIhar, PO- Nayabazar, Dist.- Cuttack – 753004, Odisha
Phone : 0671 – 2440040 / 2442047, Tele Fax : 0671-2442047
Visit us : www.cdcmu.com E-mail : cdcmpu@gmail.com

CUTTACK MILK UNION

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PHONE : 0671 – 2440040, 2442047.

Visit us : www.cdcmu.com E-mail : cdcmpu@gmail.com

TENDER NOTICE – 01/2015

The Cuttack Co-operative Milk Producers Union Ltd., invites sealed Techno-Commercial bid from reputed Manufactures / Authorized distributor for Supply of Bulk Milk coolers/ DG set / Servo stabilizer / Weighing Machine for supply , Installation, testing Commissioning and trail run of the same at different unit of OMFED.

Tender document can be purchased from The Cuttack Milk Union Office between 10.00 hrs to 16.00 hrs on all working days from 09.02.2015 to 24.02.2015 on payment of Rs 1000/- +5 % VAT (Rs 1050/-) per set by cash or D/D in favour of "The Cuttack Cooperative Milk Producers' Union Ltd.", payble at Cuttack drawn on any Nationalized Bank.

The sealed techno-commercial bid along with EMD value (Inside commercial bid) shall be received at the above office address up to 24.02.2015 at 1700 hrs. The bid shall be opened on 25.02.2015 at 11.00 AM. For details please visit our web site www.omfed.com or www.cdcmu.com.

General Manager Cuttack Milk Union reserves the right to accept or reject any or all tender or part thereof without assigning any reason.

THE CUTTACK CO-OPERATIVE MILK PRODUCERS' UNION LTD.

Mahanadi Vihar, Nayabazar, Cuttack – 753 004

Phone : 0671 – 2440040 / 2442047, E-mail : cdcmpu@gmail.com

The Cuttack Co-operative Milk Producers' Union Ltd. invites sealed tender in the prescribed forms from the Manufacturers / Authorised distributors / Authorised agencies for supply of Bulk Milk coolers/ DG set / Servo stabilizer/ weighing machine for supply , Installation, testing Commissioning and trail run to the Cuttack Co-operative Milk Producers' Union Ltd., Mahanadi Vihar, Nayabazar.

SALE OF TENDER FORMS

Specification with terms and conditions and Tender Form are obtainable from the office of the undersigned on payment of Rs.1,000.00 (Rupees one thousand only) + VAT @ 5%. The same may also be obtained by post on payment of Rs.1,100.00 (Rupees one thousand one hundred only) + VAT @5% in shape of Bank Draft issued in favour of "The Cuttack District Co-operative Milk Producers' Union Ltd." payable at Cuttack. The cost of tender paper is compulsory and the receipt so obtained against payment should be enclosed in original along with tender papers. The cost paid for tender paper is non refundable. The same may also be downloaded from OMFED website www.omfed.com or www.cdcmu.com and the cost of Tender document of Rs.1,000/- (non-refundable) + VAT @5% should be paid by attaching a Bank Draft prepared as mentioned above with it.

The tender document may be obtained from 10.00 AM to 4 PM on all working days except on the last date of receipt of tender paper as per the following time schedule. The General Manager, Cuttack Milk Union shall in no way be responsible for loss of tender documents dispatched by post/courier delivery and also for any delay in delivery to the addressee.

Date of commencement of sale of tender document	- 09.02.2015
Last date & time for sale to tender documents	- 24.02.2015 at 1.00 PM
Last date & time for receipt of tender	- 24.02.2015 at 5.00 PM
(Technical bid and price bid in separate sealed covers)	At-The Cuttack Co-operative Milk Producers Union Ltd., Mahanadi Vihar, Nayabazar, Cuttack-4
Date & time of opening of tender	- 25.02.2015 at 11.00 AM At-The Cuttack Co-operative Milk Producers Union Ltd., Mahanadi Vihar, Nayabazar, Cuttack-4

(The tender papers will be sold on working days only. The tender Paper will be opned on the scheduled dates in presence of tenderers / their authorized representatives)

ELIGIBILITY

A. For Participation in the Tender.

1 The Tenderer should be a MANUFACTURER or Authorised Distributor or Authorised Agency having valid Manufacturing Registration of the products.

2 The Instruments & Equipments shall be supplied by the firm within the stipulated time as will be intimated in the purchase order ensuring quality as per the approval of Purchase Committee, failing which the EMD / Security Deposit furnished by the approved firm will be forfeited and performance of the firm shall be considered unsatisfactory and the Tender of the firm will not be entertained in future.

3 The outside Manufacture/ Distributor/ Agencies if selected for award of contract shall either open their branches and obtain VAT Registration in the State of Odisha or their supply shall be regulated as per FD circular no.48317 (230)/ F dt.23.11.2010.

4 The supportive Documents attached to the Tender shall be verified by the Screening Committee of the Directorate along with the original documents who will report in details on the eligibility of the Tenderers for further examination by the Purchase Committee. The Tenderers are required to produce the original documents for verification by the screening committee (Technical Bid) whenever it is required.

5 There shall be a Technical Committee to assist the Purchase Committee as regards to the quality, usefulness and applicability of Instruments & Equipments for the livestock treatment, production of vaccines, vaccination and functioning of laboratories.

6 After the Technical Bid is opened, the Technical Committee will examine the Technical Bid of the Instruments & Equipments and recommend alongwith its comments for approval by General Manager, Cuttack Co-operative Milk Producers Union Ltd., Cuttack for further consideration of the Purchase Committee for opening of Price Bid.

7 The Tenderer must have not been blacklisted by any Govt. Offices/ Govt. undertakings / organizations. In case it is detected later on that the participant firm is a blacklisted one, the Tender submitted by such Tenderer will be rejected forthwith and Earnest Money and or Security Deposit will be forfeited to Government in addition to such legal action will be taken as may be deemed fit and proper. The Tenderer should submit a declaration in this regard.

B. <u>For submission of Tender</u>

There shall be two Bids for verification of the offers of the Tenderers by the Purchase Committee and Technical Committee constituted for the purpose.

<u>Technical Bid</u>

1. The Tenderer must have 3 years experience in supply of Vety Medicines / Chemicals / Instrument & Equipments / Bulk Milk coolers / DG set / Servo stabilizer / weighing machine for supply, Installation, testing Commissioning and trail run at National and International level to Government/ Semi Govt. Organizations, PSUs, UNO Agencies.
2. The Tenderer should mention clearly the details of the Manufacturer/ manufacturing address of the Vety Medicines / Chemicals / Instrument & Equipments / Bulk Milk coolers / DG set / Servo stabilizer / weighing machine for supply, Installation, testing Commissioning and trail run to satisfy the requirement against the exact location of the Manufacturer for further correspondences by the General Manager whenever required.

3. The Tenderer should mention the status of the Manufacturer such as ISO-9001-2008 / ISI mark etc.

4. The quality, durability, guarantee / warranty and AMC of the product should be item wise specified for examination of the Purchase Committee.

5. The Tenderer should also quote the details of special preferences / Performances of the Instruments & Equipments to be supplied.

The Tenderer should enclose the detailed information for the above points in the format vide annexure-IV.

The Tenderer should submit the offer for Technical Bid in a sealed cover separately.

All the documents as required in the terms and conditions of this Tender shall be enclosed to the Technical Bid by the Tenderer excepting the Price Bid.

Price Bid

The Tenderer should quote the price of each item separately in separate sealed cover in the prescribed format as enclosed vide Annexure-II to be inserted in the Tender Box of Price Bid.

If the Tenderer does not qualify himself in the Technical Bid, the Price Bid will not be entertained. In case of unsuccessful Bidders for the Technical Bid, Price Bid will be returned as received in the sealed cover without being opened.

Deposit of Earnest Money

I. The tenderers shall deposit earnest money for BMC –Rs.2,00,000/-, DG set-Rs.50,000/-, Servo Voltage Stabiliser – Rs.10,000/- & Weiching Machine – Rs.10,000/- of the quoted value for the tender in shape of Bank Demand Draft. However the earnest money deposited by the tenderers belonging to outside the state of Odisha shall be in favour of "The Cuttack Co-operative Milk Producers Union Ltd.," payable at Cuttack

II. The tenderer shall not be entitled to any interest on the earnest money.

III. The earnest money deposited by unsuccessful tenderers will be refunded without bank interest as early as possible after the tenders are finalized.

IV. Earnest money deposited by the successful tenders shall be retained & will be returned after expiry of the approved list or completion of supply.

V. The EMD will be forfeited if the tenderer withdraws the tender or does not accept the approved list or does not supply the items within the stipulated time as per the terms & conditions of tender or the product supplied is proved to be of substandard quality.

Right of Acceptance / Rejection of Tender

The following documents shall be submitted by the Tenders as mandatory along with Tender Paper.

1. EMD (Earnest Money Deposit) except SSI Units / MSMEs of Odisha State.
2. Original Money Receipt in respect of purchase of tender documents.
3. Attested Photocopy of the up-to-date manufacturing license of the manufacturer. In case of quoted items from overseas manufacturer / MNC an undertaking for submission of the manufacturing license before award of purchase order.
4. Photocopy of up to date (Income Tax return & PAN card of firm concerned.)

5. Photocopy of up to date VAT clearance certificate.
6. Photocopy of documentary evidence in support of Exemption of EMD.
7. Photo copy of CST & VAT R.C.
8. Detail Name, Address, telephone No., Fax, E-mail of the firm & of the Director / Managing Partner / Proprietor of the firm.
9. Annual Turn over disclosed in VAT returns of last three years or balance sheet of the audited account of last three years.
10. Declaration regarding not blacklisted by any Govt Offices / Govt. undertakings /organizations.
11. Annexure I, II duly filled in along with check list in Annexure III

No tender shall be accepted if the same is not supported with the above documents as mentioned.

The right of acceptance of tender and / or award of contract or relax any clause of the tender notice rests with the who does not bind himself to accept to THE MANAGER CUTTACK MILK UNION LTD. Odisha, Cuttack the lowest Tender and also reserves himself the right to reject any or all the tender(s) received without assigning any reason whatsoever. Any disputes arises in future will be finalized by the General Manager. The legal dispute is subject to Cuttack jurisdiction only.

VALIDITY OF TENDERS

I. The rate so approved will remain valid for one year, from the date of finalization of the price, the terms, conditions and the approved price of the items may be extended for a period as decided by the Milk Union duly approved by the competent authority.

II. No extension of time shall be allowed for submission of tender under any circumstances unless otherwise specifically extended by the General Manager, The Cuttack Co-operative Milk Producers' Union Ltd., Cuttack by wide publication in news paper & electronic media.

TENDERER'S UNDERSTANDING OF THE TENDER DOCUMENT

The Tenderer shall carefully go through the Tender Paper/ Documents and fully acquaint himself to all the terms and conditions contained therein before submission of the Tender. If the Tenderer found discrepancies or omission or should be in doubt as to their meaning relating to Tender Papers/Documents, he should at once inform the Director and obtain clarification in writing prior to submission of this Tender. Verbal clarification or information given by the General Manager or the employees working under him or his representatives shall not be binding on the General Manager.

E. GENERAL TERMS & CONDITIONS:

Time for submission and opening of offer.

i. Tender documents can be downloaded from the website www.omfed.com or www.cdcmu.com on 9th Feb,2015 & filled in document in sealed condition should be submitted on or before 24.02.2015 by 5.00 P.M. and the tender documents will be opened in the presence of interested bidders or their authorized representative on 25.02.2015 at 11.00 AM.

ii. Tender documents should be submitted along with copy of the license to manufacture I.S. Specification.

iii. Valid Sales Tax and Income Tax clearance certificate should be attached. All the documents should be self attested and sealed.

iv. Tender documents should also contain warranty & sales service minimum 3 years in respect of quality of product, containing all required specifications.

v. Sealed offer mentioning name of the item should be mentioned on the top of the envelope. Both, Technical & Commercial bid in separate Envelope should be mentioned on top of the envelopes.

F. PAYMENT TERMS :

90% payment within 30days of the date of Certificate of Material Receipt and balance, 10% after training, installation & commissioning of the BMC, DG etc. within 3 months

i. The Tender documents shall be sealed and addressed to the **General Manager, The Cuttack Co-operative Milk Producers' Union Ltd., At-Mahanadi Vihar, PO- Nayabazar, Dist.- Cuttack – 753004, Odisha** in block capital clearly indicating the rate offer documents reference and date of opening at the top of the envelope. Rate must be quoted in the space provided in the Tender Documents supplied by the Milk Union.

ii. Bidder shall have to furnish copies of the annual returns filed for the last financial year with I.T authority, copy of PAN and copy of the registration certificate with Sales Tax authority where the Manufacturing Unit is located.

iii. The Bidder must enclose the list of clients to whom manufacturer have supplied BMC, DG etc. during last one year. Performance Certificate received from the agency.

iv. The Bidder should state their address to which the orders, notices and correspondences relating to the tender and agreement are to be sent. Any change of address should be notified to the General Manager, The Cuttack Co-operative Milk Producers' Union Ltd.

v. The Bidder shall not be allowed to use his own discretion in any respect once the order placed and agreed for execution.

vi. While preparing comparative price statement for evaluation of tender, the VAT payable in Odisha shall be excluded and price comparision shall be made only in the basic price.

vii. On finalization of the rate and quantity order shall be issued to the supplier to supply the materials as per specification. The quantity & period of delivery may be increased / decreased as per the discretion of the General Manager, Cuttack Milk Union. The acceptance copy of the order must be sealed and signed by the bidder as token of his confirmation to supply. If

the order is revoked by the supplier in any case the EMD is liable to be forfeited.

viii. The bidder shall deposit **earnest money mentioned above** in the shape of Demand Draft drawn in favour of "The Cuttack District Co-operative Milk Producers' Union Ltd." payable on Cuttack which will be convertible as Security Deposit incase of successful bidders and same shall be refunded after executing the supply as per Purchase Order. Any tender not accompanied by EMD shall be liable for rejection.

ix. Co-Operatives, Govt. bodies are exempted from submitting required EMD.

x. The EMD of successful bidder will be converted into Security Deposit.

xi. The EMD of the unsuccessful bidder will be refunded on receipt of written request letter within 30days by A/C payee cheque only.

xii. The General Manager, Cuttack Milk Union reserves the right to accept/reject any or all the bids without assigning any reason thereof.

xiii. In case of any doubt of dispute relating to the interpretations of any clause of this Tender Document, the decision of the General Manager, Cuttack Milk Union shall be final and binding on both the parties.

I / we declare that I / we have gone through the above mentioned terms before filling up our final rates and submission of the tender documents. I/we are agreeable to abide by these conditions until the finalization of tender.

Date: Seal and Signature of the Bidder

Name of the Supplier :
Address

Contact Details – e-mail, Mobile & Phone Number.

TENDER FORM

From

M/s. ……..

……

……

To

The General Manager
The Cuttack Co-operative Milk Producers Union Ltd.
Mahanadi Vihar, PO-Nayabazar
Cuttack – 753 004, Odisha

Sub. : Tender Notice No……..... Dated …….

Dear Sir,

In response to your advertisement in the ……. Dated …….. for Data Processor & Milk Collection Union. I/We, a Company / a Partnership / Firm / an Association / Sole proprietor in the case of a firm, an association of a syndicate (please set out here full name of all partners or members)……..
……
……
……
……
…… carrying on business at
……
……. ……. Hereby offer tender to supply the items including all accessories and attachments complete in all respects at the firm rates quoted in the schedule attached.

2. I/We agree that this offer shall remain valid for a period of 12 months from the date of issue of the approved list or till publication of the next approved list whichever is earlier and, if the offer is withdrawn before the said date, I/We shall be liable for damages to the extent of the percent or my/our Tendered value & pay you the same forthwith on demand without protest or demur.

3. I/We hereby agree to abide by and fulfil the terms & conditions set out in the INVITATION TO TENDER INSTRUCTIONS TO TENDERERS CONDITIONS OF THE TENDER SCHEDULE AND ANNEXURES HERETO, which shall be deemed

to form a part of this tender & I/We return herewith all these documents attested on each page in token of my/our acceptance thereof.

4. I/We hereby further agree to notify the General Manager, The Cuttack Co-operative Milk Producers Union Ltd., at any time whether before or after acceptance of my/our tender any change in the address and or constitution of my/our firm/association/syndicate either by death or retirement of any partner or by the admission of a new partner of member or otherwise (this clause shall apply where tenderer is a firm/association or syndicate)

5. I/We do hereby certify that, I am/we are real manufacturer / stockist / importers / authorized agents of the overseas suppliers and my/our financial position is quite sound to fulfil the contract.

6. I/We hereby declare that this Tender and your acceptance to be notified by you shall constitute a valid and binding contract between us

In presence of

1. Signature of witness

Address …… Signature of the Tenderer

…… Seal of Tenderer

Full Address ……..

……

……

2. Signature of witness

Address …….. Cable

…….. Telex

Telephone

Mobile

Fax No.

ANNEXURE – I

1. Status of the Firm (proprietorship, partnership, (P) Ltd., limited company)
2. Name of the Tenderer
3. Whether a limited firm or public or private undertaking
4. The name and address of proprietor/ partners/ managing director / manager / principal officer
5. Financial condition of the firm whether solvent or not with details thereof
6. Whether manufacturer or/ distributor or/ sole selling agent (in the case of mixed business, the items for each should be indicated)
7. Varieties of articles dealt with and names of the items
   a) Is it a Registered Firm under the partnership Act ? If so, Regd. No. & date & office of Registration should be given (Please furnish and attested true copy of certificate of registration).
   b) If it is a company incorporated under the companies act, please furnish an attested true copy of certificate of incorporation.
8. Are you a Regd. Sales Tax dealer & if so, please quote both provincial & central sales Tax Regd. No.
9. Name of the authorized person who can hold discussion on your behalf at the time of necessity.
10. The names of the proprietors / partners or Managing Directors / Principal Officer with address or Addresses as the case may be who is authorized to receive payment in case of endorsed bill on behalf of the firm from the General Manager/Indenting

Officer and their specimen signatures in duplicate for each.

11. Are you an income tax assessee ? Please furnish the current income tax return / non-assessment certificate.

12. Indicate in detail about the previous experience of supply of items tendered for (attach additional sheets)

CERTIFICATE :

Certified that the information furnished above are true and correct to the best of our / my knowledge and belief. In case any or all the information given above or the tender documents is or are found to be incorrect at any time. I undertake the liability to be proceeded within any manner. Any change or changes in regard to the information furnished will be intimated by us/me as and when such changes occur.

Signature …….

Prop/Partner/Managing Director /Manager/
Principal Officer / Authorised Signatory

(Strike out which ever not applicable)

ANNEXURE – II

MODEL FORMAT (PRICE BID)

(One rate for one item with one brand name to be quoted)

Sl. No.	Sl. No. of the Tender Item	Name of the item	Make/ Brand	Unit	MRP	Basic Rate	Excise Duty	E.T	CST	VAT	Total (7+8+9+10)
1	2	3	4	5	6	7	8	9	10	11	12

Seal and Signature of the Bidder

Name of the Supplier :

Address

Contact Details – e-mail, Mobile & Phone Number.

ANNEXURE – III

List of enclosures attached to the Tender Documents :

Signature of the Tender
In full with seal & date

POINTS BIDDERS SHOULD BEAR IN MIND

1. ANY DEVIATION FROM THE BIDDING DOCUMENT, LIABLE TO BE REJECTED.

2. BIDS WITHOUT EMD AND TENDER COST SHALL BE REJECTED

3. NON- COMPLIANCE TO THE TENDER REQUIREMENT LIABLE TO BE REJECTED.

4. BIDDERS SHOULD FURNISH THEIR COMPLETE ADDRESS FOR THE PURPOSE OF FUTURE CORRESPONDENCE PERTAINING TO BIDDING DOCUMENT.

5. CORRECTION IN THE DOCUMENT IF ANY SHOULD BE SEALED AND COUNTER SIGNED.

6. NEGLIGENCE OF THE BIDDER IN PREPARING THE BID CONFERS NO RIGHT TO WITHDRAW THE BID AFTER IT IS OPENED.

7. SPECIFICATIONS, CONDITIONS, SCHEDULES AND DRAWINGS OF BIDDING DOCUMENT CONSTITUTE AN INTEGRAL PART OF THE BID.

8. ALL THE BIDS, ALONG WITH ENCLOSURES, DRAWINGS AND TECHNICAL LITERATURE, SHOULD BE IN ENGLISH ONLY.

9. BIDDING DOCUMENT SHALL BE COVERED AND INTERPRETED ACCORDING TO THE SYSTEM AND COMPONENTS UNDER TROPICAL CONDITIONS.

10. ALL THE BIDDERS SHOULD SUBMIT RELEVANT DOCUMENTS TO PROVE THEIR ELIGIBILITY ALONG WITH THEIR BID AND ALSO THE QUALIFICATION WITH REQUIRED DOCUMENTATION.

11. THE OFFER SHOULD BE VALID FOR A PERIOD OF **365 DAYS** FROM THE DATE OF OPENING OF BID.

12. ALL THE BIDDERS SHOULD QUOTE FOR THE ITEMS AS PER THE SPECIFICATIONS AND DETAILS GIVEN IN THIS BIDDING DOCUMENT.

13. THE BID PRICES SHOULD BE QUOTED STRICTLY IN ACCORDANCE WITH BIDDING TERMS AND CONDITIONS.

14. THE PURCHASER RESERVES THE RIGHT TO ACCEPT OR REJECT ANY OR ALL BIDS WITHOUT ANY EXPLANATION TO BIDDERS.

15. THE BIDDER WILL ENDROSE THE DULY SIGNED COPY OF TERMS & CONDITIONS SPECIFICATIONS ALONG WITH OFFER.

CRITERIA FOR MANUFACTURER

- The manufacturer should have supplied more than 500 BMC's of similar capacities to other Milk federations / cooperative Union / reputed private vendor in the same name.

- The Annual average turnover of the manufacturer should not less than Rs 10.00 crore for last 3 financial years.

- The bidder shall provide certificate from the client with respect to completion and running of BMC and all other related accessories.

- The company should have in house manufacturing facility.

- Full details of materials including the manufacturer's name and brand of items must be mentioned wherever applicable.

- The Union does not bind itself to accept the lowest quotation and reserves the right to accepting any quotations in part or full without assigning any reasons.

- Date of delivery prescribed shall be deemed to be the essence of the purchase order contract. Deliveries should be completed up to/within three months from the date of placement of order/letter of Intent.

- Quotations required to be submitted with drawing, specifications and submitted as such, shall be deemed to mean that the bidder submitting such a bid is fully acquainted with the technical details.

- Bidders should clearly state the percentage of discount, if offered by them.

- The BMC manufacturer should have ISO certification .

- Price escalation over the offered price is not applicable during the tender validity period i.e (365 days).
- Preference shall be given to manufacturer of Bulk Milk Cooler in India so that stage inspection of Bulk Milk Cooler can be offered to check the quality of product.
- Preference shall be given to the manufacturer having separate spare and service department.
- Preference shall be given to the manufacturer having local service centre/Engineers near to the user point to cater timely sales services.
- Preference should be given to the manufacturer who has executed maximum turn key projects right from supply, installation, commissioning and AMC.(Documents shall be requires as proof)

- **Bidders are required to submit separate bids for technical and financial/commercial in separate sealed envelope. The commercial bid will be opened only of the eligible bidders who fulfill eligibility criteria as well as technical requirements as specified in the tender document.**

2. Bid Currency.

For all goods and services covered in this Bidding Document prices shall be quoted in Indian Rupees only.

3. IMPORT LICENSE AND FOREIGN EXCHANGE VARIATION.

No import license shall be provided by the Purchaser for goods offered against this bid. Necessary clearances/licenses from the concerned Authorities for any imported goods offered shall be obtained by the bidder at his cost & responsibility.

Non-availability of or delay in obtaining license/ clearance shall not, under any circumstances, entitle the bidder to seek any compensation/relaxation under the contract and/or relieve the bidder from any of his obligations under the contract. Foreign Exchange, Duties etc. variation, if any, shall also be to the account of bidder and no price escalation may be given.

DIRECT EXPANSION TYPE BULK MILK COOLERS

CAPACITY: 2000 KL. & 5000 K L.

TECHNICAL SPECIFICATIONS

General Description

Design, supply, installation, testing and commissioning of Direct Expansion type bulk milk cooling systems including all accessories & items given in the detailed scope of supply, on turnkey basis.

1. Functional Requirement

These systems would be installed in village Dairy Co-operative Society (DCS), which collects the milk everyday in the morning & evening from milk producers. The milk collected shall be stored in the bulk milk cooler and cooled from ambient temperature to 4 degree centigrade. The stored milk shall be dispatched to dairy plant through insulated road milk tanker once in a day.

2. Design Requirement

2.1. Capacity

The net capacity of the bulk milk cooler shall be as mentioned above and as per the requirement given in the enquiry/ tender document. However, the gross capacity in all the sizes shall be at least 10% higher than the rated capacity to avoid agitational or accidental spillage of milk.

2.2 Applicable manufacturing/ design code

Bulk Milk Cooler (BMC)

The tank shall meet the requirements of ISO 5708 Type 2A II (Latest version) for milk collection cycle of two times in a day with not more than 3.0 hours cooling time from 35 to 4 Deg C for all milking and not more than 1.5 hours for second milking i.e. from 10 to 4 Deg.C.

For design of condensing unit for BMC ARI Standard 520-2004 (air-conditioning & Refrigeration Institute, Arlington, Virginia) for ambient temperature condition shall be applicable.

The tank shall be of an established and proven design, in regular production and use, and not a prototype unit.

(* Note: All milking means quantity of milk received in either morning shift or evening shift. When a Tank for two milkings is either empty or contains 50% of its' rated volume of milk at 4^0 C, and 50% of the rated volume of milk at 35^0 C is added in one batch, all of the milk shall be cooled to 4^0 C in not more than the specified cooling time.
If a volume of milk corresponding to the second milking is added to the tank, the total volume of the milk shall be cooled to 4^0C in not more than specified cooling time.)

2.3. Refrigeration System

The refrigeration system shall be designed to meet performance ratings of positive displacement of condensing units specified in ARI Standard 520-2004. & ISO 5708 Type 2A II.

2.4 Accessories

Accessory items viz. Diesel generator set, electric & control cables, control panel, temperature sensor, electrical switch gears, control valves & fittings etc. shall be of approved make only and shall meet the requirement of the latest relevant Indian Electricity Rules, ISO/BIS Standards.

3. Scope of the bidder

3.1 Scope

The bidder's scope starts from SS 304 tray , having an outlet connection, for receiving the milk. The milk shall flow through SS 304 pipe by gravity into bulk milk cooler. Wherever gravity flow is not possible, the milk from the tray shall be collected in a balance tank and from the balance tank it shall be pumped to bulk milk cooler. The balance tank shall be of AISI 304 construction, for bulk milk cooler (BMC) upto 2000 litres capacity the minimum capacity of tank shall be 100 litres and for BMC of more than 2000 litres capacity the tank shall have minimum capacity of 200 litres. From BMC, the milk shall be transferred to Road Milk Tanker (RMT) through flexible hose and milk transfer pump either installed on the RMT or through the pump supplied along with BMC. Bidders should furnish separate prices for gravity fed system as well as for pumped system.

3.2 Supply

The bulk milk cooler shall be a complete unit with the refrigeration system, agitator(s), lockable inlet & outlet valve with strainer. Also includes supply of tank with SS 304 filter for pumped system, SS piping & milk hose, unions and milk transfer pump of 5000 LPH, SS 304 pipes & fittings , food grade quality flexible hose of adequate length, erection materials, pipe supports, floor interconnecting cables, cable conduits shall also be supplied, earth pit CI covers & earthing as required by local electrical regulation.

The indicative distances between SS collection tray to balance tank - 2 m, between balance tank to bulk milk cooler - 5 m, BMC to Mains power point & DG set – 20 m may be considered for calculating cable & SS piping requirement supports etc. However the exact distances shall be as per site conditions and the complete piping & cabling necessary for installation shall be supplied.

3.3 Installation & Commissioning

The total job is on turnkey basis and includes supply, installation, testing, commissioning and training of the field personnel. Minor civil works, providing & grouting supports are included in the scope. Giving satisfactory training to the staff of the collection centre and trial runs for the complete unit. Moreover, supplier has to demonstrate performance trial runs after commissioning of the unit to the Milkfed.

3.4 Tank Evaporator

Laser welded with Operating pressure of 30 bars and crash test pressure of 60 bars. In case of rectangular/circular type bulk milk cooler, the evaporator shall be fixed at the bottom plate of the inner tank. For closed tank of 3000/5000 litre, the evaporator shall be up to 1/3 height of the tank. For 2000, 3000 & 5000 litre tanks, two condensing unit complete with compressor shall be provided & hence total evaporative area shall be divided and separated into two sections. Each section shall have separate suction & discharge connecting to each compressor.

3.5 Tank Fittings & Accessories

Top cover with locking arrangement, top cover lifting handle, outlet valve and blank union with locking arrangement, inspection window, agitator. All SS fittings shall be of SMS standard. "No-foam" type inlet (For Close Type).Tank with gravity feeding system shall be provided with one AISI 304 funnel with SS fine wire mesh. The preferred shape of the tank shall be circular circular/horizontal rectangular with an open-able top cover up to 2000 litre capacity whereas for 3000/5000 litre BMC, Tank shall be completely closed type cylindrical with circular/elliptical dish ends & with manhole on top cover. The shape of the BMC tank shall conform to international sanitary design. For closed type Tanks, proper SS Ladder to be provided for approaching top manhole.

3.6 Ball Feet

An AISI 304 adjustable ball feet tamper proof & lockable with 50mm height adjustment.

4. Constructional Features

4.1 Bulk Milk Cooling Tank

4.1.1 Material of construction(MOC)

Tank inner, outer, intermediate dimpled jacket & top openable cover shall be fabricated from Stainless Steel AISI 304 material. All piping, fittings, filter, lockable cover, agitator shaft & blade adjustable ball feet made out of AISI 304 for 50 mm height adjustment. Also Dip stick, outlet & inlet valves & blank flanges ,ladder, manhole of about 45 cm diameter for closed type milk cooling tank etc shall also be made out of AISI 304.

The filter screen shall be from AISI 304 fine wire mesh. All the gaskets shall be of food grade nitrile or neoprene rubber material. The skid on which tank & refrigeration unit is mounted shall be of galvanized steel. The bottom evaporation surface in contact with milk shall be passivated by standard treatment to impart corrosion resistance.

The skid made out of heavy MS box section & shall be hot dip galvanized on which tank & refrigeration unit is mounted.

4.1.2 Shape & Orientation

The preferred shape of the tank shall be vertical cylindrical / horizontal rectangular or U-shape for capacity up to 2000 L with an openable top cover. The BMCs higher than 2000 L capacity shall be closed type circular/elliptical with top man hole. For capacities above 2000 liters energy efficient closed type units should be preferable.

4.1.3 Milk Cooler Tank & Evaporator

The AISI 304 tank for the BMC should be either in rectangular, circular or elliptical orientation, which imparts smooth distribution of the fat in Milk when agitators is set into operation.

The tank shall be so designed that all surfaces in contact with Milk are readily accessible either in their position or after dismantling to permit thorough cleaning.

4.1.4 Inner Vessel:-

All joints shall be welded, any filler rod being suitable for the parent metal .All weds shall be ground smooth and free from crevices, porosity and brittleness. All Milk contact metallic surfaces for the inner vase and its attachment should have finish not less than 150 grit finish.

Any permanent attachment to the inner vessel shall be welded with fillet radii not less than 6 mm. All parts of the inner vessel shall drain directly to the outlet.
Internal corner from round the bottom of the inner vessel and outlet shall be of not less than 25mm in radius .

In case of rectangular type of BMC, the evaporator shall be dimpled jackets fixed as the bottom plates of the inner tank. The Evaporator plate should be imported laser welded. Whereas in cylindrical/elliptical tank the jackets shall be at least upto 1/3 height of the tank. In case of double compressor total evaporator shall be divide and separated into two sections. Each section shall have separate suction and discharge connecting to each compressor . the evaporator surface in contact with the Milk should be passivated by standard treatment to impart corrosion resistance.

4.1.5 Tank Fittings & accessories

- The tank shall be provided with SS inlet with special " no foam" design, outlet 38 mm butter fly valve & blank union with locking arrangement, inspection window/manhole with locking arrangement for closed tanks, agitator and top cover with locking arrangement.
- At the bottom of the outlet cup on the outer surface, a temperature sensor shall be permanently fixed. It shall sense the temperature of the surface at the outlet and transmit the signal to the digital indicator. The digital type temperature indicator shall be provided in the control panel.

- The tank shall be provided with SS calibrated dipstick to measure the volume of milk inside the tank. The dip stick shall be graduated from 10% or less to not less than 100% of the rated volume. Each division on dip stick shall represent a volume not greater than 0.5% of the rated volume. The tank shall be equipped with agitator(s) capable of producing a uniform distribution of fat in the milk. All fittings shall be of SMS standard.

- The BMC shall be provided with AISI 304 filter with SS fine wire mesh suitable to filter extraneous matter such as dust particles, hay, flies, cow dung pieces/ particles etc. . It should be placed on the balance tank. The filter shall be designed & installed in such a way that it can frequently and easily cleaned.

- Top cover lifting handle and approach ladder for manhole cover shall be in an in built feature of the unit. The tank shall be provided with AISI 304 adjustable feet tamper proof type having provision of 50 mm height adjustment. Number of feet shall be minimums 4 for all capacities.

- Tank cleaning Brushes (One tank cleaning brush and one pipe cleaning brush. 4no. SS pipe hooks to be provided for 1kl/2kl BMC and 6 nos. for 3kl/5kl BMC for keeping SS pipe and milk hose pipe

4.1.6 Stainless Steel Sanitary Milk Pump

Where the gravity flow from milk reception tray to the BMC is not possible due to insufficient level difference, a suitable capacity milk pump shall be supplied for pumping of milk from balance tank to BMC. Pump impeller & casing shall be made out of SS AISI 304 material. All milk contact surface shall be finished to min. 150 grit. The pump should be of sanitary design. Inlet & outlet of the pump shall ends with SMS union.

The pump shall be provided with approved make motor having 'E'/'F class insulation and IP 55 protection. The flanged end motor shall have stainless steel shaft having hygienic mechanical sealing arrangement to prevent leakage from pump casing to rotor side of the motor. Pump shall be covered with SS shroud having air ventilation grill. The pump shall have SS adjustable ball feet.

4.1.7 Insulation

The insulation of the tank shall be done by injection, in situ, of high density (minimum 40 kg/m3, CFC free and environmental friendly) polyurethane foam without having any imperfection and hygroscopicity. 50 mm thickness in the walls & 90mm below the evaporator. The efficiency of insulation should be such that at max 50 degree C. ambient temperature, the rate of rise of the mean temperature of the milk, initially at about 4 Deg. C shall not exceed by one Deg. C in four hours when the rated volume is allowed to stand undisturbed as per the requirement of ISO 5708 2A II (latest version) when the refrigeration unit is not working. Efficiency of Insulation 0.019 w.m/k.

4.1.8 Cleaning In Place (CIP)

For closed type configuration, facilities for Cleaning- In- Place shall be provided which shall include CIP spray ball (s) or deflector plate and piping from milk reception/balance tank through milk transfer pump to bulk milk cooler.

4.1.9 Welding & Finishing

Inner, outer, intermediate dimpled jacket and nozzle connections shall be welded with TIG process only. The inner shell and all other product contact surface shall be polished up to minimum 150 grit finish. The outer surface to be polished with 150 grit dull finish or a circle finish.

5. Refrigeration System

The refrigeration system shall be designed to meet performance ratings of positive displacement of condensing units specified in ARI Standard 520-2004 and with not more than 3.0 hours cooling time from 35 to 4 Deg C for all milking and not more than 1.5 hours for second milking i.e. from 10 to 4 Deg.C.

The refrigeration system shall be of direct extension type, with Freon-22 (R-22) or CFC free environment friendly as refrigerant to cool the raw frame described above. The evaporator(s) of the refrigeration system shall be form a part of the milk tank body as dimpled jacket in the bottom plate in case of rectangular tank or at least up to 1/3 height of the cylindrical/elliptical tank. It would be better in case the system is compatible for the refrigerant R 407C. The refrigeration system shall be direct expansion type to perform cooling function in an ambient temperature of 46 Deg. C. with air cooled condenser.

5.1 Compressor

The refrigeration compressor shall be adequate enough to ensure that milk is cooled to 4 Deg. C in the prescribed time limit and suitable to operate at 0 Deg C suction temperature and 60 Deg. C condensing temperature (air-cooled condenser) assuming 46 Deg. C ambient temperature ,should also comply ISO 5708 Type 2AII(latest version).

The compressor (s) shall be scroll / reciprocating hermetically sealed type essentially suitable for refrigeration application in hot & humid Indian climatic conditions. The motor of the compressor should have a thermistor temperature sensor embedded in windings for protection from excessive heating due to overloading or short circuiting. Similarly, a protection against off cycle migration of refrigerant to the compressor is necessary in the refrigeration unit, preferably a self regulating PTC crank case heater. The compressor selected should be energy efficient and consume least power to meet the cooling load requirements.

The bulk milk cooler up to capacity of 1000 L shall be provided with single compressor, however for higher capacity two compressors system shall be preferred. In case for a particular capacity, single as well as double compressor systems are available, bidder should quote for both. Similarly, in the offer bidder shall clearly mention whether the offered system shall work on single phase or three phase mains supply. Looking into the non-availability of three phase supply in most of the rural areas, single-phase systems will be preferable at least upto 2000 lit.

5.2 Condenser

The condenser shall be air cooled finned tube type having sufficient heat transfer area when the unit is operating at extremely high temperature. For each compressor separate condenser and air cooling fan shall be considered. The air circulation pump shall preferably be induced draft type throwing not air out. The condensing temperature should not be less than 60 deg C operating ambient temperature of 46 deg C.

5.3 Receiver

A suitable size liquid receiver of minimum capacity of 6 ltr. to assist system during pump down cycle as well as to store refrigerant incase of maintenance should be provided duly mounted on the skid near compressor(s), as per requirement for different capacity BMC.

5.4 Thermostatic Expansion Valve

Suitable size and capacity Thermostatic valve should be provided in the refrigeration circuit of the bulk milk cooler. The TX valve should be Maximum Operating Pressure type of reputed make and of adequate capacity to feed optimum quantity of refrigerant to the evaporator.

5.5 Refrigerant pipe, fittings & controls

All pipes, valves, fittings & controls shall comply with the latest relevant code applicable. Isolation valves at suction & discharge sides of the compressors should be provided for compressor isolation, during maintenance of the system. The make of each item shall be approved by the client. Copper/ SS tubing shall be routed in such a way that if any leakage occurred during operation can easily be detected and the defective portion can be repaired/ replaced without dismantling the whole system.

6. Electrical Control Panel

*6.*1 Control Panel

Three control panels shall be provided, one for the main power supply tapping, second for the refrigeration unit and the third for the milk tank. Each panel shall be provided with MCB's of suitable ratings for switching and protection as per the system requirement. The incoming and outgoing power supply terminals shall be covered and secured with a lead seal to prevent tampering. The door of the panels should be provided with lockable handles.

6.2 Main Control Panel

This panel should be suitable to tap the incoming State Electricity Board supply and feed the refrigeration unit, agitator motor and milk unloading pump (from balance tank) and dispatch pump. The DG set should be hooked up with this panel through a

'change-over-switch' in order to operate the DG set in place of State Electricity Board supply as & when required. It should be provided with necessary phase indication lamps (LED type), contactors, MCBs, ammeter, voltmeter, energy-meter, frequency-meter, push buttons, DG set running hour meter etc. A battery charger to trickle charge the battery when the DG set is in operation (charge indications shall be displayed on the panel) should be provided.

Note: the switch gears used in all the panels should be of reputed makes. The makes for individual items are specified in Appendix of the specifications.

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7. Refrigeration Control Panel

The refrigeration unit shall be provided with a control panel made out of Stainless Steel suitable for wall mounting near the unit. The panel shall be provided with motor starters, ON/OFF push buttons & necessary MCBs, control wiring, line voltage controller to guard the compressor against the supply voltage fluctuations. Wall / Tank mounted To be specified by bidder MOC of Panel & Thickness AISI 304 / 1.6mm

In case more than one compressor is provided in the refrigeration system, the control panel shall be provided with a sequence controller & timer to start one compressor at a time to avoid surge on power supply. The panel shall also have facility to operate refrigeration unit on auto/ manual mode. In the auto mode, as soon as the milk temperature reaches to pre-set value, the compressor should be switched off to avoid freezing of milk.Milk Tank

7.1 Control Panel

The milk tank shall be provided with a control panel with inbuilt-timer to control the intermittent operation of the agitator & a digital temperature indicator to indicate the milk temperature to one decimal place with least count of 0.1^0 C on continuous basis. In case of power failure alternate arrangement should be available to know the temperature(stem thermometer). The agitator (s) shall have interlocking arrangement with top cover opening limit switch. The limit switch shall put off the agitator as soon as the top cover opens up.

Temperature Display LCD 0 to 100 Deg. C with one decimal accuracy; Management & control of cooling and agitation ; provision for cut-off/ restart, intermittent operation of agitator, auto & manual facility required ; RS232 port for temperature data backup of minimum last 90 days & main cooler faults analysis; in case of open type coolers, agitator should switch off when the lid is opened for safety purpose.

All the pipes shall be clamped properly with fixed support. In case of double compressor system, pipe, fitting & control should be designed in such a way that both the compressors can run independently. The tubing shall be insulated wherever necessary.

8. Cables & Electrical Switch gears

All electrical switch gears and controls required for the complete system shall be of reputed make and of suitable rating.

All permanent wiring installed on the tank or associated unit shall be carried out using PVC cable in heavy gauge, screwed galvanized steel conduit or plastic conduit, or in mineral-insulated copper- sheathed cable. Flexible connections shall be made.

9. **Earthing**

As per IS: 3043 - 1987 (reaffirmed 2001) - "Code of practice for earthing". Pipe type earthing - 4 nos. to be used. Suitable G I Strip (minimum 25x3 mm) to be used for connecting earth pit with nearest equipment earthing point. From this point earthing to other points can be looped by suitable GI Strip or PVC insulated copper conductor cable of green color (size minimum 1x 4 Sq mm) The chassis, framework and fixed parts of the metal casing of the tanks where used shall be provided with two separate earthing terminals, Earthing for Alternator & Panels. These terminals shall be provide over metallic coverings) of current carrying cables.

The earthing terminal shall be readily accessible and so placed that the earth connection of the tank are maintained when the cover or any other movable part is removed.

The earthing terminal shall be of adequate size, be protected against corrosion and shall be metallically clean. Under no circumstance shall a movable part of the enclosure be insulated from the part carrying the earthing terminal when the movable part is in place.

The earthing terminal shall be identified by means of the ‘ ‘ marked in a legible and indelible manner on or adjacent to the terminals.

10. Accessories

Isolation valves at suction & discharge sides of the compressors, All pipes, valves, fittings & controls shall comply with the latest relevant BIS code applicable, Copper piping between tank and CDU shall be supported/routed by cable tray and cable tray supports.

10.1 Accessories for 2/ 5kl BMC

MS Powder coated 1.6mm enclosure, 32 DP Change over switch, 32 A DP MCB as incoming, 3 nos. 10 A MCB SP for lighting, 3 nos. 20 A MCB SP for geyser/Solar water heater, AMCU etc.

MS Powder coated 1.6mm enclosure, 40 A DP MCB for incoming,32 A DP MCB for feeding refrigeration panel, 20 A DP MCB for feeding starter of milk pump, 32 A DP MCB for feeding Domestic power DB, 20 A DP MCB as spare.

10.2 Accessories for 2kl BMC

MS Powder coated 1.6mm enclosure, 40 A TPN MCB for incoming, 32 A TPN MCB for feeding refrigeration panel, 20 A TPN MCB for feeding starter of milk pump, 32 A DP MCB for feeding Domestic power DB, 20 A TPN MCB as spare.

10.3 Accessories for 5kl BMC

MS Powder coated 1.6mm enclosure, 60 A TPN MCB for incoming, 40 A TPN MCB for feeding refrigeration panel, 20 A TPN MCB for feeding starter of milk pump, 32 A DP MCB for feeding Domestic power DB, 20 A TPN MCB as spare.

10.4 Other Required Accessories

Isolation valves at suction & discharge sides of the compressors, All pipes, valves, fittings & controls shall comply with the latest relevant BIS code applicable, Copper piping between tank and CDU shall be supported/routed by cable tray and cable tray supports.

10.5 Optional Item –

Heat recovery Unit for 1000L to 5000 L capacity BMC with necessary piping (Estimated 10 meter)
This system shall be for heating water using heat of one condensing unit of BMC & to store this hot water. It shall consist of evaporator type heat recovery unit. Tank shall be of 200 litre capacity in SS 304, Outlet with 38 MM Butterfly valve with Union. All controls shall be manual.

Installation of all equipment & interconnecting piping ,including minor civil works such as providing galvanized steel supports, SS base plates, clamps etc. required to secure the equipment & piping to walls and floors is included in the scope. Necessary cable trays, GI pipes/ conduits, cable gland sockets at both ends, insulators, junction boxes etc are included in the scope of the contract to lay & connect all electrical and control cables. Cabel trays and supporting steel members such as Galvanized angels/channel/ flats, supply of CI covers for the pits etc shall be used and fixed/ installed at appropriate places to ensure safe installation. The laying of cables on the floor or under the floor should is not permitted.

The owner will undertake major civil works. The supplier shall make all tools & tackles required to execute the job available.

11 Commissioning

Supplier shall arrange commissioning & performance trial runs of the bulk milk cooling system to the satisfaction of Milkfed. The supplier shall supply all the consumables required during commissioning of the plant. Along with the bulk milk cooler & DG Sets etc, the bidder shall quote for supply of spares along with prices for the complete system. A set of essential spares for the total installation as required by the user shall be worked out and finalize at the time of finalization of contract.

The cost of spares should not be included in the main bid.

11.1 Tool Box

A standard tool box is required with necessary tools for normal maintenance. It should include Electric Tester, Screw Driver Set, Allen Key 3mm & 6mm, Pipe Wrench 12" Long, Screw Spanner 6", Fix spanner Set 6-27, Gasket for SS Unions/valves- 3 sets

11.2 Manual

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

11.3 Training

Supplier shall arrange for training of the team of DCS staff for efficient operation and maintenance of the complete system.

11.4 After Sales Service, Service Centre and Service Contract(optional) obligation of BMC package supplier for providing after sales service/warranty claims for BMC package components supplied.

It would be the responsibility of the contractor, for bought-out components of critical nature such as DG Set and voltage stabilizer, to identify dealers/ agency located in the region where BMC package would be installed. This is to facillitiate fulfilling of the

warranty obligations as per the contractor and availing timely services by milk collection centers in view.

11.5 Service Centre

- Each bidder is required to quote for setting up a service centre in different district of Odisha for providing service cover on a continuing basis. The quoted price for service cover will be valid for three years. This is to be established preferably near to *(district head quarter*), with all facilities to maintain a continuous service to the village collection centres having milk cooling systems. This includes:

- Telephone connections and communications to call the service team round the clock.
- Transport facilities: The centre is to have transport (owned or hired) available round the clock of adequate capacity to;

- Provide rapid replacement of complete milk cooling unit or DG set, if necessary.

- Ensure regular & continuous visits of the service team(s) to the collection centers.

- Maintenance workshop, including essential machine tools and hand tools to tackle any repair that may be required for the system and for regular dismantling and overhauling of diesel engines that would be necessary on a continuous basis.

- Stock of spare parts.(the list should be provided by the bidder.)

11.6 .

- Union has a right to inspect all the components of the bulk milk cooling system during fabrication / manufacturing stage. Before starting the fabrication work supplier shall submit QAP & QIP for approval from client. The milk cooling tank shall be checked with dye penetration test for welding defect, surface roughness check, water tightness test / hydraulic test.

11.7 GENERAL SCOPE OF WORK:

RAW MILK - At max. temp. of 35 deg. C shall be made available at the Dump tank by Co-operative societies/Union.

ELECTRICAL POWER –Electrical power including earthing shall be made available at the incoming feeder of Main Control Panel. In case of power failure, Power supply through DG set shall be made available through a manual change over switch provided in the Main Control Panel.

CHILLED MILK – Co-operative societies/Union shall leave the chilled milk at the outlet of bulk milk cooler at 4 deg. C temperature. VCS/Union will connect the milk pump and hose pipe available on the Road Milk Tanker to the outlet of bulk cooling tank and unload milk.

WATER: Water of suitable quality shall be provided at inlet of Hot water arrangement system. Hot water generator shall generate water of 60 to 65 Deg C for CIP of BMC tank and piping.

CIP – Co-operative societies/Union shall provide CIP solution at the inlet of Dump tank in case of
pumped feed system.

All types of civil works including grouting of skid and level floor with drains, grouting of supports, etc.

The site preparation is excluded from bidder scope.

Only first charge of refrigerant and oil for cooling tank is included in Bidder scope. Any additional charge of oil and refrigerant if subsequently required shall be provided by Co-operative societies/Union.

The HT and LT power cables are excluded from the scope of supply.

Diesel required for commissioning of DG set shall be provided by Co-operative societies/Union.

All types of consumables process water, electrical power; raw milk, etc. shall be arranged by ordering unions / co-operative societies.

12. General Requirement

12.1 Technical Details

The bidder shall provide all the technical details, as per the format enclosed as appendix over and above the general description in each section.

12.2 Makes of Items

The bidder shall provide makes of all the items fitted in the bulk milk cooling system as provided in technical details. It is to be ensured that all the makes considered shall be of internationally / nationally repute and of proven quality. The bidder should mention at least one alternative make with complete details. Bidder shall obtain necessary approval from MILKFED for makes of all bought out items.

12.3 P &I Drawing

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.

12.4 Equipment Selection criteria

Bidder shall submit alongwith the offer detailed calculations with proper justification for selection of compressor (s), evaporator (s), condenser (s), fan (s), thickness of tank, milk pump, insulation material and thickness, DG Set etc.

APPENDIX-II

Format for technical details: (Details to be furnished by the bidder)
TECHNICAL SPECIFICATIONS FOR BULK COOLING TANKS CAP.2000 L WITH D.G.SET
WITH SINGLE PHASE POWER SUPPLY AND ONE CONDENSING UNIT (OPEN/CLOSED TYPE).

S.No	DESCRIPTION	TECHNICAL REQUIREMENT
A.	Milk tank	
1	Rated Capacity	2000 Ltr.
2	Make and model.	To be specified by the bidder
3	Material used for construction	AISI 304
4	Type	Closed/Open Type Horizontal/ Rectangular / Cylindrical / Semi-cylindrical.
5	Overall dimensions and weight.	To be specified by the bidder
6	Thickness of inner and outer shells	1.5 mm for inner 1.2 mm for outer shell
7	Number and RPM of agitator(s).	1 no.25 RPMs (approx).
8	CIP facility: Manual or auto	Manual
9	Insulation type (b) Thickness © Efficiency	By injection in situ of High Density (min.40 kg/m3) CFC free polyurethane foam without any imperfection and hygroscopicity Minimum 50 MM. It should be such that at 50 deg C ambient the rate of rise of mean temp. of Milk Initially at 4 deg. C shall not Exceed 1 dg. C in 4 hour when rated volume is allowed to stand-still as per requirement of ISO 5708 2A(II)
10 11 12	Balance Tank with Filter, in line strainer SS Milk transfer pump Facility to Measure volume:	Minimum 200 liters capacity. Minimum 5000 LPH capacity. SS calibrated dip Stick on both sides in the BMC tank with 0.5% calibrating accuracy.
B	Refrigeration unit	
1 2	Type: Compressor: a) Make b) Model	DX-type Hermetically sealed scroll / reciprocating To be specified by the bidder. To be specified by the bidder
13	Condenser: a) Make: b) Model	Air Cooled, finned Tube Type To be specified by the bidder. To be specified by the bidder
14	a) No. of compressor b) Capacity of compressor(s). (Kcal/hr)	Two Min. 10333(Kcal/hr)
C	Design Parameters	
15	a. No. of Fans b) Capacity of the condenser	Min. Two Min. 12400 (Kcal/hr)
16	Overall dimensions and weight of the unit	To be specified by the bidder
17	Type of refrigerant : R-22 or CFC free environment friendly refrigerant refrigeration control	Preferably R – 22 To be specified by the bidder

	panel (Wall/Tank mounted)	
17.	Type of refrigerant:R-22 or CFC free Environment Friendly refrigerant Refrigeration Control Panel (Wall/Tank mounted)	Preferably R-22 To be specified by the bidder.
18.	Power Supply	Single/Three Phase.
1	Ambient temperature considered for design	46 Deg C
2	Maximum cooling time considered a) ALL milking b) SECOND milking.	 3 hrs from 35 Deg C To 4 degC 1.5 hrs from 10 deg. C To 4degC
3	Temperature range considered a) ALL Milking. b) SECOND milking.	 35 Deg C To 4 degC 10 deg. C To 4degC
C	DG set	The specification given below are minimum. However bidder may give higher capacity D.G set as per their design & considering 10% extra load.
1	Make of the alternator Model of the alternator.	To be specified by the bidder. Stamford/ Leroysomler/Siemens
D.	Electricals	
1.	Connected load in Watts & Amperes for : a) Compressor(s) b) Condenser fan(s) c) Agitator(s). d) Milk pump	 To be specified the bidder To be specified the bidder To be specified the bidder To be specified the bidder
	Maximum / surge current drawn by the compressor(s)	Not more than 30 Amps.

NOTE :ALL THE INTER CONNECTING SS PIPES & FITTINGS FOR INSTALLATION & COMMISSIONING OF EQUIPMENTS IS IN SCOPE OF SUPPLY OF BIDDERS. SIMILARLY ALL THE ELECTRICAL SWITCH GEAR ITEMS FOR INTER CONNECTION FOR MAIN CONTROL PANEL, REFRIGERATION CONTROL PANEL, MILK TANK PANEL, ETC. AND CABLES ARE IN THE SCOPE OF SUPPLY. THE EARTHING MATERIAL WHEREVER REQUIRED IS ALSO IN THE SCOPE OF BIDDER.

APPENDIX-II

Format for technical details: (Details to be furnished by the bidder)
TECHNICAL SPECIFICATIONS FOR BULK COOLING TANKS CAP.5000 L WITH D.G.SET WITH THREE PHASE POWER SUPPLY AND ONE CONDENSING UNIT (CLOSED TYP).

S. No	DESCRIPTION	TECHNICAL REQUIREMENT
A.	Milk tank	
1	Rated Capacity	5000 Ltr.
2	Make and model.	To be specified by the bidder
3	Material used for construction	AISI 304
4	Type	Closed Type Horizontal/ Rectangular / Cylindrical
5	Overall dimensions and weight.	To be specified by the bidder
6	Thickness of inner and outer shells	2.0 mm for inner 1.5 mm for outer shell
7	Number and RPM of agitator(s).	1 no.25 RPMs (approx),Make:SIREM
8	CIP facility: Manual or auto	Auto with CIP System
9	Insulation. type (b) Thickness © Efficiency	By injection in situ of High Density (min.40 kg/m3) CFC free polyurethane foam without any imperfection and hygroscopicity Minimum 50 MM. It should be such that at 50 deg C ambient the rate of rise of mean temp. of Milk Initially at 4 deg. C shall not Exceed 1 dg. C in 4 hour when rated volume is allowed to stand-still as per requirement of ISO 5708 2(II)
10	Balance Tank with Filter, in line strainer	Minimum 200 liters capacity.
11	SS Milk transfer pump	Minimum 10000 LPH capacity.
12	Facility to Measure volume:	SS calibrated dip Stick on both sides in the BMC tank with 0.5% calibration accuracy.
B	Refrigeration unit	
1	Type:	Hermetically Sealed scroll/ reciprocating
2	Compressor: c) Make d) Model	To be specified by the bidder. To be specified by the bidder
13	Condenser: c) Make: d) Model	Air Cooled, finned Tube Type To be specified by the bidder. To be specified by the bidder
14	c) No. of compressor d) Capacity of compressor(s). (Kcal/hr)	Two Min. 25833(Kcal/hr)
15	a) No. of fans b) Capacity of the condenser	Min. Two Min. 25833(Kcal/hr)
16	Overall dimensions and weight of the unit.	To be specified by the bidder.

17.	Type of refrigerant:R-22 or CFC free Environment Friendly refrigerant. Refrigeration Control Panel (Wall/Tank mounted)	Preferably R-22 To be specified by the bidder.
18.	Power Supply	Three Phase.
C	Design Parameters	
1	Ambient temperature considered for design	46 Deg C
2	Maximum cooling time considered c) ALL milking d) SECOND milking.	 3 hrs from 35 Deg C To 4 degC 1.5 hrs from 10 deg. C To 4degC
3	Temperature range considered c) ALL Milking. d) SECOND milking.	 35 Deg C To 4 degC 10 deg. C To 4degC
D	DG set	The specification given below are minimum. However bidder may give higher capacity D.G set as per their design & considering 10% extra load.
1	Make of the alternator Model of the alternator.	To be specified by the bidder. Stamford/ Leroysomler/Siemens

E.	Electricals	
1.	Connected load in Watts & Amperes for : e) Compressor(s) f) Condenser fan(s) g) Agitator(s). h) Milk pump	 To be specified the bidder To be specified the bidder To be specified the bidder To be specified the bidder
	Maximum / surge current drawn by the compressor(s)	Not more than 67 Amps.

NOTE: ALL THE INTER CONNECTING SS PIPES & FITTINGS FOR INSTALLATION & COMMISSIONING OF EQUIPMENTS IS IN SCOPE OF SUPPLY OF BIDDERS. SIMILARLY ALL THE ELECTRICAL SWITCH GEAR ITEMS FOR INTER CONNECTION FOR MAIN CONTROL PANEL, REFRIGERATION CONTROL PANEL, MILK TANK PANEL, ETC. AND CABLES ARE IN THE SCOPE OF SUPPLY. THE EARTHING MATERIAL WHEREVER REQUIRED IS ALSO IN THE SCOPE OF BIDDER.

SPECIFICATION FOR WEIGHING MACHINES

Make:-

Model: -

Capacity: - 200kg, Accuracy: - 20 g

S.S Platform size 600x600mm

Battery backup: - 24 hours

Display:- Dual VFD display 6 digit, 7 segment

Conversion:- K.G to liter

Capacity of load cell: - 500 kg for over load protection

Rs 232 provision: - Rs 232 data interface serial 6port for P.C & printer

Operating temperature:- 10 ² to 40² C .

Mouse protection:- Load cell & load cell cable are covered with flexible Metal wired for mouse.

Power :- AC 220V/ 50 HZ

It should have access to computer/ data Printing unit

N.B Stamping & verification of weighing machine by Odisha state department legal meteorology is within the scope of bidder at his own cost.

The bidder should have local service centre having adequate stock od spare parts, for failing which the offer shall not be considered.

The bidder should have supplied at least 10 nos of weighing machine & similar capacity in the state of Odisha.

D G SET

SPECIFICATION of 15 KVA DGSET

Air cooled single pages 0.80 P.F 230 V,1500 RPM,50 HZ

BHP-20/16

Cooling Medium- Air

Starting – automatic

A.VM pad- 6 nos

Control panel- Standard Control panel consisting of ammeture, Voltameter, MCB, indicating Lamp, cable, cable terminal complete with all other required instrument for the set.

Lub Oil & disel – initial filling for 8 hours trial run shall be provided

Eart pit.-2 nos

Base Frame Suitable base frame as per CPCB norms fabricated of Mild steel

Wiring : wiring from gen set up to change over switch through generator panel with flexible conduit pipe -7.5 mtr.

Change over switch : change over switch of reputed make 32 AMP -2 pole for 7.5 KVA/ 63 a -4 pole for 15 KVa.

Bore : 95 X110mm/102/x116 mm Dimension -1750x 820x 1600mm

The DG are as per ISO 8528 standard with all engine rating as per Is 10001 close coupled to self excited bush less A.c Genrator with 12 V electrical starting arrangement , battery terminal engine safeties, like low lub. Oil pressure switch HCT/ HCWT, stop, Solenoid, feed pump,100ltr Fuel tank.

The set shall be rated with continuous operation gor Refrigeration system, MilkTank Agitator, milk unloading pump, Hot water Geyser, lighting load etc.

The D.G set shall be provided with energy meter, change over switch, cable etc. inline with the capacity of Dg set.

The Engine Should rated for continuous running for 24 hours with an overload cap. Of 10 % for a period not exceeding 1 hour in any 12 hours running . valid BS certificate to be provided. Engine rating should be for operation at full load condition and suitable to take 100 block load.

The set should comply CPCB norms as per environment (protection) rule 1986-schedule-I All statutaory approval shall be compliance by the bidder at his own cost.

All statutory approval shall be compliance by the Bidder at his own cost.

- Bidder should have independent service station in the state of Odisha.
- Bidder should have provided at least 10 sets of DG set of similar / Higher capacity in the state Odisha.
- This is a turn key project hence Installation / Commissioning offered price should be uniform for all location.
- One set of consumable spare required for first servicing should be supplied on free of cost.

Voltage stabilizer (servo type) and single –phase preventer.

The system should have voltage stabiliser conforming to following features

and single phase preventer of suitable rating:

- Input Range- 90 V
- Input Range-300 V
- Output voltage –230 VAC/400 VAC
- Output self adjustable for a range of ± 5%
- Supply Frequency-47 to 53 Hz
- Load &Line Regulation-1%
- Voltmeter with facility to read input or output voltage
- High efficiency

Output A.C Voltage correction for wide input variations

- No output waveform distortion
- Fast correction of output voltage: 20V/sec
- Auto / manual operation facility
- Under-voltage and over- voltage cut out arrangement
- Compact and modular construction for ease in servicing
- M.C.B on input circuit

Accessories for 1 phase stabilizer:

63A MCCB for incoming, 63A phase selector, change-over and bypass switch, LED lamps, Servo controlled correction transformer, Digital V,I,F indicator for input & output,

63A terminal blocks, OV/UV trip with delay time, single phase preventer, static type energy meter with 10-60Acapacity. Brass metal glands, MCB's (DP 63A - 2 nos., DP 32A -1 no, DP 16A-1no), Metallic pump socket, Servo Motor.

Accessories for 3 phase stabilizer:

40A MCCB for incoming, 40A phase selector, change-over and bypass switch, LED lamps, Servo controlled correction transformer, Digital V,I,F indicator for input & output, 63A terminal blocks, OV/UV trip with delay time, single phase preventer, static type energy meter with 10-A capacity.

Brass metal glands, MCB's (TPN 40A - 2 nos., TPN 32A -1 no, TPN 16A-1 no), Metallic pump socket, Servo Motor.

Operating features

Cable entry from top, response time-5 milliseconds, should withstand 150% load on surge duty, capacity of terminals should be 150% of rated current, Dimmer with CRGO core, separate Auto/manual facility, plug in type control card for each phase, correction speed-105v/s, Efficiency-99.5%.

Domestic Power distribution board

Operating features:

It would get single / three phase power from grid supply directly as well as stabilized power from main control panel and feed power for lighting, electric geyser/solar water heating system, testing equipment/computers.