



NAME OF ITEM / WORK	:	DESIGN, SUPPLY, ERECTION, INSTALLATION, TESTING AND COMMISSIONING CURD AND BUTTER MILK MANUFACTURING PLANT AT KAKKALUR DAIRY, KANCHIPURAM - TIRUVALLUR UNION
TENDER NOTICE REFERENCE NO	:	3192/Proj.3/2022, Dated:04.04.2022

**PART - I
TECHNICAL BID**

THE TAMILNADU COOPERATIVE
MILK PRODUCERS' FEDERATION LTD
CHENNAI 600 035

Tender document issued to M/s. _____ Cost of Tender document remitted under receipt No. _____ Date _____ (or) Tender downloaded from website on _____ at free of cost

The Dy. General Manager (Engg.).

TENDER INFORMATION

1. Name and address of the Purchaser	:	The Dy. General Manager (Engg.), Tamilnadu Cooperative Milk Producers' Federation Ltd., Head Office, Aavin Illam, 3-A, Pasumpon Muthuramalinganar Salai, Nandanam, Chennai – 600 035. E-Mail: aavindgmeng@yahoo.co.in
2. Name and address of the User	:	The General Manager, Kanchipuram – Tiruvallur DCMPU Ltd.,
3. Name of the Item / Work	:	Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.,
4. Tender Reference Number	:	3192/Proj.3/2022
5. Tender Estimated Value	:	Rs.378.00 Lakhs
6. Earnest Money Deposit (EMD)	:	Rs.3,78,000.00
7. Cost of Tender Document	:	Rs.2,000/- + 18% GST and Rs.100/- extra by post either by cash or demand draft in favour of TCMF Ltd. payable at Chennai drawn from any Indian Nationalized Bank / Scheduled Commercial Bank. Alternatively, Tender documents can also be downloaded from the designated website at free of cost (i.e.) www.tenders.tn.gov.in and www.aavinmilk.com for submission of tender by post (or) courier / www.tntenders.gov.in for e-submission.
8. Sale of tender documents	:	From: 07.04.2022 To 11.05.2022 Time: 11.00 AM To 3.00 PM
9. Date of Pre-Bid meeting	:	Date: 20.04.2022 Time: 11.30 AM
10. Last date and time for submission of the two part tender – both technical and commercial bids.	:	Date: 12.05.2022 Time: 2.00 PM
11. Date and time of opening of Part I Technical Bid Document.	:	Date: 12.05.2022 Time: 2.15 PM
12. Date and time of opening of Part II Financial Bid	:	Financial Bid will be normally opened within 60 days from the date of opening of Part I pre qualifications-technical bid. The date of opening of Financial Bid will be informed to the eligible tenderers who are found and declared as qualified as per Part I technical bid.
13. Place of Sale of Tender Documents, Pre- Bid meeting & Part I Technical Bid and Part II Price Bid opening	:	The Dy. General Manager (Engg.), Tamilnadu Cooperative Milk Producers' Federation Ltd., Head Office, Aavin Illam, 3-A, Pasumpon Muthuramalinganar Salai, Nandanam, Chennai – 600 035.

INDEX

Sl. No.	Description	Page No.
1.	Technical bid – Check list	4 – 5
2.	Two Part Tender Application	6
3.	Instructions to the tenderers	7 – 8
4.	General Terms and conditions	9 – 18
5.	Pre-Qualification Criteria – Technical Bid (Part-I)	19 – 26
6.	Evaluation and Comparison of the Tender offer	27
7.	Technical Specification for Curd and Butter Milk Manufacturing Plant	28 - 82

1.0. TECHNICAL BID – CHECK LIST

PREAMBLE OF TENDER:-

1.1. The Dy. General Manager (Engg.), Head Office, TCMPF Ltd. invites Bids by way of **E-Submission / OFF Line** from eligible bidders on behalf of The General Manager, Kanchipuram – Tiruvallur DCMPU Ltd., by two cover system for Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.,

1.2. BIDDER TO FILL IN THE CHECK LIST GIVEN BELOW:

(State YES / NO for each item)

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1.3. The tender is offered for:

S.N.	Name of the work	Remarks	
1	Whether two covers for each item have been was sealed separately as "Technical bid" & "Commercial bid" (whichever is applicable) and both the covers enclosed in a common overall envelope duly superscribed as "Tender for Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.,	Yes / No	
2.	Whether the EMD amount as detailed below is enclosed in the technical bid		
Item No.	Name	EMD amount	Remarks
1.	Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.,	Rs.3,78,000.00	Yes / No
3.	If so, whether D.D. or Bank Guarantee is attached with the Tender offer - Part I / Tech.Bid		Yes / No
4.	If so, Details of D.D. or Bank Guarantee No. date, Bank on which drawn etc. may be furnished D.D./BG No(s)..... Dated..... For Rs..... Bank Name and Branch in favour of The Managing Director, TCMPF Ltd. payable at Chennai For E-submission the Earnest Money Deposit specified above may also be paid through online in TN e-Procurement Portal and scanned copy of proof for payment of EMD (ie. e-payment receipt) has to be uploaded.		Yes/No
5.	If EMD exemption is sought for, whether necessary documentary proof/evidence such as EM Part – II as per MSMED Act 2006 for SSI Certificate / Udyog Aadhar enclosed		Yes / No

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	in the technical bid for tenderers from the state and if from outside the state (Tamilnadu) whether NSIC certificate enclosed	
6.	Whether details of infrastructural facilities such as equipment / man-power / financial statement (FY - 2018-19, 2019-20 & 2020-21) details etc., are enclosed.	Yes/No
7.	Whether details of past experience (i.e) Purchase order copy(s) for same capacity (or) above of Curd and Butter Milk Manufacturing Plant	Yes/No
8.	Whether satisfactory performance certificate from client(s) for the above such supply with features mentioned in the technical specification tendered are enclosed	Yes/No
9.	If so, whether necessary supportive documents such as attested copies of Supply Order / Work order, delivery challans, enclosed.	Yes / No
10.	Whether copies of attested GST Registration certificates enclosed	Yes / No
11.	Whether copy of attested PAN card enclosed	Yes / No
12.	Whether the Minutes of Pre-Bid meeting duly signed and sealed has been enclosed along with Technical Bid Part-I	Yes/No
13.	Whether all the pages in the tender documents - Part I (Tech. Bid) and Part II (Commercial Bid) have been duly signed by authorized signatory	Yes / No
14.	Whether the Commercial bid is filled in detail in the prescribed format for break-up, equipment-wise and for abstract	Yes/No
15.	Whether these two sealed covers for Part - I "Technical Bid" and Part II - "Commercial Bid" - put in a larger cover duly superscribed, addressed and wax sealed at appropriate places.	Yes/No

Note: Please ensure that all the relevant boxes are marked YES / NO against each column.

Important Note: Bidders must ensure that all the required documents indicated in the tender document are submitted without fail. Bids received without supporting documents for the various requirements mentioned in the tender document are liable to be rejected at the initial stage itself.

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2. TWO PART TENDER APPLICATION

TECHNICAL (PRE-QUALIFICATION) BID & PRICE BID APPLICATION

From

M/s.

To

The Dy. General Manager (Engg.),
TCMPF Ltd.,
Head Office, Aavin Illam, 3-A,
Pasumpon Muthuramalinganar Salai,
Nandanam, Chennai – 600 035.

Sir,

Sub: Two Part tender – [Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.](#), – Submission of Documents – Regarding.

<><><>

Having examined the two part tender documents consisting of Part I technical bid pertaining to pre-qualification and part II commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me/us on behalf of in the capacity of duly authorized to submit this two part tender offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that The Dy. General Manager (Engg.), TCMPF Ltd., Chennai reserves the right to reject any tender offer fully or partly without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 120 days from the date of opening of Part – I – Technical bid.

Signature of the Applicant
Including title capacity

(NAME IN BLOCK LETTERS)

Enclosures:

1. Evidence of authority to sign
2. Latest brochures if any
3. Part I pre-qualification – Technical bid in separate sealed cover
4. Part II commercial bid with price quote in separate sealed cover.

3. INSTRUCTIONS TO THE TENDERERS

This two part tender document consists of:

Part I – Technical Bid for Pre-Qualifying

Part II – Commercial bid for price-quote schedule.

- 3.1 Read all the terms and conditions of the two part tender before to start filling up.
- 3.2 The tenderers are to submit the **original set** of the two part tender (both Part – I – Technical Bid and Part II Commercial Bid) duly filled in, attach necessary documents and are advised to retain the duplicate set of documents for records.
- 3.3 The part I – Technical Bid for Pre-qualification consisting of pages.....and the Part II – Commercial bid for price-quote schedule consisting of pages..... should be submitted in two different covers duly superscribed as "Tender for the [Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.,](#)" and again put both the sealed technical bid cover and commercial bid cover in a larger wax sealed cover duly superscribed as "[Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.,](#)" and addressed to "The Dy. General Manager (Engg.), TCMPF Ltd., Head Office, Aavin Illam, 3-A, Pasumpon Muthuramalinganar Salai, Nandanam, Chennai – 600035." either in person or by post so as to reach on or before the time and date specified. Tenders received after the specified date and time shall be summarily rejected.
- 3.4 The tenderer shall submit tenders in person or by post or courier or by electronic submission through the designated website www.tntenders.gov.in as provided in the TTTT Rule 18 (1) and 18 (3).
- 3.5
 - a). If the envelope is not sealed and super-scribed as instructed, no responsibility will be assumed for any misplacement of tender or premature opening of the envelope or parcel.
 - b). Telegraphic / FAX Tenders will not be accepted.
 - c). E-Tendering facility is available for this tender.
- 3.6 The quantities mentioned in the tender document are approximate. The tender accepting authority shall be permitted to vary the quantities finally ordered and execute the work through the contractor to the extent of 25% (Twenty five percent) either way of the requirements.

[I agree to abide by the above instructions](#)

SIGNATURE OF THE TENDERER

- 3.7 **Go through the check slip given and ensure compliance of the terms and conditions.**
- 3.8 The tenderer is specifically informed that all the pages in both Part I – Technical Bid and part II – Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.
- 3.9 The signatory of the tender should indicate his/their status in which he/they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him/them by the firm.
- 3.10 If the Qualification application is made by a FIRM in partnership, it shall be signed by all the partners of the firm with their full names and current address or by a partner authorized by the firm (either as per Articles of the Deed of Partnership / by power of attorney)- for signing in Tenders, Agreements etc. In which case, certified copy of the registered deed of Partnership along with the current address of all the partners and a certified photocopy of the Registered Power of Attorney issued in favour of the Signatory, should be produced.
- 3.11 If the Qualification Application is made by a Limited Company or a Limited Corporation, it shall be signed by a duly authorized person holding the Power of attorney for signing the application, in which case, the certified copy of the power of attorney shall accompany the qualification application. Such limited company or corporation shall also furnish satisfactory evidence of its' existence along with the Qualification schedule.
- 3.12 **The tenderer who are downloading the document from the web site are instructed to check the web site for corrigendum after the date of pre-bid meeting, for any amendments (pre-bid – minutes) (if any issued) They are instructed to down load the above amendments and enclose it along with the technical bid document duly authenticating while submitting without fail. Failure to submit the pre-bid minutes will lead to rejection of the tender offer.**
- 3.13 The tenderer shall provide Raw material test certificates, Manufacturer Test Certificates and also arrange to provide instrument for identification of material to conform as per technical specification during the inspection.
- 3.14 Detailed evaluation done on the basis of the Documents / Records / Evidences / Certificates produced by the Applicant in the Technical Bid.

I agree to abide by the above instructions

SIGNATURE OF THE TENDERER

4.0.GENERAL TERMS & CONDITIONS

- 4.1. Tender under sealed **two part tender system** (i.e.) Technical Bid (Prequalification) & Price Bid (item rate tenders) are invited for and **on behalf of The General Manager, Kanchipuram – Tiruvallur DCMPU Ltd.,** by The Dy. General Manager (Engg.), Head Office, TCMPF Ltd. for the **Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.,**
- 4.2
- 4.2.1.The tenderer should be a sole bidder / lead bidder or consortium partner (maximum two consortium partner is allowed)
- 4.2.2.The term tenderer / bidder in this document refers to sole bidder / lead bidder or consortium partner
- 4.2.3.The tenderer should be manufacturer / supplier of **Curd and Butter Milk Manufacturing Plant**
- 4.2.4. The tenderer should have previous experience in having **designed, supplied, installed and commissioned same capacity (or) above of Curd and Butter Milk Manufacturing Plant,** in India either to any cooperative institution or reputed dairies / firms.
- 4.2.5. The tenderer should have **designed, supplied, installed and commissioned same capacity (or) above of Curd and Butter Milk Manufacturing Plant,** for which tender called for, and enclose copies of purchase order / supply order within a period of 5 years.
- 4.2.6.The performance certificate for **above such supply for which Purchase Order / Supply order furnished as per 4.2.5** from the reputed purchaser shall be enclosed in the technical bid part – I. The performance certificate received from purchaser / client should be of within a period of 3 years.
- 4.2.7.The Tenderer should have minimum experience of 5 Years in the manufacturing, **design, supply, installation and commission** of **Curd and Butter Milk Manufacturing Plant.** Copies of Registration of firms with list of activities/GST registration certificate etc. should be enclosed as supporting document.
- 4.2.8.If the tenderer is an authorized dealer / supplier of original equipment manufacturer (OEM), the tenderer shall furnish the authorization letter from the original equipment manufacturer (OEM) for supply of **Curd and**

Noted and agreed to the above

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Butter Milk Manufacturing Plant. The original equipment manufacturer (OEM) can authorize only one dealer / supplier

4.2.9.If the tenderer is an authorized dealer / supplier for **Curd and Butter Milk Manufacturing Plant** then the experience of the manufacturer for supply of **Curd and Butter Milk Manufacturing Plant**, their performance shall be taken for evaluation of technical bids, even if the supply has been made either by the manufacturer directly or through other agencies.

4.3.

4.3.1 PART I TECHNICAL BID, wherein the pre-qualification, based on various factors such as supply, capacity etc., suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening of commercial Bids under PART II of the tender.

4.3.2.THE PART I technical bid shall be opened on **12.05.2022 at 02.15 PM.** in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.4.

4.4.1. The PART II Commercial Bid of the tenderers who do not satisfy any/all the terms and conditions specifically so mentioned under PART I technical, shall not be considered and shall not be opened as non responsive.

4.4.2.PART II Commercial Bid, wherein the rates tendered by those who qualify for and are selected as per the terms and conditions prescribed in PART I TECHNICAL BID only will be considered and decided for the award of the contract for the **Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.,**

4.5. The Part II commercial bids shall normally be opened within 60 days from the date of opening of the Part I pre-qualification/ technical bid in the presence of tenderers or their authorized representatives who opt to be present. The date of such opening of commercial bid will be informed separately to those who qualify in the PART I technical bid.

4.6. The tenderer is specifically informed that all the pages in both Part I – Technical Bid and Part II – Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

4.7. The tender forms are not transferable or assignable.

4.8. The signatory of the tender should indicate his/their status in which he/they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him/them by the firm. If

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the tender opening day is declared as a holiday, the tenders shall be received and opened immediately on the next working day at the same time and place.

4.9 E.M.D. PAYABLE:

4.9.1 Tender must be accompanied with the prescribed amount of EMD along with tender, **if e-tender, the EMD DD should be dropped in the tender box before closure time or may be paid through online in TN e-Procurement Portal and scanned copy of proof for payment of EMD (ie. e-payment receipt) has to be uploaded**

4.9.2 EMD Payable is as detailed below:-

Sl. No.	Name of equipment	Qty.	EMD amount
1	Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.,	1 Job	Rs.3,78,000.00

The EMD amount to be drawn by means of the **Demand Draft or it shall be submitted by means of Bank Guarantee for the period of 12 months and extendable as and when required** from any Indian Nationalised Bank or Scheduled Bank drawn in favour of the "Managing Director, TCMPF Limited," Payable at Chennai. **IT SHALL BE ENCLOSED WITH THE PART I TECHNICAL BID ONLY.** For e-Submission the EMD amount paid through online in the **TN e-Procurement Portal. No other form of remittance shall be accepted.**

4.9.3. SSI Units claiming exemption from the payment of EMD,

1. Shall enclose a copy of EM Part II as per MSMED Act 2006 for SSI Certificate obtained from the General Manager, District Industries Centre / Udyog Aadhar, in respect of items manufactured by them for which tenders have been called for alone will be granted exemption from payment of EMD.
2. In respect of SSI units located outside the state (Tamilnadu), such of these units registered with NSIC in respect of items manufactured by them for which tenders have been called for alone will be granted exemption from payment of EMD.

4.9.4. Tenders not accompanied with Demand Draft or Bank Guarantee or Online Payment towards the prescribed EMD or the relevant documentary proof for the exemption thereon shall be summarily rejected.

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4.9.5. The EMD remitted by the tenderer shall be forfeited in full.

- 1).If the tenderer submit fresh offer / revises offer in case of any omission subsequently after opening.
- 2).If withdraws his tender or backs at before the expiry of validity period or after acceptance.
- 3).If revises any of the terms quoted during validity period.

4.9.6. MODIFICATION AND WITHDRAWAL OF BIDS

4.9.6.1. No Tenderer shall be allowed to withdraw the tenders after submitting the tender.

4.9.6.2 A Tenderer may submit a modified Tender before the last date for receipt of tender: Provided that where more than one Tender is submitted by the same Tenderer, the lowest eligible financial tender shall be considered for evaluation.

4.9.6.3 Each bidder's modification notice shall be prepared, sealed, marked and delivered with the outer and inner envelopes additionally marked MODIFICATION as appropriate.

4.9.6.4 No bid may be modified after the deadline for submission of Bids.

4.9.7 Bidders shall submit offers that comply with the requirements of the bidding documents, as indicated in the technical specifications.

"Alternatives will not be considered".

4.9.8 Communication to the unsuccessful Bidders will be sent after the communication sent to the successful Bidder. Within 90 (Ninety) days from the date of the receipt of refund vouchers duly stamped and signed from the unsuccessful Bidder, refund of Earnest Money Deposit will be made.

4.10. PAN/GST REGISTRATION/CLEARANCE CERTIFICATE:

4.10.1. Tenderers shall furnish attested Photostat copies of valid GST Registration Certificates along with the tender technical bid Part-I.

4.10.2. Tenderers shall furnish attested Photostat copy of PAN Registration Certificates along with the tender technical bid Part-I.

4.10.3. Tenderers have to furnish the latest valid S.T. Clearance Certificate before issuance of final orders.

4.11. ENCLOSURES: The tenderer should submit the following documents **duly attested by Notary Public** along with the Part – I technical bid.

- 1). Purchase orders as supportive documents to show the past supply having supplied to any of the reputed dairies / firm(s) /coop(s) in India.

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- 2). Satisfactory performance certificate from client(s) for the above equipments tendered.
- 3). If the tenderer is an authorized suppliers of a manufacturer, the tenderer shall furnish the authorization letter from the manufacturer for supply of [Curd and Butter Milk Manufacturing Plant](#)
- 4). Photostat copies of valid GST Registration Certificate, PAN Certificate.
- 5). Infrastructure facilities – Capacity of Firm / Supplier:-
 - (i). Structure and Organization with details of Technical Personnel etc. – Annexure – A
 - (ii). Financial Capability Statement – Annexure – B
 - (iii). Building, Plant and Equipments
 - (iv). Details of Abandonment of work Litigation / debarring done – Annexure – C
 - (v). Affidavit – Annexure – D
 - (vi). Credit Facilities – Bank Certificate – Annexure – E

4.12. SECURITY DEPOSIT

The successful tenderers would be required to sign an agreement and furnish a Security Deposit of 5% of the order value, drawn by means of Demand Draft or it shall be submitted by means of Bank Guarantee for the period of 18 months and extendable as and when required from any Indian Nationalised Bank or Scheduled Bank drawn in favour of “Managing Director, TCMPT Ltd” payable at Chennai within 15 days of notifying them. The EMD already paid along with tender shall be adjusted against SD to be paid by the successful tenderer.

No exemption will be given from payment of Security deposit under any circumstances as per TTT Act and the same should be remitted by above means. Any other form of remittance will not be accepted.

4.12.1. The security deposit will be refunded only after the expiry of 6 months from the date of satisfactory completion of the contract satisfactorily complying to the specification of the equipment to take care of the workmanship of the agency.

4.13. AGREEMENT:

The successful tenderer has to execute an agreement on Rs.100/- non-judicial stamp paper incorporating the terms and conditions of the contract and the specification within 15 days from the date of intimation of the acceptance of the tender. In case of default of either of the

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conditions (i.e) remitting the security deposit or execution of the agreement within the time allowed, the EMD paid is likely to be forfeited by the Federation.

- 4.13.1. If the contractor fails to execute the contract satisfactorily at the tendered rate, the security deposit will be forfeited by the Federation.
- 4.13.2. If the Federation incurs any loss / additional expenditure due to the negligence of the contractor in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.
- 4.13.3. The breakages or damages, if any, caused by the contractor to the property of the Federation, the cost will be recovered from the contractor.
- 4.13.4. **RATES AND PRICE:** This is a fixed price contract. Price adjustment clause (to account for raise or fall in the money value / statutory taxes during the contract period) is not operatable for this contract. However any variation in the statutory levies and Taxes by State Government / Central Government shall be effected on the end price to the benefit of either the contractor or Federation as the case it may be.
- 4.13.5. No interest shall be paid on Earnest Money Deposit/Security Deposit.
- 4.13.6. The Agreement in Rs.100/- non-judicial stamp paper shall be signed and returned within 15 days of receipt of the Design, Supply, Erection, Installation, Testing and Commissioning order along with the D.D. for Security Deposit.

4.14. DELIVERY SCHEDULE:-

- | | | |
|---|---|--|
| 4.14.1. Supply | : | 3 - 4 months from the date of receipt of purchase order (or) 1 month from the readiness of site whichever is later |
| 4.14.2. Erection, Installation, Testing and Commissioning | : | 1 - 2 months from the readiness of site (or) receipt of Materials at site whichever is later. |

4.15. PAYMENT TERMS:

4.15.1. SUPPLY:

- a). If the single order of any successful tenderers is over Rs.1 crore., an advance payment of 10% of the basic value of the order will be considered

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against irrevocable bank guarantee for a period till completion of entire supply of [Curd and Butter Milk Manufacturing Plant Machinery / Equipments](#) and such advance shall be recovered with interest applicable at the time of recovery from the bills payable at the time of release of 70% basic price + taxes and other charges.

(OR)

70% of basic price + taxes and other charges shall be released on receipt of the [Curd and Butter Milk Manufacturing Plant Machinery/Equipments wise](#) in good condition at site.

- b). The remaining 30% payment shall be released after the Erection and satisfactory commissioning of the [Curd and Butter Milk Manufacturing Plant Machinery/Equipments wise](#) at site.

(OR)

If the site is not ready due to unavoidable circumstances for carrying out the Erection, Installation, Testing and Commissioning of the equipments within 3 months period, then the balance 30% payment on supply will be considered for release on submission of irrevocable Bank Guarantee for a value equal to 30% of supply order value, for one year and extendable for another one more year with an agreement on a non-judicial stamp paper to a value of Rs.100/- (Rupees hundred only) for execution of project subsequently without altering the Erection, Installation, Testing and Commissioning charges.

4.15.2. ERECTION, INSTALLATION, TESTING AND COMMISSIONING:

- a). 70% of the Erection, Installation, Testing and Commissioning charges shall be released on satisfactory completion of the Erection, Installation, Testing and Commissioning of the [Curd and Butter Milk Manufacturing Plant](#)
- b). Balance 30% of Erection, Installation, Testing and Commissioning charges shall be released after 3 months from the date of satisfactory commissioning and performance of the [Curd and Butter Milk Manufacturing Plant](#).

N.B: NO OTHER TERMS OF PAYMENT WILL BE ENTERTAINED.

PENALTY CLAUSE:

- 4.15.3. If the tenderer / Contractor fails in his due performance of the contract within the time fixed in the schedule accompanying the order or extension of time granted:-

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(a) Liquidated damages will be levied at 1% per month for the number of days that the supply / work has been delayed for the contract value less than Rs.50,00,000/- (Rupees fifty lakhs) as below subject to:-

(i). The Liquidated Damages be imposed on the value of undelivered / delayed supply of materials / machineries instead of total value of contract, if the tender is for the Design, Supply, Erection, Installation, Testing and Commissioning of two or more number of machineries and where the materials / machineries can be put into use separately.

(OR)

(ii). The Liquidated Damages be imposed on the total value of the contract for delayed supply / completion of material / work as per the milestone fixed in the tender (i.e) turnkey job inclusive of Civil work, supply of Mechanical/Electrical item, Erection etc., since the machineries partly supplied could not be put into operation and affect the functioning of system and other accessories as per plan.

(b). The Liquidated Damages be imposed for the delayed supply / Erection, Installation, Testing and Commissioning at 0.5% per month, if the contract value is more than Rs.50.00 Lakhs (Rupees fifty lakhs).

4.15.4. Time being the essence of contract no variation shall be permitted in the delivery time as prescribed in the delivery schedule. If the tenderer fails to supply and execute the work in full or part of the order as per the delivery schedule, the Federation shall reserve the right to cancel the order besides forfeiture of Security Deposit.

4.15.5. Notwithstanding anything contained in the tender schedule, no obligation rests on the Federation to accept the lowest tender and the Federation shall also have the right to accept or reject any or all the tenders fully or partly without assigning any reasons.

4.15.6. For violation of any of the terms and conditions of the contract, the Federation reserves the right to terminate the contract, with or without notice as applicable.

4.15.7. On termination of contract, the Security Deposit is liable to be forfeited and any of the resultant loss beyond Security Deposit will be recovered

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from the contractor by legal means apart from forfeiture of any amount due to the contractor.

4.15.8. (a). If the tenderer defaulted in any of the previous tenders to execute agreement or to pay Security Deposit or to supply ordered quantity either in part or full will not be eligible from participating in this tender.

(b). If the successful tenderer either in federation TCMPF or in the DCMPU defaulted to execute agreement or to pay Security Deposit or to supply ordered quantity either in part or full shall be debarred from participating in the subsequent tenders for a period of 3 years.

4.16. WARRANTY:

A warranty certificate shall be furnished on the workmanship, parts and performance of the [Curd and Butter Milk Manufacturing Plant](#) for a period of 18 months from the date of supply or 12 months from the date of satisfactory commissioning whichever is later. If any defects are noticed in the equipments during the warranty period the same should be rectified at site at free of cost and charges.

4.17. FORCE MAJEURE:

Failure or delay in the part of tenderer for supply due to force majeure causes enumerated here under shall be considered, provided the supplier produces documentary evidence.

- a. Any cause which is beyond the reasonable control of the tenderer.
- b. Natural phenomena, such as floods, drought, earthquakes and epidemics.
- c. Act of any Govt. Authority, domestic or foreign, such as wars declared or undeclared quarantines, embargoes licensing control on production or distribution restrictions.
- d. Accident and disruptions such as fire, explosion, increase in power cut with respect to date of tender opening etc.,
- e. Strikes, slow down and lockouts.

The cause of force majeure condition will be taken into consideration only if the supplier notifies within 30 days from the occurrence of such eventualities. The purchaser shall verify the facts and grant such extension as the facts justify. For extension due to force majeure conditions, the supplier shall submit his representation with documentary evidence for scrutiny by the purchaser and decision of the purchaser shall be binding on the time.

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4.18. DISPUTES AND ARBITRATION:

In case of disputes arising out of this tender, an arbitrator as mutually acceptable to the tenderer and Federation will be appointed by the Managing Director, TCMPF Limited. The arbitrator's decision shall be final, conclusive and binding on both the parties.

4.19. LEGAL JURISDICTION

In case if either party to the tender is aggrieved by the award of the arbitrator so appointed as per clause 4.18 or otherwise, they can appeal to Court of Deputy Registrar (Dairying), Thiruvallur. The legal jurisdiction will be only Deputy Registrar (Dairying), Thiruvallur Court.

4.20. PERFORMANCE GUARANTEE:

If the value of supply order is Rs.50 lakhs or more, the contractor shall provide a performance guarantee at the time of getting 70% payment for the 10% of the supply order value of the [Curd and Butter Milk Manufacturing Plant](#) ordered as Bank Guarantee from a Nationalized Bank / Scheduled Banks for a period of one year and extendable to one more year if needed.

4.21. INSPECTION:

After issue of purchase order to L1 Firm, the material inspection will be conducted at Supplier's site and Purchaser's by TCMPF Ltd., / Third Party agency as the case it may be.

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5.0. PRE QUALIFICATION CRITERIA – TECHNICAL BID (PART-I)

The pre-qualification tender/PART-I technical bid will contain the under mentioned aspects pertaining to the prospective suppliers about their suitability, capacity, financial status, antecedents, past performance etc. The conditions are:-

5.1. Tenders not accompanied with Demand Draft or Bank Guarantee or Online Payment towards the prescribed EMD or the relevant documentary proof for the exemption thereon shall be summarily rejected

- 5.1.1. The tenderer should be manufacturer / supplier of [Curd and Butter Milk Manufacturing Plant](#)
- 5.2. The tenderer should have previous experience in having [designed, supplied, installed and commissioned same capacity \(or\) above of Curd and Butter Milk Manufacturing Plant](#), in India either to any cooperative institution or reputed dairies / firms.
- 5.3. The tenderer should have [designed, supplied, installed and commissioned same capacity \(or\) above of Curd and Butter Milk Manufacturing Plant](#), for which tender called for, and enclose copies of purchase order / supply order within a period of 5 years..
- 5.4. The performance certificate for [above such supply for which Purchase Order / Supply order furnished as per 5.3](#) from the reputed purchaser shall be enclosed in the technical bid part – I. The performance certificate received from purchaser / client should be of within a period of 3 years.
- 5.5. The Tenderer should have minimum experience of 5 Years in the manufacturing, [designed, supplied, installed and commissioned of Curd and Butter Milk Manufacturing Plant](#). Copies of Registration of firms with list of activities/GST registration certificate etc. should be enclosed as supporting document
- 5.6. If the tenderer is an authorized dealer / supplier of original equipment manufacturer (OEM), the tenderer shall furnish the authorization letter from the original equipment manufacturer (OEM) for supply of [Curd and Butter Milk Manufacturing Plant](#). The original equipment manufacturer (OEM) can authorize only one dealer / supplier.
- 5.7. If the tenderer is an authorized dealer / supplier for [Curd and Butter Milk Manufacturing Plant](#), then the experience of the manufacturer for supply of [Curd and Butter Milk Manufacturing Plant](#), performance shall be taken for evaluation of technical bids, even if the supply has been made either by the manufacturer directly or through other agencies.
- 5.8. The tenderer who are downloading the document from the web site are instructed to check the web site for corrigendum after the date of pre-bid meeting, for any amendments (pre-bid – minutes) (if**

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any issued) They are instructed to download the above amendments and enclose it along with the technical bid document duly authenticating while submitting without fail. Failure to submit the pre-bid minutes will lead to rejection of the tender offer.

5.9. **FINANCIAL:** The tenderer shall have *average annual sales turn-over for the last three financial years (2018-19, 2019-20 & 2020-21) equal to the tender estimated value and minimum annual sales turn-over in each of the last three financial years (2018-19, 2019-20 & 2020-21) shall not be less than 50% of the tender estimated value*

5.10. VALIDITY OF PRICE TENDER:

- a). The tender offer shall be kept for acceptance for a period of 120 days from the date of opening of Part – I Technical bid. The offers with lower validity period are liable for rejection.
- b). Further the tenderer shall agree to extend the validity of the bids without altering the substance and prices of their bid for further period, if any required by Federation (i.e) The Price Bid shall be valid for a period of at least 90 days (Ninety Days) from the date, notified for opening of Price Bid.

5.11. DEVIATION:

- a). The offers of the tenderers with deviations on technical / commercial terms of the tender will be rejected.
- b). No alternate offer will be accepted.

5.12. Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- a). Made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- b). Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.; and/or
- c). Participated in the previous bidding for the same work and had quoted unreasonably high bid prices and could not furnish rational justification to the employer.

5.13. The bidder should submit the proposed tentative P and I drawing, General plan for the above [Curd and Butter Milk Manufacturing Plant](#) in the Technical bid.

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Annexure – A
STRUCTURE AND ORGANISATION

1	Name of the Applicant	:	
2	Status	:	
	Individual contractor	:	
	Sole Proprietary Firm	:	
	Firm in Partnership	:	
	Private Limited Company	:	
	Public Limited Company	:	
3	Head Office/Registered office address with phone / Telex / Fax Number	:	
4	Contact Person Name Address Mobile No Email Address	:	
5	Regional Office address with Phone / Telex / Fax Number	:	
6	Local office (if any) address with Phone / Telex / Fax Number	:	
7	Field of activity of the Applicant as per deed of Partnership / Memorandum of Association / Articles of associates (Civil) Engineering Contractor / General Engineering Contractor / Electrical Items - Engineering Contractor etc, should be specified.)	:	
8	Country and year of incorporation	:	
9	Main line of Business	:	
10	Name, position, status, capacity etc, of the Key personnel/ directors of the company (Attach organization chart showing the structure of the company / firm)	:	
11	Name, capacity and address of the signatory who has Signed the Qualification Application. Attested copy of authorization issued (either by power of attorney or as per articles of Partnership Deed / Memorandum of Association) in favour of the signatory to sign the qualification Application price Tender/ Agreement should be appended.	:	

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Annexure – B
FINANCIAL CAPABILITY
(Please Annex self attested copies)

1	Name and address of the Applicant	:				
2	Income Tax Permanent Account No. C.I. H. No.	:				
3	GST Registration No.	:				
4	Annual turn over as per audited statement of account duly certified by the Chartered Accountant during the preceding Three years (Attach attested copy of balance sheets)	:	TAX Year	Figures	Words	
		:	2018-19			
		:	2019-20			
		:	2020-21			
5	Financial Position	:				
	I. Cash in hand	:				
	II. Cash in Bank	:				
	III. Current Assets	:				
	IV. Current Liabilities	:				
	V. Working Capital	:				
6	VI. Net worth	:				
	Outstanding value of works already committed and in progress and time left for completion. (Details for each work to be furnished separately)	:				
	7	Amount available in capital Account	:			
		I. Paid up share capital of (Partners or Share holders)	:			
		II. Called up and subscribed share capital	:			
		III. Reserves under capital account	:			
	IV. Surplus under capital account	:				

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		:	TAX Year	Figures	Words
8	Net profit before tax during the proceeding three years	:	2018-19		
		:	2019-20		
		:	2020-21		
		:			
9	Applicant's financial arrangements.	:			
	(a) Own resources	:			
	(b) Bank credits/ Over Draft	:			
	(c) Other source (Specify the source)	:			

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Annexure – C
**INFORMATION REGARDING CURRENT LITIGATION / DEBARRING /
EXPELLING OF APPLICANT OR ABANDONMENT OF WORK BY THE
APPLICANT**

1. (a) Is the Applicant currently involved in any Arbitration /
litigation relating to any contract works Yes/No
(b) If Yes, Details thereon
2. (a) Has the Applicant or any of it's constituent partners
been Debarred/Expelled by any agency during the
last Three years Yes/No
(b) If yes, Details thereon
3. (a) Has the Applicant or any of it's constituent Partners
failed to complete, any contract work during the past
Three years. Yes/No
(b) If yes, give details thereon

Dated Signature of Applicant with seal

Note: If any information in this Annexure is found to be incorrect or concealed,
the Qualification Application will be summarily rejected & price tender will
not be opened.

**Annexure – D
AFFIDAVIT**

**(To be furnished in a Twenty Rupees Non-Judicial Stamp Paper
duly Certified by Notary Public)**

- 1). I/We the undersigned solemnly declare that all the statements made in the documents, records etc., attached with this application are true and correct to the best of my/our knowledge.
- 2). I/We the undersigned do hereby certify that neither my/our firm/company nor any of it's constituent partners have abandoned any work/works of similar nature and magnitude in India, during the Last Three years.
- 3). I/We the undersigned do hereby certify that any of the contracts awarded to me/us has not been terminated rescinded, due to breach of contract on my/our part, during the last Three Years.
- 4). I/We the undersigned authorize (s) and request any bank / person / firm / corporation / Government Departments to furnish pertinent information deemed necessary and requested by The Dy. General Manager (Engg.), TCMPF Ltd., Head Office, Aavin Illam, 3-A, Pasumpon Muthuramalinganar Salai, Nandanam, Chennai – 600 035 to verify the statement made by me/us or to assess my/our competence and general reputation.
- 5). I/We the undersigned, understand(s) that further qualifying information / clarifications on the statement made by me / us may be requested by The Dy. General Manager (Engg.), TCMPF Ltd., Head Office, Aavin Illam, 3-A, Pasumpon Muthuramalinganar Salai, Nandanam, Chennai – 600 035. and agree(s) to furnish such information/ clarification within SEVEN Days from the date of receipt of such request from The Dy. General Manager (Engg.), TCMPF Ltd., Head Office, Aavin Illam, 3-A, Pasumpon Muthuramalinganar Salai, Nandanam, Chennai – 600 035.

Dated Signature of Applicant with Seal:

To be signed by the officer authorized by the Firm/Company to sign on behalf, the Firm/Company with company's seal)

Note: In case of sole proprietary concern, affidavit should be signed only by the sole proprietor.

(Title of the Officer)

(Title of the firm/Company)

(Date)

The above named deponent has understood the contents well and solemnly and sincerely declared and affirmed by the deponent in my presence at.....and signed before me on this day of
(Seal).

(Signature of the Notary Public)

Annexure – E
SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF
CREDIT FACILITIES

BANK CERTIFICATE

This is to certify that M/s is a reputed company with a good financial standing.

If the contract for the work, namely, _____ is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs..... to meet their working capital requirements for executing the above contract.

Signature of Senior Bank Manager

Name of the senior Bank Manager

Address of the Bank

Stamp of the Bank

Note: Certificate should be on the letter head of the bank.

6.0 EVALUATION AND COMPARISON OF THE TENDER OFFERS

- 6.1. The tenders will be evaluated strictly as per the Tamilnadu Transparency in Tenders Act 1998 and the Tamilnadu Transparency in Tenders Rules 2000 and amendments made thereon in the Act & Rules by the Government.
- 6.2. The tender offers received will be examined to determine whether they are in complete shape, all required data's have been furnished, properly signed and generally in order and confirms to all the terms and conditions of the specification without any deviation.
- 6.3. For the purpose of evaluation of tender offers, the following factors will be taken into account for arriving the evaluation price.
 - a). The quoted price will be corrected to arithmetical errors.
 - b). In case of discrepancy between the price quoted in words and figures, lower of the two shall be considered.
 - c). The evaluation of offer will be computed by taking into account Design, Supply, Erection, Installation, Testing and Commissioning put together.
- 6.4. Bidders should quote their rates both in figures and in words for each item per unit and amount for each item of work for full quantity. Grand total of the whole contract should be furnished without fail in the Price Quote Schedule of Price Bid.
- 6.5. The bidder shall fill in rates and prices and line item total (both in figures and words) for all the items of the works described along with total bid price (both in figures and words). Items for which no rate or price is entered by the bidder will not be paid for by the purchaser when executed.
- 6.6. The evaluation for L1 shall be on total end price of all items.

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**7.0. TECHNICAL SPECIFICATIONS DESIGN, SUPPLY, INSTALLATION,
TESTING AND COMMISSIONING OF CURD AND BUTTER MILK
MANUFACTURING PLANT AT KAKKALUR DAIRY, KANCHIPURAM –
TIRUVALLUR UNION.**

1.1 BACKGROUND

Kakkalur Dairy site is located in Kanchipuram – Tiruvallur district and the capacity of the Dairy is 100000 Liters per day. With the increasing milk production in the district and the procurement by the union, there is a need for new curd and butter milk manufacturing plant. The union is proposing to set up a curd and butter milk manufacturing facility at Kakkalur Dairy premises to cater the need of the district and future demand.

The Tender comprises of design, engineering, supply, installation, testing and commissioning of Milk Receiving, processing, Curd and Butter milk production, packing and storage.

The design and layout of the facilities, selection of equipment and services, methodology of plant execution, testing and commissioning shall be carefully planned and executed with the knowledge of normal operational & processing routines of the composite fermented production plant.

The general technical specification of the major components and the ancillary items described in the technical section, its capacities and quantities proposed by the Purchaser are furnished in the '**Basis of Design**' and '**Bill of Quantities (BOQ)**'. These are only for the guidance of the bidders to quote their prices on comparable basis. However, it shall be construed and understood that bidder is familiar / acquainted about the nature and the quantum of work involved and has submitted his offer without deviating the basic configuration of the plant.

The quantity of pipes, fittings, valves, cables, cable trays, earthing, instruments, structural and supports etc. are to be offered based on the actual requirement at site. The bidder shall have to work out the details based on the system offered.

1.2 REQUIREMENTS OF THE PROCESS PLANT:

Plant basis and Utility basis:

Plant operations	24 hours a day
Electricity Charges	Rs. 8.5/KW unit
Steam Charges	Rs. 4 / Kg of Steam
Source of Water	Open well
Building	Existing building.
Raw Milk	Received through milk lines from Dairy.

Noted and agreed to the above

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1.3 WORKING CONDITIONS:

Site work of every nature has to be planned and executed with the knowledge of site conditions. The design and layout of the new facilities, selection of equipment and services, methodology of project execution, testing and commissioning should all be carefully planned with this point in mind.

1.4 PROJECT TIME SCALE:

The Plant should be completed in time as specified in the IFB of this tender. Product trials are to be commenced at the end of this period.

1.5 SITE CONDITIONS:

Altitude above Mean Sea Level (Meters): Approx. 7
Average Ambient Temperature (Deg C) : 28 - 34 max
Minimum Ambient Temperature (Deg C) : Around 25
Relative Humidity (%) : 63

1.6 SITE ADDRESS:

The plant shall be installed in the Kakkalur Dairy building premises.

INSTRUCTIONS TO BIDDER

- This Sub - Section of the tender defines the way that bidder is required to structure the presentation of the technical section of their bid.
- All technical data required by the tender is to be provided in the format given in this Sub - Section. If no format is given for any specific item the bidder may submit bid in their format
- Any bidder not following the required bid document structure of presenting technical data that is not in the required format is liable to be deemed non- responsive

2.0 BID STRUCTURE OF TECHNICAL SECTION

2.1 The technical section of the bid is to be structured in the same order as Tender Document. Each statement is to be numbered with the same Sub-section and paragraph number as in the Tender Document. Every page of the technical section of the bid is to be numbered. Section number is also indicated in every page. The general structure, therefore, is to be as follows:

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Sub – Section	Subject
1	Introduction
2	Instruction to the Bidders
3	Design Basis
4	Responsibilities
5	Project Management
6	Scope of Supply and Technical Specifications (Tender package)
7	List of Preferred Makes of Major Bought Out Items
8	Battery Limits
9	Deviations from Technical Requirements
10	Optional Items

2.2 The bidder is to cover each requirement of the Tender Document by statements, technical data and descriptive material and, in particular to detail the following section

SUB - SECTION 1: INTRODUCTION

Brief Introduction of the tender is given including the site working conditions.

SUB - SECTION 2: INSTRUCTIONS TO THE BIDDER

Instructions are provided but not limited to, to the bidder to provide the technical bid in line with the tender sequence and details.

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SUB - SECTION 3: DESIGN BASIS

Preamble

The bidder is to describe his technical proposal in details, stating the processes and systems, which he has applied in designing the plant. Also to highlight any special technical innovations that the bidder proposes to include in the plant that will improve the performance, reduce operating cost or improve product quality. The "Preamble" should commence at the start of the process and work logically through the process. Any such highlights should be cross-referenced with the Bid sub-Section and paragraph number to which they apply.

The bidder is required to follow the Basic of Design in the tender and indicate clearly where additional processes or alternative processes of equipment are considered to be necessary or desirable to achieve optimum plant operation efficiency, optimum product quality within the standards specified, and optimum plant operation convenience.

SUB - SECTION 4: RESPONSIBILITIES

Responsibilities of the Bidder:

The bidder is required to specifically state his acceptance or non-acceptance of each clause in this sub-section. Non acceptance shall be deemed a deviation from the tender and should be mentioned in deviations, Sub - Section 8.

Responsibilities of Client:

The bidder is required to state here any additional responsibilities that he consider are to be borne by Client besides those described in the tender.

SUB - SECTION 5: PROJECT MANAGEMENT

- **Time Schedule**

The bidder is to state in this subsection the proposed program of implementation from receipt of order to commencement of product trials, to be provided as per Sub - Section 10.

- **Management Team**

The bidder is to provide detail of the management team in terms of designation, accordance with this Sub - Section of the tender. Also to quantify the support that will be given by foreign collaborators, with designation and man months of attendance in India and at site.

This bidder is to ensure that the following Sub - Sections are fully detailed and quantify the duration and manpower supplied to each.

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- **Commissioning**
- **Product trials**
- **Training**

SUB - SECTION 6: SCOPE OF SUPPLY & TECHNICAL SPECIFICATIONS (TENDER PACKAGE)

The bidder is required to follow the sequence of the tender Document and to make a statement on each paragraph. **Do not** leave any item without a clarify statement.

SUB - SECTION 7: LIST OF PREFERRED MAKES OF BOUGHT OUT ITMES

Bidder to strictly follow the list of preferred makes of Bought out items and shall select a make for supply out of the list only. Make selected by the bidder other than the said list shall be considered as Deviation from the tender and should be mentioned in deviations. All given makes are preferred however the bidder to get the approval from the consultant/client before placement of order to the sub-vendor during execution.

SUB - SECTION 8: BATTERY LIMITS

Battery limits for the plant are mentioned in this sub-Section.

SUB - SECTION 9: DEVIATIONS

All technical deviations are to be stated. This is mandatory, and failures to comply with make the bid liable to be deemed non-responsive.

SUB - SECTION 10: OPTIONAL ITEMS

Items that the bidder includes in this Sub - Section that are considered by evaluation team to be essential to the satisfactory operation of the plant, shall be included in the commercial evaluation of the bid.

3.0 DESIGN BASIS:

3.1 INTRODUCTION:

Kancheepuram - Tiruvallur Union is setting up a Curd and Butter Milk manufacturing unit at their Kakkallur Dairy.

3.2 Scope:

The Tender comprises of design, engineering, supply, installation, testing and commissioning of Curd Milk processing, Packing, Butter milk preparation, packing and storage.

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The scope of work includes:

- Curd plant:
 - a) Pasteurized and Homogenized Whole Milk at 5°C will be received through milk lines from dairy which shall be stored in the 5 KL storage tank.
 - b) The stored whole milk will be standardized as per requirement by adding Skim milk powder and skim milk through dry blender and chilled to 4°C. The prepared milk then taken for processing and production of the Curd and Butter Milk.
 - c) The Milk is pasteurized through Curd Milk Pasteurizer and stored in the processed milk storage tanks of capacity 3 KL at 4°C. The pasteurizer shall have the provision to take outlet milk at 40 to 45°C which shall be taken to inoculation tank where culture is added and packed.
 - d) The milk from the processed milk storage tank shall be taken through pre heater of capacity 1 KLPH and sent to inoculation tank where culture is added and packed.
 - e) The inoculated milk is packed in sachets through a pouch filling machine.
 - f) The packed milk is stored in incubation room and shifted to Blast freezer and then to Cold room.
 - g) The pasteurized milk from Curd pasteurizer at 40 to 45°C shall be taken to double jacketed curd incubation tank of capacity 1KL for Butter milk preparation.
 - h) Butter milk is prepared from the set curd in the tank through high shear mixer pump and chillers. Necessary spice ingredients are added through spice grinding machine.
 - i) A CIP system with single circuit to carry out the cleaning of various equipment of Curd and Butter milk plant including, milk reception line, milk tanks, milk reconstitution equipment, curd pasteurizer, Inoculation tanks, incubation and settling tanks, spice mixing tanks, sachet.
 - j) Process utilities (CWS/CWR/Steam/RW/SW) for the equipment of Curd and Butter milk production plant from the service block as per battery limit.
 - k) Compressed air generation system with distribution lines up to the consumption points.

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SIGNATURE OF THE TENDERER

l) Process & CIP MCCs including all cabling, electrical etc.

m) Supply & commissioning of Electrical distribution system with MCCs, power & control/instrumentation cables, cable trays (GI & SS), SS drop conduits pipe in process section, earthing, isolators, RCPs, insulating elastomer mats etc for the plant.

• The Mechanical scope comprise of following:

1. Design, engineering, supply of Milk Reception, curd and Butter milk Processing, Packing and storage Plant with all accessories and utilities piping, MCCs and cabling etc.
2. Labour charges and consumables for installation, testing and commissioning of Milk Reception, curd and Butter milk Processing Packing ad storage Plant with all accessories and utilities piping, MCCs and cabling etc.

All the equipment for the plant/systems shall be designed, engineered, supplied and installed in accordance with the prevailing and applicable standards (in general all major equipment and processes should be in line with *fssai* requirements).

PROPOSED CURD AND BUTTER MILK PACKING AND SIZING IS AS FOLLOWS

SL NO	PRODUCT	TYPE OF PACKING	SIZE	PER DAY PRODUCTION
1	CURD	SACHET	150,200,500 g	5000 KGS
2	BUTTER MILK	SACHET	200 ML	1000 LITERS

The above breakup for Curd and Butter milk product type is tentative and final shall be provided by the union.

4.0 BASIS OF DESIGN:

4.1 General Description:

This project includes the total work involved in Design, Engineering, Supply, Installation, Testing and Commissioning of Curd and Butter milk product production and packing plant.

4.2 Milk Receipt:

Chilled, Pasteurized and Homogenized whole milk shall be received

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through milk lines from the existing Dairy plant. Separate milk line should be provided from the existing plant with suitable pumps and flow plates if required. The scope of the pipeline and accessories are in the scope of the bidder. The received Milk shall be stored in the Vertical Tank of capacity 5 KL. The silo and lines shall have the facility of CIP cleaning.

4.3 Reconstitution and Batch Preparing:

The necessary standardization shall be carried out through the Dry blender of 500 Kgs/Hr and with multifunctional PHE (which can do both chilling and make warm milk or water for SMP dissolving) of 5 KLPH in the storage tank. The capacity of the shear pump and turbo blender is 500 kg /hr with TS of 30%. The recirculation pump should have a higher capacity than the shear pump. The reconstituted milk has to be dosed to the milk storage tank for curd milk processing.

4.4. Milk Process section:

The prepared milk from the 5 KL storage tank is pasteurized using a 3 KLPH Process line constitute of 3 KLPH multi functional PHE . The pasteurizer should be designed in such a way that the milk should be heated to 90° C and holding it for 20 minutes (The holding coil should be designed in such a way that holding of milk at 90° C can be done for 20 minutes and if required for 10 minutes also).There should be a provision in the holding coil for separate CIP . The milk for curd should be pasteurized and cooled in different cycles as mentioned below. Provision for connecting homogenizer and separator should be given in the PHE. The system should work with PLC arrangements. Necessary level controls for low level high level and level switches to start the pumps should be provided for the Pasteurizer balance tank.

HTST Pasteurization plant:

- 1)4⁰C- 65⁰C- 90⁰C for 20 /10 minutes and 40⁰C
- 2)4⁰C- 65⁰C-90⁰C for 20/10 minutes and cooled to 4⁰C

Pre Heater:

A suitable PHE for pre heating the pasteurized milk at 4⁰ C with a capacity of 1 KLPH along with the skid should be provided. The Pre heater should be designed in such a way that the pasteurized milk stored in the storage tanks should be heated to 42-45⁰ C and transferred to inoculation tanks for inoculating the inoculums. The pre heater should be provided with suitable processed water push arrangements to flush out all the left over milk particles in the milk line starting from pasteurized milk storage tank , pre-heater and up to inoculation tank. Individual CIP lines are to be provided to the pre heater and connecting lines so as to perform CIP without making any hindrance to the curd pasteurizer.

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Suitable pumps/booster pumps and T.H.E arrangements should be provided along with the Pasteurizer skid.

The pasteurized milk shall be stored in 2 x 3 KL storage tanks. All the above equipment should be provided with auto CIP arrangements.

4.5 Curd Milk preparation and packing section:

The processed milk stored in tank at 4°C is preheated using a 3KLPH HTST pasteurizer Pre heating module with necessary heating arrangements through steam. The milk at 43-45° C is fed to the two 500 Liter capacity inoculation tanks where mixing of culture is carried out. The inoculation tanks are to be insulated and provided with suitable designed agitator. The inoculation tanks agitator shall be provided with timer to set the timing for agitation after inoculation. The inoculated milk is connected to sachet packing machine to pack 5000 sachets/hour in sachets. The flow of milk from inoculation tank to packing machine should be facilitated with gravity flow. Necessary structures are to be provided to elevate the inoculation tanks for required gravitational force. Easy access to the elevated inoculation tanks should be provided for inoculating the inoculum. In certain cases the milk will be directly fed to the inoculation tank from HTST pasteuriser and inoculated at 45° C in the culture tank.

There should be facility to pack inoculated milk in sachet packing machine. There should not be any collar fitting and plug valves in the culture inoculated lines. All the lines shall be TIG welded. There should be facilities like platforms for adding culture in the inoculation tank

All the above equipment should be provided with auto CIP arrangements.

4.6. Butter milk Section:

The pre heated STD milk from 3 KLPH pre heater or from pasteurizer is fed to a 1 KL inoculation cum incubation tank for adding culture and preparing curd for butter milk. Necessary storage tank to store pasteurized / RO water is to be provided and arrangements for mixing the water with the curd in the incubation tank through shear pump of suitable capacity are also to be provided. The necessary arrangements to add pasty green spice components in the tank are to be provided. A suitable industrial type mixer grinder should be provided for grinding the green spices. Suitable filters shall be provided for filtering the buttermilk.

The butter milk is then chilled at 4 ° C using a suitable PHE and pumped to the butter milk overhead filling tank of capacity 500 Lts . The butter milk is packed in sachets and a separate packing machine of 5000 Packets/hr is to be provided. The flow of butter milk to the packing machine is facilitated with gravity flow.

All the above equipment should be provided with auto CIP arrangements.

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5.0. AUTOMATIC CIP SYSTEM (SINGLE CKT) FOR CURD AND BUTTER MILK EQUIPMENT

The concentrated acid and lye solution will be received and be unloaded in concentrated acid and lye service tanks of 300 Liters capacity in the CIP system. The chemical transfer pump shall be pneumatically operated double diaphragm type in SS 316. SS 316 tray shall be provided for below concentrated acid & lye tanks, chemical unloading and transfer pumps. Caustic flakes dissolving provision shall be provided with agitator in case the liquid lye is not available in the service tank.

The plant shall have CIP facility for milk reception line, reconstitution and batch preparing line, Milk process line, curd milk preparation and packing lines and butter milk line.

Cleaning / Controls / Programme

The CIP system shall generally comprise the following sequence.

- Rinse with recuperation water
- Hot detergent circulation
- Hot/Cold water rinse
- Hot acid circulation
- Hot/Cold water rinse
- Hot water sterilization etc.

All the operations are to be made from the CIP control panel with PLC.

At the end of detergent and acid cleaning, the solution shall be recovered with the help of sensors provided in the return line and sub-standard solution shall be automatically diverted to drain.

Intermediate rinse shall be with plain hot/cold water and this shall be recovered and re-used after acid circulation.

The alkaline/acidic traces shall be removed with the help of cold/hot water. Hot water rinse shall ensure satisfactory cleaning of the lines and equipment. Final rinse water shall be recovered in the recuperation tank.

Concentration of detergent and acid shall be maintained with the help of an automatic dosing system equipped with necessary conductivity probes.

The completion of CIP of every circuit shall be signalled with an audio-visual alarm in the main panel.

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The temperature & concentration of cleaning solution will be continuously monitored and corrected automatically. In case of non-compliance of any of the parameters, the sequence shall remain suspended for such time and resume to "NORMAL" when corrected.

The route for CIP circulation shall be pre-programmed. The solution spray in silos/tanks shall be through spray ball or rotary jets. CIP solution shall be returned back to CIP tanks through self-priming CIP return pumps in each route.

If the program execution stops at particular step due to power failure or some fault, then commencement of program execution, after rectification, should be from the same step where the program was terminated.

Sequence of operation & detergent/acid consumption will be automatically recorded in the HMI and shall be recalled on the screen on demand.

6.0. TECHNICAL SPECIFICATION

6.1 MILK RECEPTION SECTION:

MILK STORAGE TANK QTY: 1 NOS

- Function To store chilled milk at 4 deg C temperature
- Construction Double walled, insulated, welded, sanitary design.
- Design Vertical Sanitary
- Finish SS surfaces polish by 150 grit
- Capacity 5,000 Liters (volume of tank after filling it up to the rated capacity Shall be at least 100 mm below the line where cylindrical shell joins the conical top)
- Metal Contact insulated padding fixed between inner SS shell and stiffeners
- Slope 1:15 slope towards outlet for free & complete drainage Joint Curvature Radius of welded & permanent attachment joints least 6mm.
- Installation: The accessories mounted on top Shall be weather proof.
- Inner Body * Shell 2mm / SS 304
 - Flat Bottom & top conical dished-end : 3.5mm/ 304
- Outer Body * Shell 2mm / SS 304
 - Flat Bottom top conical dished-end : 3.0mm/ SS 304
- Stiffeners Between inner and outer shells and supporting structure

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SIGNATURE OF THE TENDERER

- Insulation The inner SS shell Shall be thermally insulated with 100mm thickness PUF at 40 Kg/M³ density.
- Inlet-cum out: Cup type bottom inlet cum outlet with two way plug type SS (AISI 304).
- CIP inlet at Top at the centre of conical dish end
- Air Vent 450mm air vent to prevent formation of partial vacuum

6.2 CIP RETURN PUMP:

Application	Shall be used to return CIP to station
Design	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Cr v/s SS (Carbon face v/s SS Face)
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/Rpm	2.25/3/2900

6.3. MILK TRANSFER PUMP

Application	Shall be used to transfer milk to process section
Pump	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Cr v/s SS (Carbon face v/s SS Face)
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/RPM	2.25/3/3000

6.4 RECONSTITUTION MILK STORAGE & PROCESS MILK TANK TANK QTY: 2 NO

Function	Shall be used for batch preparation
Construction	Double walled, insulated, welded, sanitary design.
Design	Vertical Sanitary
Finish	SS surfaces polish by150 grit
Capacity	3000 Liters (volume after filling it up to the rated capacity Shall be at least 100 mm below

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SIGNATURE OF THE TENDERER

	the line where cylindrical shell joins the conical top)
Metal Contact	insulated padding fixed between inner SS shell and stiffeners
Slope	1:15 slope towards outlet for free & complete drainage
Joint Curvature	Radius of welded & permanent attachment joints least 6mm.
Installation:	The accessories mounted on top Shall be weather proof.
Inner Body	* Shell 2mm / SS 304 * Flat Bottom & top conical dished-end : 3.5mm/ 304
Outer Body	* Shell 2mm / SS 304 * Flat Bottom top conical dished-end : 3.0mm/ SS 304
Stiffeners	Between inner and outer shells and supporting structure
Insulation	The inner SS shell Shall be thermally insulated with 100mm thickness PUF at 40 Kg/M ³ density.
Inlet-cum out	Cup type bottom inlet cum outlet with two way plug type SS (AISI 304)
CIP inlet	Top at the centre of conical dish end
Air Vent	450mm air vent to prevent formation of partial vacuum during CIP and pressure during filling.
Agitator	Side agitator (AISI 304) agitator complete with mountings, gear box & motor and Shall be able to uniformly agitate. The agitator shaft Shall be of single piece rod
Man way	Man way of 550 x 405 insulated SS door with tightening and locking device The gasket Shall be of neoprene or nitrite rubber of food quality.
Blasted Level Marks	500 L intervals on the inner shell
Sight Glass	Sight glass assembly with toughened glass
Light Glass	Light glass assembly with toughened glass & lampshade
Spray Ball	Removable cleaning device located on conical top at either side of the agitator drive to provide flooring of Liquid over the complete interior surface and agitator during CIP.

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SIGNATURE OF THE TENDERER

Sampling Cock	Provided on the inlet-cum-outlet of sanitary design.
Thermo well	300 mm long SS inclined pocket for mounting with digital temperature indicator
Tank level socket	Tank high and low level switch
Drain Hole	lowest point
Ladder	To access to the sight glass
Lifting Lugs	12 thick SS (AISI 304) lifting lugs at top.
Instrument	Low level and high level switch fitting on top and bottom level respectively at from side, pressure level transmitter at back side bottom level.
Painting	M.S. Stiffeners painted with two coats of epoxy primer

6.5 MAGNETIC TRAP & SS HOPPER QTY: 1 NO

Function	Shall be used for arresting ferrous material
Construction	sanitary design.
Type	Magnetic
Body	AISI 304
Inlet and outlet	51mm

6.6 POWDER RECONSTITUTION QTY: 1 UNIT Powder Hopper & Funnel Qty: 1 No

The funnel shall be fabricated from SS sheets. The funnel shall be conical type, welded construction, welding done by argon arc welding process. All the welds shall be ground smooth and shall be subject to DP test. All the inner corners shall be well radiused & all SS surfaces shall be polished to sanitary finish. The upper edge of the funnel shall be bending inwards to avoid spillage of powder. The height of the funnel is to be adjusted in such way that it shall be easy to dump powder bag in to the funnel. (There shall be platform for dumping operation)

Welding	Argon arc
Finish	SS surfaces Shall be polished to 150 grit
Capacity	200 Kgs
Design	Conical venture
Type	Platform
Cone angle	60 deg
Sheet material	Stainless Steel AISI-304 quality
Shell thickness	2mm
Powder outlet	63 mm SMS std
Support	3 legs & ball feet with vertical adjustment of 50 mm

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SIGNATURE OF THE TENDERER

6.7 POWDER MIXING SHEAR PUMP QTY: 1 NO

Application	For mixing the skim milk powder with milk
Capacity	500 kgs
Pump	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Pump Mounting	Leg mounted with adjustable ball feet and shroud.
Connection	SMS STD
Moc	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	TC v/s Cr. (Tungsten face v/s Carbon Face)
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/Rpm	2.25/3/2900

6.8 POWDER MIXING LIQUID RING SELF PRIMING PUMP QTY: 1 NO

Application	For mixing the skim milk powder with milk
Pump	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Pump Mounting	Leg mounted with adjustable ball feet and shroud.
Connection	SMS STD
MOC	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	TC v/s Cr. (Tungsten face v/s Carbon Face)
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/Rpm	2.25/3/2900

6.9 RE CONSTITUTION MILK CHILLER / PREHEATER QTY: 1 NO

Function: Shall be used to chill the RCM raw milk from 35°C to 4°C by means of Chilled Water.

It can be used as a multi functional plate heat exchanger. Provision to be provided to heat the milk from 4° C to 50° C to dissolve the Skimmed milk powder completely.

Finish: All stainless steel surfaces Shall be polished to 150 grit

Design Parameters

PARTICULARS	PROCESS SIDE	SERVICE SIDE
Fluid	RCM Raw Milk	Chilled water / Steam

Noted and agreed to the above

SIGNATURE OF THE TENDERER

Capacity (flow)	5000 LPH	Suitable for the required output and temperature
Inlet temperature	35 and 4 Deg. C	
Outlet temperature	4 and 50 Deg .C	
Process side Connection	51 mm SMS	63 mm SMS
Plate Thickness	0.6mm	
Plate Material	AISI-316 quality	
Plate Gaskets	Nitrile food grade quality	
Gasket Type	Clip On	
Working Pressure	4 kg/cm ² (g)	
Test Pressure	6 kg/cm ² (g)	
Supporting Frame	Self-supporting design	
Frame & pressure Plate	Mild steel clad with AISI-304 sheet	
Tightening design	Multi bolt manual operating	
Inlet /Outlet	Complete with SMS Fittings	
Thermo-wells	Product and service sided	
Mounting	SS ball feet with Height adjustment 50mm	
Working Pressure	4 kg/cm ² (g)	
Test Pressure	8 kg/cm ² (g)	
Control Panel	In SS 304 with necessary temperature indicators, controllers, push button switches, indicators etc.	

ACCESSORIES:

- Inlet & Outlet: Product side & Service side Shall be provided with union
- Thermo-wells: Pockets for thermometer on all the inlets and
- Ball Feet: SS ball feet with provision for Height adjustment of 50mm.
- Tools: - 1 No Spanner for tightening nut, 1 No Spanner for union

6.10 CIP RETURN PUMP QTY: 1 NO

Application	Shall be used return the CIP from RCM milk tank to CIP station
Pump	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Cr v/s SS (Carbon face v/s SS Face)
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/Rpm	2.25/3/2900

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6.11 MODULE HTST MILK PASTEURIZATION PLANT QTY: 1 UNIT

Basic Design

Function	Shall be used for standard milk pasteurization & subsequently chilling / cooling it
Module	Skid Mounted
Plant capacity	3,000 LPH
Milk Temperature Program-1	4-65-90-5-4 °C
Milk inlet temperature Program	4 °C
Milk pasteurization temperature	90 °C
Finish milk outlet temperature	4 °C and 40 ° C
Regeneration Efficiency	Above 90 %
Milk temperature control	PLC
Flow Measuring	Electromagnetic flow meter
Mechanical Flow control	Manual
Auto Flow diversion-1	Hot milk
Sanitation and CIP	Auto /Manual
All connection	SMS Standard
Welding	Argon arc
Finish	SS surfaces polish by 150 grit

6.12 REQUIRED UTILITIES

➤ Milk at the inlet of constant level tank	Ltrs/hr	3000
➤ Chilled water at 1.5 °C the inlet of tank	Ltrs/hr	9000
➤ CIP solution at 70°C at the inlet of PHE	Ltrs/hr	4000
➤ Required Steam flow main heating	kg/hr	33
➤ Steam pressure inlet of Steam control valve	kg/cm ²	3.5
➤ Compressed air inlet of air pressure regulator	Kg/cm ²	6
➤ Total electrical connected load	Kw/Hp	5.25/7
➤ Processes water at the inlet of Constant level tank		
➤ Insulated Steam supply line should be equipped with pressure reducing valve for constant pressure with condensate traps for dry steam.		
➤ Electrical power V:415, Ph:3 , Hz:50 at the terminal of control panel		

6.13 CONSTANT LEVEL TANK QTY:1 NO

Function	Shall maintain Constant milk supply to Pasteurizer
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SIGNATURE OF THE TENDERER

Capacity	150 liters
Shell thickness	2 mm / AISI-304
Cover	Splash proof half cover
Milk inlet	51 mm
Milk Outlet	51 mm
Milk return re Pasteurization	51 mm
Milk recirculation	51mm
CIP inlet	25mm with rotary spray nozzle
Float switch	Electro magnetic float switch high and minimum level
Support	4 legs ,ball feet with vertical adjustment

6.14 PRIMARY INLINE FILTER QTY: 1 NO

Function	Shall be used for primary continuous filtering the milk
Capacity	5000 liters
Size	63mm
Shell thickness	2 mm/ AISI-304
Mesh	Removable SS mesh
Milk inlet/ outlet/CIP	51mm
Support	Ball feet with vertical adjustment

6.15 PASTEURIZER MILK FEED PUMP QTY: 1 NO

Function	Shall be use to feed the milk to HTST milk Pasteurizer
Capacity	4000 Liter per hour
Pump	Sanitary design
Pump Construction	Horizontal mono-block & coupling Shaft
Pump Mounting	Base mounted and shroud.
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Tungsten carbide v/s Carbon
Drive Details	3 ph, 415 volts, 50 Hz, IP-55, "F"
Motor kW/Hp/Rpm	2.25/3/2900

6.16 MECHANICAL FLOW CONTROLLER QTY: 1 NO

Function	Shall be used to maintain required flow rate
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Noted and agreed to the above

SIGNATURE OF THE TENDERER

Size	38mm
Material of Construction	AISI-304

6.17 ELECTRO MAGNETIC FLOW METER QTY: 1 NO

Function	Flow meter Shall be supplied for Measuring flow of pasteurizer. Magnetic flow meter based timing systems for HTST pasteurizers.
Design	Sanitary
Material of Construction	AISI-304
Size	38 mm SMS

6.18 HTST MILK PASTEURIZER PLATE QTY: 1 NO

Function	Shall be used for pasteurization of milk & subsequently chilling it
Capacity	3000 LPH
Model	M-6
Milk Temperature Program-2	4-65-80-90-4°C
Milk inlet temperature Program	4/30°C
Milk homogenization temperature	65 °C
Milk pasteurization temperature	90 °C
Finish milk outlet temperature	4 °C and 45° C
Regeneration Efficiency	Above 90 %
Section	Reg. II, Heating & Chilling-
Pressure Drop Chilled Water	1.0 Kg/cm ² /10 MWC
Pressure Drop Hot Water	1.0 Kg/cm ² /10 MWC
Product service side	51mm
Gaskets material	Nitrile food grade quality
Gaskets type	Clip on
Plate Material	AISI-316 L
Each Plate Thickness	0.5 mm
Test Pressure	6 kg/cm ² (g)
Frame & pressure plate	Mild steel clad with AISI-316
Interconnecting box	Mild steel clad with AISI-316
Tightening bolt	Manual tightening bolt AISI-316
Support stand	Self-supporting AISI-316
Type Of Test	Hydraulic test & Water circulation
Inlets/outlets	Product & Service side

Noted and agreed to the above

SIGNATURE OF THE TENDERER

Thermo well	Pockets for thermometer
Ball feet	Adjustable ball feet

6.19 BUCKET TYPE FILTER QTY: 1 NO

Function	Shall be used for secondary continuous filtering the milk
Shell thickness/ Moc	2 mm / AISI 304
Capacity	40 Litter
Air vent	Sample cock
Filter	SS mesh with 50 micron
Test pressure	6 kg/cm ² (g) Hydraulic test
Support	3 legs , ball feet & vertical adjustment of 50 mm

6.20 TUBULAR HOLDING TUBE -2 QTY: 2 UNIT

Function	Holding milk at pasteurization temperature.
Holding time	1200 seconds ,the holding tubes should be immersed in a suitable SS tanks with lid which can be positioned in open area.The holding coil each can hold milk at a temp of 90 0 C for 10 minutes and together for 20 minutes. There should be provision for bypassing any one holding coil to operate the pasteuriser for 10 minute holding.
Holding capacity	500 Liters

6.20 AUTO FLOW DIVERSION QTY: 1NO

Function	Whenever hot milk temperature goes below preset value a solenoid valve supplying air to FDV actuates and the flow of milk is diverted back in to the float balance tank
Type	Pneumatic operate valve
Material of construction	AISI-304
Compressed air	2.5 Kg/cm ² .

6.21 ACTUATOR BUTTERFLY VALVE QTY:1 LOT

Function	Automatically actuated shall be used during process/CIP Water rinse/drain)
Type	2 way (air to open)

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SIGNATURE OF THE TENDERER

Material of construction	AISI-304
Compressed air	2.5 Kg/cm.2. At the inlet of regulator.

6.22 SS PRODUCT INTERCONNECTING PIPES & FITTINGS QTY: 1 LOT

Function :	Interconnection of constant level tank ,pipe filter, milk feed pump, Flow regulating valve, magnetic flow meter, Pasteurizer Plate pack, filter, Holding tube, Auto milk flow diversion valve finished pasteurized product outlet and finished chilled milk outlet, auto diversion valve along with CIP auto drain and circulation and system back to constant balance tank. Piping Shall be worked out based on compact layout
Design	Sanitary
Material of Construction	AISI-304

HEATING DEVICE

6.23 EXPANSION VESSEL QTY: 1 NO

Function	The vessel Shall keep the pipes and other apparatus constantly full of water , For high pressure water applications
Design	Pneumatic diaphragm type
End connection	Flanged RF-150 AISI
Inlet pressure	1.5 Kgs/cm2

6.24 HOT WATER CIRCULATION PUMP QTY: 1 NO

Function	Shall be use to circulation the hot water in the heating section of pasteurizer
Capacity	4500 Liter per hour
Pump	Sanitary design
Pump Construction	Horizontal mono-block & coupling Shaft
Pump Mounting	Base mounted and shroud.
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Tungsten carbide v/s Carbon
Drive Details	3 ph, 415 volts, 50 Hz, IP-55, "F"
Motor kW/Hp/Rpm	.75 /1/2900

Noted and agreed to the above

SIGNATURE OF THE TENDERER

6.25 HOT WATER TUBULAR HEAT EXCHANGER QTY: 1 NO

Function	Shall be used to generating hot water. Temperature rise. The heating device Shall be complete with Safety device. (Heating section)	
Welding	Argon arc	
Finish	SS surfaces polish by 150 grit	
	Tube side	Shell side
Fluid	Hot water	Dry Steam
Capacity (flow)	4500 LPH	.As per utility details
Inlet temperature	95 Deg. C	140 Deg. C
Outlet temperature	80 Deg. C	80 Deg. C (condensate)
Model	Vertical	
Shell Thickness	3 mm	
Steam trap	Float Steam trap	
Thermo wells	Service side	
Working Pressure	4 kg/cm ² (g)	
Test Pressure	8 kg/cm ² (g)	
Type test	Water circulation and Hydraulic test	

6.26 STEAM CONTROL VALVE QTY: 1 NO

Function	Shall be used to control the Flow of steam into the hot water tubular heat exchanger
Design	Pneumatic diaphragm type
Size	1"
Type	NIBR, Two way air to open
Inlet pressure	3.5 Kgs/cm ²
Outlet pressure	3.2 Kgs/cm ²
Compressed air	2.5 Kg/cm ² . At the inlet of air pressure regulator.

6.27 HOT WATER INTERCONNECTING PIPE & FITTINGS QTY: 1 LOT

Function:	Entire heating device shall be interconnect to the heating of PHE to Steam heater tubular heat exchanger , hot water circulation pump and Expansion vessel, make up water inlet, air vent, steam control valve, complete with steam pressure gauge, the Piping Shall be worked out based on compact layout
Finish	SS surfaces polish by 150 grit/ MS line Shall be painted

Noted and agreed to the above

SIGNATURE OF THE TENDERER

Design	Sanitary
Material of Construction	AISI-304 / MS
Size	51mm

6.28 SKID QTY: 1 NO

The above equipment Shall be mounted on the skid; the skid Shall be which Shall be fabricated out of SS Square tube of AISI-304 quality. The skid Shall be supported on SS pipe legs SS and fitted with SS ball feet for vertical adjustment.	
Design	Sanitary
Material of Construction	AISI-304

6.29 INSTRUMENT AND AUTO PLC CONTROL PANEL QTY: 1 NO

Function	To control and monitoring of heating of milk
Finish	SS surfaces Shall be polished to 150 grit
Design	Dust and vermin proof lockable (fully auto)
Mounting	Skid mounted
MOC	AISI-304
Sheet	2 mm thick

- PLC based Automatic controls shall be provided to ensure that the pasteurization temperature of milk is maintained and final out let temperature also. If the required temperature is not reached in both cases the flow of product should be automatically diverted to the constant balance tank with an audible electric horn.
- HMI (human-machine interface) display for current status of the various pneumatic valve, Tank Level, Pump for operations and all the required temperature.
- Raw Milk transfer pump
- Pasteurizer Milk feed pump
- Hot Water circulation Pump
- Chilled water circulations pump
- Spares
- 2 Nos Electro pneumatic converter: MTC/WATON SMITH
- Air solenoid valve for steam, chilled & product actuator valve operation.
- ON/OFF switch and indicator lamp for control supply
- ON/OFF switch for incoming three phase supply
- Audio and visual alarm
- Auto manual switch for FDV Operations
- Alarm acknowledge switch for hooter
- Set of pneumatics fitting, air tubing, air filter regulator, pressure gauge, for flow diversion valve, steam control valves.
- The panel Shall completely wired & connection Shall be out at bottom Inside

Noted and agreed to the above

SIGNATURE OF THE TENDERER

7.0 MILK PRE HEATING MODULE

7.1 HOT WATER CIRCULATION PUMP QTY: 1 NO	
Function	Shall be used to circulate hot water in the Heating section of pasteurizer
Capacity	3000 LPH
Application	Hot water circulation pump
Pump Construction	Horizontal mono-block & coupling Shaft
Suction & Discharge	38mm x 38mm
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	TC v/s TC
Drive Details	3 ph, 415 volts, 50 Hz, IP-55, "F" class insulation.
Motor kW/Hp/Rpm	.75/1/2900

7.2 EXPANSION VESSEL QTY: 1 NO

Function	For high pressure water applications. The vessel Shall keep the pipes and other apparatus constantly full of water
Design	Pneumatic diaphragm type
End connection	Flanged RF-150 AISI
Inlet pressure	1.5 Kgs/cm ²

7.3 DUPLEX TUBULAR HEAT EXCHANGER QTY: 1 NO

Function	Steam Shall be used to generating hot water. Temperature rise. The heating device Shall be complete with Safety device. (Main Heating section)	
Welding	Argon arc	
Finish	SS surfaces polish by 150 grit	
	Tube side	Shell side
Fluid	Hot water	Dry Steam
Capacity (flow) for 2.1	3000 LPH	.As per utility details
Inlet temperature	90 Deg. C	140 Deg. C
Outlet temperature	78 Deg .C	50Deg. C (condensate)
Capacity (flow) for 3.1	3000 LPH	.As per utility details
Connection	51 mm SMS	1 1/2 Flange
Model	Vertical	

Noted and agreed to the above

SIGNATURE OF THE TENDERER

Shell Thickness	3 mm
Steam trap	2 nos Float Steam trap 1"
Thermo wells	Service side
Working Pressure	4 kg/cm ² (g)
Test Pressure	8 kg/cm ² (g)
Type test	Water circulation and Hydraulic test

7.4 STEAM CONTROL VALVE QTY: 1 NO

Function	pneumatically operated diaphragm type steam control valve to control the Flow of steam into the hot water THE
Design	Pneumatic diaphragm type steam control valve
Size	1 1/2"
Type	NIBR, Two way air to open
Inlet pressure	3.5 Kgs/cm ²
Outlet pressure	3.2 Kgs/cm ²
Compressed air	2.5 Kg/cm ² . At the inlet of air pressure regulator.

8.0 MAIN HEATING DEVICE

8.1 HOT WATER CIRCULATION PUMP QTY: 1 NO

Function	Shall be used to circulate hot water in Heating section
Capacity	4500 LPH
Pump Construction	Horizontal mono-block & coupling Shaft
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	TC v/s TC
Drive Details	3 ph, 415 volts, 50 Hz, IP-55, "F" class insulation.
Motor kW/Hp/Rpm	1.5/2/2900

8.2 EXPANSION VESSEL QTY: 1 NO

Function	For high pressure water applications. The vessel Shall keep the pipes and other apparatus constantly full of water
Design	Pneumatic diaphragm type
End connection	Flanged RF-150 AISI
Inlet pressure	1.5 Kgs/cm ²

Noted and agreed to the above

SIGNATURE OF THE TENDERER

8.3 TUBULAR HEAT EXCHANGER QTY: 1 NO

Function	Steam Shall be used to generating hot water. Temperature rise. The heating device Shall be complete with Safety device. (Heating section)	
Welding	Argon arc	
Finish	SS surfaces polish by 150 grit	
	Tube side	Shell side
Fluid	Hot water	Dry Steam
Capacity (flow)	4500 LPH	.As per utility details
Inlet temperature	80/95/95Deg. C	140 °. C
Outlet temperature	70/78/87Deg .C °. C (condensate)
Connection	51 mm SMS	1" Flange
Shell Thickness	3 mm	
Steam trap	1 nos Float Steam trap 1"	
Working Pressure	4 kg/cm2 (g)	
Test Pressure	8 kg/cm2 (g)	
Type test	Water circulation and Hydraulic test	

8.4 STEAM CONTROL VALVE QTY: 1 NO

Function	pneumatically operated diaphragm type steam control valve to control the Flow of steam into the hot water THE
Design	Pneumatic diaphragm type steam control valve
Size	1 "
Type	NIBR, Two way air to open
Inlet pressure	3.5 Kgs/cm2
Outlet pressure	3.2 Kgs/cm2
Compressed air	2.5 Kg/cm.2. At the inlet of air pressure regulator.

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8.5 HOT WATER INTERCONNECTING PIPE & FITTINGS QTY: 1 LOT

Function:	Entire heating device shall be interconnect . milk pasteurizer heating section, Steam heater THE , hot water circulation pump and Expansion vessel, make up water inlet, air vent, steam control valve, complete with steam pressure gauge, the Piping Shall be worked out based on compact layout
Finish	SS surfaces polish by 150 grit/ MS line Shall be painted
Design	Sanitary
Material of Construction	AISI-304 / MS
Size	63 mm

8.6 INSTRUMENT AND CONTROL PANEL QTY: 1 NO

Function	To control and monitoring of heating of milk
Design	Dust &vermin proof lockable
Mounting	Skid /Wall mounted provision
Material of construction	AISI-304/ 2mm thk
Temperature (PID)	Intermediate Hot milk outlet: Eurotham
Temperature (PID)	Pasteurized Hot milk outlet: Eurotham
Temperature indicator	Pasteurized Chilled milk outlet temp.
Temperature indicator	Pre heater , hot water and chilled water inlet temperature
I/P	Steam Control valve: Belofram
Air solenoid valve	Steam Control valve & FDV: ROTEX
ON/OFF switch indicator	SIMENS
Auto manual switch	FDV Operations (forward/ divert)
Hotter Alarm acknowledge	Switch
START/STOP push button	feed pump, hot water circulation pump, spare
Pneumatics	fitting, air filter, regulator, pressure gauge, air tubing,

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8.7 Inoculation tank (CULTURE VAT) VERTICAL QTY : 2 NO

Function	The pasteurized curd milk of 45°C temperature Shall be stored and culture Shall be mixed (Inoculation)
Capacity	500 Litre (volume of the tank Shall be such that after filling it up to the rated capacity the level Shall be at least 100 mm below the line where cylindrical shell joins the conical top.
Constructional	(Vertical) double walled, insulated and welded construction of sanitary design.
Slope	1:15 slope towards outlet for free complete drainage of liquid.
Metal Contact	Insulated padding between the inner SS shell and stiffeners.
Finish	All Welding joints ground smooth & polished to 150 grits.
Installation	Suitable for outside installation Shall be weather proof.
Shell & dished end	Inner shell and top conical dished end 2.5mm, flat bottom Dish end 3mm SS sheet AISI 304
Shell & dished end	Outer shell & top bottom dished end 2mm thick SS AISI 304.
Agitator	It Shall be in SS (AISI 304) construction complete with geared motor of .5 Hp to uniformly mix curd milk in the tank. The agitator shaft Shall be a rod. A time relay swith may be provided for setting the on off based on time programme.
Insulation	The inner SS shell Shall be thermally insulated with puff
Inlet	38mm No foam completes SS union.
Outlet	38mm dia cup outlet with plug flanged with sample cock
Air Vent	100mm dia air vent to prevent formation of partial vacuum during CIP and pressure during filling.

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Sight Glass	Glass assembly with toughened glass.
Light Glass	Glass assembly Shall toughened glass, lampshade for mounting
Blasted Level	Calibrated at 500 L intervals ,
Spray Ball	cleaning device at top to provide flooding of liquid over the complete interior surface during CIP
Thermo well	300 mm long inclined pocket for mounting thermometer
Lifting Lugs	Lifting lugs at top.
Painting	Mild steel stiffeners Shall be painted with two coats of epoxy primer after thorough de-rusting.
Legs	4 legs with SS(AISI 304) sheet with ball feet for height adjustment

9.0 STRUCTURAL MEZZANINE FLOORS FOR CULTURE TANK QTY: 1 L

9.1 INCUBATION ROOM QTY: 1 UNIT

Product	Curd Room size : 5M X 4M X 4M
Capacity	2000 kgs in tubs at a time
Room Temperature	40° C to 42° C (Suitable heater with automatic cut off and on provision)
Product incoming Temp	40° C to 45° C
Process Duration	4 to 5 Hrs
Product Turn Over	100 % of Total Storage
Man Occupancy Per Day	2 Person for 1 Hour
Panel Construction	Prefabricated sandwich PUF panels with Cam lock & rubber gaskets on all sides. All panels fit together by cam lock. Panel with grooves to increase the strength. Wall, ceiling & floor all get together by the mentioned arrangements.
Panel Thickness	70 mm. PUF (poly urethane foam), Density 40 + 2 Kg / m3
PUF blowing agent	141B (CFC free)"
Panel Surface Material	70 mm. PUF Panel Both side pre coated SS sheet, Sheet Thickness 0.5mm.
Floor Insulation	70 mm PUF Slab with one side Tar felt for laying Kota stone.
Door Accessories	Flush type Swing Door with Heavy duty

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	Imported Hardware like Hinges, Handle & Door closer. Door frame made in Heavy duty PVC profile with inbuilt heater arrangement to remove defrosting on door & Push type Gasket to stop air lose & easy operation for Long life.
Light	Vapour proof Bulk head provide proper lighting in each & every corner of the cold room.
Pressure Relief port	It should be provided with Pressure relief port to balance the air pressure within the room to reduce damage of panel due to vacuum.
Kick Plate	It should be provided with Aluminium Checker Plate on both side of Door bottom to reduce damage.
Safety Release Knob	Safety release Knob placed at the inner side of the door for safety precautions.

9.2 MAIN CUM CONTROL PANNEL QTY: 1 NO

- MCC control panel Complete with electrical coming/outgoing with starters. Panel shall be fabricated in 14 SWG and 16 SWG CRCA sheet with 2 coats of enamel paints.

Design	Dust & Vermin lockable
Mounting	Skid/Wall mounted provision
Material	Stainless Steel AISI-304
Sheet	2mm thick
Temperature Indicator	Digital temperature indicator
START/STOP push button	Starter
ON/OFF switch and indicator	SIEMENS

10.0. MILK TRANSFER PUMP QTY: 1 NO

Application	Shall be used for cup filling machine
Pump	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Cr v/s SS (Carbon face v/s SS Face)

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Motor Make	KEC/CROMPTON/SIEMENS
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/Rpm	.75/1/3000
Make	ZEUZER INDIA

11.0. CIP RETURN PUMP QTY: 1 NO	
Application	Shall be used return the CIP from culture tank to cip station
Pump	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Cr v/s SS (Carbon face v/s SS Face)
Motor Make	KEC/CROMPTON/SIMENCE
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/Rpm	1.5/2/3000
Make	ZEUZER INDIA

12.0. POUCH FILLING MACHINE QTY: 1 NOS	
Product	Pasteurized Milk, Butter milk & Lassi.
Fill Quantity options	500ml & 1000ml
Pack style	Centre seal pillow pack
Packing material	LDPE Polythene film (Co-extruded) of thickness range 55~ 85 micron
Estimated Pack sizes	500mm-150mm Wx 155mm L 1000mm-150mm Wx 230mm L
Lay-flat width of film	325 mm +2 /-0 mm
Estimated Accuracy	+/- 3 ~5 ml (We Shall reconfirm the accuracy on receipt of product)
Estimated Speed /Output	500mm-2500 pouch per hr x 2 head 1000mm-2000 pouch per hr x 2 head
Overall efficiency	90%
Special Note	However, the accuracy and output depends on, Product characteristics, Quality of packing material, if need be you shall change the film composition to suit the high speed operation of the machine. Product feeding system Other operational parameters of the machine.
MAKE	NICHROME

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13.0. CIP RETURN PUMP QTY: 1 NO	
Application	Shall be used return the CIP from pouch filler to CIP station
Pump	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Cr v/s SS (Carbon face v/s SS Face)
Motor Make	KEC/CROMPTION/SIMENCE
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/Rpm	2.25/3/3000
Make	ZEUZER INDIA

14.0. PACKING TABLE FOR POUCH CRATING QTY: 2NO	
Function	The packing table Shall be used for collecting milk pouches conveyed through the conveyor. The pouches Shall be then filled in the crates
Material of construction	The table Shall be fabricated using all SS 304 material only. The table Shall be supported on suitable number SS legs (50 mm dia x 3.2mm thick) with SS ball feet with minimum 50 mm adjustment. The tabletop tray Shall be of minimum 14 SWG AISI 304 sheet.

15.0. STRUCTURAL AND SUPPORTS QTY: 1 NO	
<ul style="list-style-type: none"> • The required structural material Shall be fabricated from Mild steel and Stainless steel angle, channel and pipe supports. All parts of the plant coming in contact with the plant Shall be fabricated out of SS conforming to AISI 304 quality material. • All welds Shall be ground smooth; free of precocity and all corners Shall be well radiused. All SS surfaces Shall be polished to 120 grit finishes. <p>All SS fittings, pipes and valves Shall confirm to SMS standards. Rubber and rubber line material Shall be used for gaskets; seals etc. Shall be non-toxic and Shall meet food/dairy standards. All MS surfaces Shall be wire brushed given a coat of anti-corrosive primer followed by two coats of synthetic enamel paint.</p>	

16.0.SER VOVOLTAGE STABELIZER QTY: 1 NO
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17.0.WEIGH SCALE 3 KGS QTY: 1 NO

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**18.0. TROLLY MOUNTED LEAKY POUCH COLLECTION TANK
QTY: 2 NOS**

19.0.BUTTER MILK PROCESS SECTION

19.1.PASTEURIZED WATER TANK QTY: 1 NO	
Function	Pasteurized chilled water Shall be stored for inoculation
Construction	Double wall insulated and welded construction of sanitary design.
Electrical Power	supply at the terminal of control panel
Design	Sanitary (Vertical)
Finish	SS welding joints Shall be ground smooth and polished
Capacity	2000 Liter (volume of the tank Shall be such that after filling it up to the rated capacity the level Shall be at least 100 mm below the line where cylindrical shell joins the conical top.
Slope	The bottom Shall have slope towards outlet for free and complete drainage of liquid.
Metal Contact:	Insulated padding Shall be fixed between the inner stainless steel shell and stiffeners.
Inner Cylindrical Body	Shell, flat bottom and conical top Shall be fabricated from SS sheet 2.5mm thk .
Outer Cylindrical Body	Shell and flat bottom Shall be fabricated from SS sheet 2mm
Insulation:	The inner SS shell Shall be thermally insulated with puff
Stiffeners	inner ,outer shells & supporting structure
Inlet Nozzle	No-foam inlet at the top
Outlet Nozzle	Cup type outlet with two way plug type
Air Vent Nozzle	Prevent formation of partial vacuum during CIP and pressure build-up during filling.
Man way:	Located at the conical top with air tight hinged
Level Marks:	Calibrated level marking at std intervals on the inner shell
CIP Spray Ball:	cleaning device located on conical top Shall provide flooring of liquid over the complete interior surface
Thermo well Nozzle	inclined pocket for mounting digital thermometer
Tank level socket	Tank high and low level switch
Instrument	Low level and high level switch Fitting on top And bottom level respectively at

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	from side ,Pressure level transmitter at back side bottom level Make (Endress & Negli) OR Equivalent Make
Drain:	At The bottom of the jacket with gunmetal valve.
Sampling Cock:	Provided on the -outlet with sanitary design.

19.2. PASTEURIZED CHILLED WATER PUMP QTY: 1 NO	
Application	Shall be used to transfer pasteurized chilled water to tank
Pump	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Cr v/s SS (Carbon face v/s SS Face)
Motor Make	KEC/CROMPTON/SIEMENS
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/Rpm	.75/1/3000
Make	ZEUZER INDIA

19.3. INCUBATION CURD SETTING TANK QTY: 1 NO	
Function	Shall be used for curd incubation at 45 Deg. C
Construction	Tripled walled (hot water/Chilled water circulation) insulated and welded construction of sanitary design.
Electrical Power	supply at the terminal of control panel
Design	Sanitary (Vertical)
Finish	SS welding joints Shall be ground smooth and polished
Capacity	1000 Liter (volume of the tank Shall be such that after filling it up to the rated capacity the level Shall be at least 100 mm below the line where cylindrical shell joins the conical top.
Slope	The bottom Shall have slope towards outlet for free and complete drainage of liquid.
Metal Contact:	Insulated padding Shall be fixed between the inner stainless steel shell and stiffeners.
Inner Cylindrical Body	Shell, flat bottom and conical top Shall be fabricated from SS sheet 2.5mm thk .
Intermediate Body:	Dimple Shell, flat bottom Shall be fabricated from SS 1.6 mm thk sheet

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Outer Cylindrical Body	Shell and flat bottom Shall be fabricated from SS sheet 2mm
Insulation:	The inner SS shell Shall be thermally insulated with puff
Stiffeners	inner ,outer shells & supporting structure
Inlet Nozzle	No-foam inlet at the top
Inlet Nozzle	No-foam inlet at the top Recirculation
Outlet Nozzle	Cup type outlet with two way plug type
Air Vent Nozzle	Prevent formation of partial vacuum during CIP and pressure build-up during filling.
Man way:	Located at the conical top with air tight hinged
Level Marks:	Calibrated level marking at std intervals on the inner shell
Agitator	It Shall be in SS (AISI 304) construction complete with geared motor of 3 hp with VFD , agitator shall design for mixing culture and breaking set curd .
CIP Spray Ball:	cleaning device located on conical top Shall provide flooring of liquid over the complete interior surface
Thermo well Nozzle	inclined pocket for mounting digital thermometer
Tank level socket	Tank high and low level switch
Instrument	Low level and high level switch Fitting on top And bottom level respectively at from side ,Pressure level transmitter at back side bottom level Make (Endress & Negli) OR Equivalent Make
Drain:	At The bottom of the jacket with gunmetal valve.
Sampling Cock:	Provided on the -outlet with sanitary design.
Lifting Lug:	2 Nos lifting lugs Shall be provided at top.

19.4. POUCH FILLING MACHINE QTY: 1 NO	
Product	Butter milk
Fill Quantity options	500ml & 1000ml
Pack style	Centre seal pillow pack
Packing material	LDPE Polythene film (Co-extruded) of thickness range 55~ 85 micron
Estimated Pack sizes	500mm-150mm Wx 155mm L 1000mm-150mm Wx 230mm L
Lay-flat width of film	325 mm +2 /-0 mm
Estimated Accuracy	+/- 3 ~5 ml (We Shall reconfirm the accuracy on receipt of product)

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Estimated Speed /Output	500mm-2500 pouch per hr x 2 head 1000mm-2000 pouch per hr x 2 head
Overall efficiency	90%
Special Note	However, the accuracy and output depends on, Product characteristics, Quality of packing material, if need be you shall change the film composition to suit the high speed operation of the machine. Product feeding system Other operational parameters of the machine.
MAKE	NICHROME

19.5. CIP RETURN PUMP QTY: 1 NO

Application	Shall be used return the CIP from pouch filler to CIP station
Pump	S.S. Sanitary
Pump Construction	Horizontal mono-block & coupling Shaft
Connection	SMS STD
Material of construction	AISI-304
Secondary Parts	Nitrile food grade quality
Seal Type	Single Mechanical shaft seal dia 22mm
Seal Face	Cr v/s SS (Carbon face v/s SS Face)
Motor Make	KEC/CROMPTION/SIMENCE
Drive Details	3 ph. 415 volts, 50 Hz, IP-55, "F". (B-5)
Motor Kw/HP/Rpm	2.5/3/3000
Make	ZEUZER INDIA

19.6. PACKING TABLE FOR POUCH CRATING QTY: 2NO

Function	The packing table Shall be used for collecting butter milk pouches conveyed through the conveyor. The pouches Shall be then filled in the crates
Material of construction	The table Shall be fabricated using all SS 304 material only. The table Shall be supported on suitable number SS legs (50 mm dia x 3.2mm thick) with SS ball feet with minimum 50 mm adjustment. The tabletop tray Shall be of minimum 14 SWG AISI 304 sheet.

19.7. STRUCTURAL AND SUPPORTS QTY: 1 NO

<ul style="list-style-type: none"> The required structural material Shall be fabricated from Mild steel and Stainless steel angle, channel and pipe supports. All parts of the plant coming in contact with the plant Shall be fabricated out of SS conforming to AISI 304 quality material.
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- All welds Shall be ground smooth; free of precocity and all corners Shall be well radiuses. All SS surfaces Shall be polished to 120 grit finishes.
- All SS fittings, pipes and valves Shall confirm to SMS standards.
 Rubber and rubber line material Shall be used for gaskets; seals etc. Shall be non-toxic and Shall meet food/dairy standards.
 All MS surfaces Shall be wire brushed given a coat of anti-corrosive primer followed by two coats of synthetic enamel paint.

19.8.SER VOVOLTAGE STABELIZER QTY: 1 NO

19.9.WEIGH SCALE 3 KGS QTY: 2 NO

20.0.INCUBATION/BLAST & COLD ROOM

20.1. BLAST ROOM POUCH CURD QTY: 1 UNIT	
Capacity	2 ton + 4Deg.C Room Size:5M X 4M X 4M
Insulation Thickness	PUF Panel, 80 mm
Room Door Size	6 Ft x 3 Ft X 60 mm
Product to be Store	Curd and Buttermilk Sachets
Incoming Temp of Product	+ 45 Deg.c.
Desire Temp of Product	+ 4 Deg.c.
Function	To cool down the temperature of cold room from 45 deg.c. to 10 deg.c. in six hours constantly at +4 deg.c with automatic temp controller cutoff system
Refrigeration Tonnage	minus 15 evaporation & +54 deg.c condensation
Compressor & make	Scroll compressor Danfoss make
Suction Line Accumulator	Danfoss make suction line accumulator with suitable capacity for compressor.
Air Cooled Condenser	Oversize copper condenser with sufficient aluminium fins per inch with three nos fan having sufficient CFM
Refrigeration Controls	Thermostatic expansion valve, HP & LP cutouts, HP & LP gauges, Solenoid valve, sight glass, driver/filter, charging valves & Isolation valves etc Danfoss make
Air Cooled Unit	Air Cooled Unit consisting evaporative coil, two nos fan, totally enclosed with SS 304 sheet having drain pan for water drain. Air-cooling unit is operated on + 4 Deg.C. room temp. Air-cooling is ceiling mounted with suitable structural support.
Copper Pipes & Fittings	Copper pipes, Elbows, reducer etc. to interconnecting all refrigeration equipment.
First Charge Refrigerant	First charge R-22 gas for commissioning
Cold Room Insulation Material	Cold room insulation material consisting Pre-fabricated PUF Panel, having thickness 80 mm with both side powder

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	coated GI sheet along with hardware, fittings and necessary accessories. Density of PUF will be 38 to 40 kg/cm ² .
Main Door	6 Ft X 3 Ft insulated main door having 80 mm PUF insulation with both side GI powder coated sheets, SS push rod, Heavy duty Hinges & Latches.

20.2.COLD ROOM FOR CURD , POUCH , BUTTER MILK QTY: 1 UNIT	
Capacity	6 tons 4 Deg.C Room Size:10M X 5.25M X 4M
Insulation Thickness	PUF Panel, 80 mm
Room Door Size	6 Ft x 3 Ft X 60 mm
Product to be Store	Butter Milk Bottle
Incoming Temp of Product	+ 4 Deg.c.
Desire Temp of Product	+ 4 Deg.c.
Cool down time	For Maintaining Temp only
Holding capacity of product	10000 Liter
Refrigeration capacity	5 TR x 2 Nos
Condenser	Air Cooled
Power Supply	440 V, 3 phase,
Function	To maintain the temp of cold room constantly at +4 deg.c with automatic temp controller cutoff system
Refrigeration Tonnage	minus 5 evaporation & +54 deg.c condensation
Compressor & make	Scroll compressor Danfoss make
Suction Line Accumulator	Danfoss make suction line accumulator with suitable capacity for compressor
Air Cooled Condenser	Oversize copper condenser with sufficient aluminum fins per inch with three nos fan having sufficient CFM
Refrigeration Controls	Thermostatic expansion valve, HP & LP cutouts, HP & LP gauges, Solenoid valve, sight glass, driver/filter, charging valves & Isolation valves etc Danfoss make
Air Cooled Unit	Air Cooled Unit consisting evaporative coil, two nos fan, totally enclosed with SS 304 sheet having drain pan for water drain. Air-cooling unit is operated on + 4 Deg.C. room temp. Air-cooling is ceiling mounted with suitable structural support
Copper Pipes & Fittings	Copper pipes, Elbows, reducer etc. to interconnecting all refrigeration equipment
First Charge Refrigerant	First charge R-407C for commissioning
Cold Room Insulation	Cold room insulation material consisting

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Material	Pre-fabricated PUF Panel, having thickness 80 mm with both side powder coated GI sheet along with hardware, fittings and necessary
Main Door	6 Ft X 3 Ft insulated main door having 80 mm PUF insulation with both side GI powder coated sheets, SS push rod, Heavy duty Hinges & Latches.

21.0 UTILITY

21.1 COMPRESSED AIR SYSTEM

- Compressed air system shall supply oil free compressed air to plant and utility plant which is part of scope of tender. One number of oil free air compressor of min. capacity as per BOQ for the generation of oil & moisture free air suitable for instruments. The compressor shall have control system for capacity control and for performance. Necessary oil filter is to be provided for oil free air.
- Refrigerated Air Dryers of matching the capacity of the air compressor for ensuring the quality of air suitable for instrumentation, a common MS air receiver of suitable capacity with moisture separator and drain valve is included in the scope of work.
- The compressed air shall be distributed up to various sections as per battery limits. The headers shall be from GI C class pipes while all the airline drops from headers for distribution in production areas shall be of SS-304 with isolation valves for servicing.
- The system would be operated, monitored & controlled from local panel. FRL units shall be provided at all distribution headers near all consumption points inside the plant.
- Necessary valves, piping, controls and instrument Pressure/temperature sensors etc. shall be in scope of supply.
- The distribution network for compressed air shall be designed in such a way so as to maintain uniform required pressure at all consumption points to meet the flow rate without any hammering in pipeline. Preferably ring main system may be considered. The main header size will be calculated considering future expansions also.

22.0 WATER TREATMENT AND DISTRIBUTION SYSTEM

Raw and soft water shall be made available from existing dairy Plant to new proposed location at one point area. Further distribution up to consumption point shall be in scope of tender and further do all required treatment and distribution as per new plant requirements. The main header size will be calculated considering future expansions also

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Water treatment plant shall include following:

- Raw water hydro flow system
- Soft water hydro flow system.
- R.O water hydro flow system
- Raw and soft water distribution piping

Raw water from over head tank shall be used mainly for floor cleaning and general purpose. Soft water shall be used for the entire plant process, milk/product pushes/purges, tanker flushing CIP & hot water generation for milk pasteurizers, etc. RO water shall be used for preparation of reconstituted milk, Butter milk etc,.

The bidder has to supply RO plant of capacity 500 LPH to carry out the treatment of the raw water and necessary storage tank of 1000 Liters capacity is to be supplied for storing and distribution.

Water distribution piping up to all the consumption points for the new plant along with isolation valves is included in the scope of work. Water distribution header sizes shall be designed for fermented plant and related Utilities and other miscellaneous/general use. The header shall be designed keeping in mind the future requirements of the new plant also. The distribution network for raw/ soft water shall be designed in such a way so as to maintain uniform required pressure at all consumption points to meet the flow rate without any water hammering. Ring main system (or additional diaphragm tank) may be considered if necessary.

All water line drops (for Raw and soft) from headers for distribution in reception & process area and other areas shall be of SS-304 with manual isolation valves.

Necessary valves, piping, controls and instrument including flow meters etc. for the entire Water distribution system shall be in scope of supply. All the water pumps shall be of high efficiency type & selected based on best efficiency available for the duty with **Eff.-1** motors.

23.0 STEAM DISTRIBUTION AND CONDENSATE RECOVERY

Steam Boilers are already available in the boiler house at the site. Bidder has to visit the premises and envisage the steam distribution requirements and required work.

Necessary steam pressure reducing stations (PRS)

HP header of 6kg/cm² with steam pressure reducing stations (PRS) shall be provided at one point in header at the proposed building

Further distribution up to consumption point with flow meter shall be in scope of tenderer. The main header size will be calculated considering future

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expansions also. Steam Distribution to various duty points as per Good Steam Engineering practices is part of this scope. Necessary steam pressure reducing valve (PRV) as per process requirement is to be included in the supplier's scope. The PRVs shall contain steam control valve with Roboter type with local pressure monitoring for both HP & LP steam line. All steam valves on high/low pressure lines shall be of glandless piston type to avoid leakage.

24.0 CHILLED WATER DISTRIBUTION

Adequate capacity of refrigeration system is already available in the existing dairy. Insulated supply and return chilled water line with isolated valve shall be provided at a point in header at new proposed plant at one point.

Further distribution up to consumption point shall be in scope of tendered. Chilled water return shall be taken from the outside of building. Curd and Butter milk plant and all the section covered under the scope of this bid & distribution up to all the utility points (GI line, insulated/AI cladded) including necessary isolating valves at various tapings is in the scope of supply. Chilled water returns from all the utility points of plant and all the section covered under the scope of this bid up to chilled water return header of ice accumulation system through a common return header (GI line, insulated/AI cladded) with isolation valves at various tapings.

25.0 ELECTRICAL DISTRIBUTION SYSTEM

Electrical distribution system shall be part of this project and should be suitable to operate, control, and maintain all the parameters required for curd and butter milk processing plant Milk reception, Processing, packing and conveyors, etc all.

Following are responsibility, but not limited to, of Bidder as part of scope of this tender:

- a) One outgoing feeder at Existing plant PCC panel and Distribution of power including laying cable up to the proposed building shall be provided by purchaser. further distribution of power from PCC feeder to respective IMCC/MCC including end termination shall be bidders scope
- b) Required number of Motor Control Centers (MCC) and ancillary panels with complete switchgears as per the requirement of the equipment shall be provided for effective and safe operation of the processing plant. Spare feeder three nos to be provided for future expansion.
The above distribution of MCC is tentative and may change at later date as per layout and equipment positioning as well as process requirements. The quantity may reduce or increase as per final bidder's scheme.

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- c) Required quantity of armored aluminium (PCC to Sub PCC & Sub PCC to MCCs) & copper power cable, copper control cable, instrument cable, cable trays in all processing & product making sections, SS/GI drop conduit pipes in other sections, plate type earth pit, earthing network, earthing conductors, load break Isolators/ plug & sockets with Push Button station near motors for emergency isolation, rubber mats for panels etc. shall be provided. All power cables from MCC to motors, control cables shall be of flexible copper steel braided type up to 50 sq.mm , above 50 sq.mm Armoured copper conductor , XLPE insulated , PVC sheathed cable & rodent proof of suitable size with derating factor as applicable to be considered for multiple cables laid together on cable trays (cable selection chart enclosed). For all cable distribution inside the plant (including vertical drops) SS cage (mesh) type trays shall be provided. Cable trays outside the plant building, inside IMCC room, utility area including main cable from PCC to IMCCs shall be GI perforated/ladder type with cover.
- d) All necessary documents and statutory fees required will be borne by/paid by the bidder and shall be reimbursed by Purchaser to bidder upon producing receipt of the same.
- e) Approval for LT electrical work with State Electricity Board, Electrical Inspector is Bidder's responsibility.
- f) The electrical LT distribution system specification is detailed in specification section.

26.0 ELECTRIC MOTOR

All electric motors shall be energy efficient motors and shall comply with the following:

- a) All poly phase motors of 0.375 kW or more shall have a minimum acceptable nominal full load motor efficiency not less than shown in Table below or as per the IS 12615 – 2004(Rev 1) for Eff1 (IE 2) energy efficient motors.

Table for Minimum Acceptable Motor Efficiencies

Motor Size (KW)	Efficiency (%)	
	2 Pole	4 Pole
0.37 (0.5 hp)	70.2	69.4
0.55 (0.75 hp)	74	72
0.75 (1 hp)	78.5	74.6
1.1 (1.5 hp)	82.2	83.8

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1.5 (2 hp)	84.1	85.0
2.2 (3 hp)	85.6	86.4
3.0 (4 hp)	86.7	87.4
4.0 (5.5 hp)	87.6	88.3
5.5 (7.5 hp)	88.6	89.2
7.5 (10 hp)	89.5	90.1
11.0 (15 hp)	90.6	91.0
15.0 (20 hp)	91.3	91.8
18.5 (25 hp)	91.8	92.2
22.0 (30 hp)	92.2	92.6
30.0 (40 hp)	92.9	93.2
37.0 (50 hp)	93.3	93.6
45.0 (60 hp)	93.7	93.9
55.0 (75 hp)	94.0	94.2
75.0 (100 hp)	94.6	94.7
90.0 (120 hp)	95.0	95.0
110.0 (150 hp)	95.0	95.0
132.0 (180 hp)	95.3	95.5
160.0 (215 hp)	95.5	95.8
180.0 (240 hp)	95.5	95.8
200.0	95.8	95.8
225.0		96.0
250.0		96.0

- b) Motor nameplates shall list the nominal full-load motor efficiencies and the full-load power factor.
- c) Certificates shall be obtained and kept on record indicating the motor efficiency.
- d) The motors which shall be operated on VFDs shall be designed for Inverter application.

The sizes of power cables for different capacity of loads / Motor rating shall be as indicated in the cable selection charts. All the power & control cables shall be laid through SS ladder type cable trays including the drops inside the plant & through GI perforated cable trays outside the plant.

SS shrouds for all pumps & motors shall be provided.

Supply & placement of insulating mats of proper size as per the IS 15652 and Tamilnadu State Electrical Inspectorate rules shall be provided.

Connection from plug & socket/isolator junction boxes to motor junction boxes shall be with steel braided PVC insulated copper conductor cables.

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27.0 CIP

Measurement / Trending, regulating & Control system

Measurement / Trending (through PLC), regulating and control system having control loops consisting of Electronic transmitters, switches, RTDs and control valves with electro pneumatic positioner, regulators etc. Each system shall contain following:

- Level Control.
- Temperature measurement & Control.
- Conductivity/ Concentration measurement and control.

The conductivity, concentration measurement & Level control along with re-circulation within the CIP kitchen shall be controlled through PLC.

28.0 GENERAL FOR SERVICE SS PIPES, VALVES, FITTINGS & ACCESSORIES

The main supply pipe sizes of various utilities shall be designed keeping in view the future expansion/ modifications.

29.0 MATERIALS FOR PIPING

29.1 Filtered, soft & chilled water distribution lines :

Galvanized steel (ERW) IS 1239,3589, 3601,4736 (medium duty)

29.2 RO water distribution lines:

AISI 304 with seamed joints.

29.3 For LP steam and compressed air lines :

MS 'C' class pipes (ERW) IS 1239/3601/4736. Compressed air lines shall be of GI.

High pressure steam lines, valves, PRSs & accessories shall be as per IBR.

29.4 Valves

Service	Size	Specification	Remarks
LP steam	15 mm to 40 mm	CS body, 13% Cr trim 800#, Lift Check valve with SW ends (NRV)	Pressure < 3.5Kg/ Sq.cm
		CS body, SS ball, special PTFE seats, 800# with SW ends ball valve	
	50mm to 300mm	CS body, 13% Cr trim 150#, Gland less piston type valve with flanged ends	
		CS body, 13% Cr trim 150#, flanged swing check (NRV)	
Water / Air	15mm to 40mm	CS body, SS ball, PTFE seats, 800# with SW or SCD ends ball valve	Pressure < 3.5 Kg / Sq.cm
	50mm to 300mm	CI body 13% Cr disc, 125# wafer type butterfly	

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	NRV (all sizes)	CS body 13% Cr trim, wafer type check	
Chilled water	15mm to 40mm	CS body, SS ball, PTFE seats, 800# with SW or SCD ends ball valve	Pressure < 3.5 Kg / Sq.cm
	50mm to 300mm	Butterfly type flanged construction.	

29.5 Flanges/counter flanges shall be as per BS tables:

- Table F for HP & LP steam
- Table D for water
- Table E for air

For pipeline sizing following velocities of the fluid shall be considered

- LP steam : 20 m/s
- Water : 2.5 m/s
- Air : 20 m/s

30.0 SS / MS/ GI STRUCTURALS

30.1 SS-304 structural for platforms, product/ CIP / utility pipes, cable tray supports, crossover/ working table etc.

All cable tray supports inside the plant (Existing and new)/corridor shall also be of SS-304 box sections (2.5 mm thk. minimum). Supports outside the plant shall be of GI box sections.

Below mentioned areas are to be considered for SS-304 structural and fabrication work:

- SS304 structural supports for all product/ CIP/ Utility piping, cable trays/conduits etc. in the plant area (old and new) with bird proofing in SS304 perforated sheet construction for the exposed outside area.
- SS304 structural supports for all product/ CIP/ Utility piping, cable trays/conduits etc. all production area, CIP area, Indoor plant corridor etc.

In addition to all above mentioned requirement required SS structural platform & supports shall be provided as per functional requirements of the plant operation and maintenance.

30.2 MS (GI) structural for outdoor pipe bridge, silo / tank platforms etc

- These shall be provided for fabricating platforms, outdoor pipe support on service bridges etc.

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- These shall include ISMB, ISMC, angles, flats, bars, MS plates, chequered plate, hand rails of minimum 900 mm height, toe guard etc.
- The platforms shall have frame underneath and bracing members of suitable sections. Access ladders and structural supports of C class pipe/ISMC channel shall be provided within the scope of the works for structural works quoted.
- MS 5mm thick chequered plate for the trenches shall be provided wherever required.
- Below mentioned areas are to be considered for GI/MS structural work:
 - Self-supported hot dip galvanized steel platforms for approach of all outdoor RMSTs, PMSTs, Cream tanks, milk storage silo/Tanks with Staircase and SS railing.
 - Outdoor pipe bridge for all product/ CIP/ Utility piping, cable trays etc.

In addition to all above mentioned requirement required GI/MS structural platform & supports shall be provided as per function requirement of the plant operation and maintenance.

31.0 PRODUCT CONTACT PARTS

All parts coming in contact with product will be in Stainless Steel SS304.

All internal weld joints coming in contact with the product and for un-insulated external surfaces shall be ground to approx. 150 grit and other weld joints shall be left un-ground. External and internal surface finish shall be 2B finish.

32.0 RESPONSIBILITIES

32.1. RESPONSIBILITIES OF BIDDER

- Developing the process design, complete engineering design, manufacturing and/or supply of respective equipment/goods/services as per the technical specifications and ensuring best performance of individual equipment/systems/process plant as a whole. The bidder shall avail the assistance of reputed specialists in the respective field wherever required as well as past experiences gained during installation/ commissioning of the projects.
- Providing technical data, technical literature, production and service load calculations.

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- Arranging for approvals from various Statutory Authorities on behalf of the Purchaser. The statutory fees will be reimbursed by Purchaser on production of receipt.
- First charge of oil/lubricants/gas.
- Execution of project in accordance with prevailing Indian standards IER & IBR, wherever applicable & relevant to this project.
- Testing and commissioning satisfactorily and performance of all equipment in bidder's scope and after sales service at mutually agreed terms.
- Test equipment, test kits, instrumentation and materials required for establishing performance parameters.
- Provide necessary manpower during positioning, pre-commissioning, testing and commissioning along with tests.
- Testing, commissioning of the system under scope as per agreed performance parameters and utility consumption.
- Training Purchaser's personnel in the field of instrumentation automation, management system, plant operation & control, maintenance & repair of systems & equipment.

32.2. RESPONSIBILITIES OF PURCHASER

- Water: Water shall be provided by Purchaser at Free of Cost at one Point.
- Engineering personnel to liaison with the supplier, Project Manager and the execution team.
- Permanent water and power supply at the time of pre-commissioning of the plant.
- Adequate staff including operators, supervisors and engineers for product trials.
- Provision of and cost of services, raw products, packaging materials
- Timely provision of personnel for training.
- Provide open storage area, lockable store during erection and commissioning of project.
- Suitable Site fabrication yard
- Telephone and fax on chargeable basis.
- Payment as per agreed terms and conditions
- Approval of drawing
- Project manager with team throughout the implementation.
- Lightning protection system & protection against rain.

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33.0 PROJECT MANAGEMENT

33.1.TIME SCHEDULE

- Project execution shall be scheduled to mutually agreed time bound program, which should not exceed as specified in the IFB from the date of signing of contract along with advance payment to commencement of product trials and service load trials. The Project Manager of bidder will provide all the details to the Project Manager of the Purchaser with monthly expediting and progress reports, which clearly indicate the actual vs., planned progress and the new likely completion dates of supply, erection, and commissioning and product trials.
- The bidder shall provide project-staffing pattern before commencement of work and should include sufficient personnel to meet the execution time schedule.

33.2.MANAGEMENT TEAM

- A Project Manager who shall be adequately experienced in projects of similar magnitude and type shall head a competent executive team. Reputed experts in various fields who shall be responsible for satisfactory execution of the project shall assist the Project Manager. He shall be responsible for overall implementation of the project, from commencement to final takeover of the plant.
- A Project Engineer shall be appointed for day to day operation and co-ordination, and to ensure successful and satisfactory design, procurement, manufacture, inspection, erection, testing and commissioning of all the equipment/facilities/systems within the time bound schedule.
- The Project Manager and Project Engineer shall attend technical and review meeting between various parties involved in the project, and ensure implementation of all decision taken in the meetings.
- The Project Manager shall also be responsible for detailed material accounting at site and management of project materials and equipment stored at site.
- The Purchaser will nominate a Project Manager with whom the Project Manager of the supplier shall communicate/co-ordinate.
- For smooth execution of the project, a team of Project Manager and Key Personnel shall remain consistent throughout the execution period.
- The Project Manager shall be fully authorized to take on-spot decision with regards to:-
 - Modification in layout and execution program to suit local condition.
 - To purchase essential materials from local market to avoid delays.

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33.3 SITE WORK AND INSTALLATION

➤ **Protection of electronic equipment:**

It is the responsibility of the bidder to ensure that all electronic equipment and control system shall be fully protected against hostile environment, humidity, heat and dust that will be encountered during storage and installation.

➤ **Temporary power supplies:**

Power supply at site is normally very stable, but the bidder is responsible to ensure that delicate electronic equipment used during construction, such as welding machine, testing devices etc. are protected against damage from mains supply. In the event of a major power failure in the system, it shall be the responsibility of the bidder to hire a diesel generator if this proves to be necessary.

33.4 COMMISSIONING

- After satisfactory erection and testing, a competent team shall be deputed to commission the plant and to run product trials and to establish performance parameters. However the commissioning of the complete plant will be done at an appropriate stage which shall be informed to the successful bidder. Bidder to participate in the entire plant commissioning activity and ensure that his equipment is working as per the specifications and in the harmony with other equipment and design philosophy.

34.0.CIVIL WORKS

All the civil works related to the Curd and Butter milk plant will be carried out by the union. The civil foundation works for the machineries will be carried out by union however the detailed foundation drawings are to be given by the tenderer.

35.0. LIST OF MATERIALS / EQUIPMENT'S

S.No	Name of the Equipment	Capacity	QTY
1.0	Milk storage		
1.01	Vertical standardized milk storage	5KL	1
1.02	Dry blender	0.5 TPH	1
1.03	RCM milk chiller 35 ⁰ TO 4 ⁰ C	5KLPH	1
1.04	CIP Return pump for std tank	3HP	1
1.05	CIP Inlet and outlet flow plate	Standard	2
1.06	Remote control panel	Standard	1
2.0	Curd Processing		
2.01	Milk storage tank	3 KL	2 No
2.02	Curd Pasteuriser	3 KLPH	1 NO

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	Skid mounted HTST multi purpose Pasteuriser plant with PLC.Temp programme 4 to 90-45/4 Deg .C		
2.03	Milk transfer pump to pre heater	2 HP	1 no
2.04	CIP Return pump process storage tanks	3 HP	1 no
2.05	Curd milk pre heating plant - semi auto	1 KLPH	1 no
2.06	RO Water tank for water push in preheater	500 Lts	1 no
2.07	Feed pump to RO water	.5 HP	1 No
2.08	CIP inlet and out let flow plate	Standard	2 no
3.0	Curd pouch processing and filling		1 no
3.01	Inoculation tank	500 Lts	2 no
3.02	CIP return pump Inoculation tanks	2 HP	1no
3.03	Table for cartooning/working	Standard	1 no
3.04	Weighing scale	2 kgs	2 No
3.05	CIP inlet and out let flow plate	Standard	2 No
3.06	Remote control panel	Standard	1 No
3.07	Curd pouch filling machine	5000 packs/hr	1 no
3.08	CIP return pump for pouch filling	3 HP	1 no
3.09	Curd pouch collecting table	Standard	1no
3.10	Remote control panel	Standard	1 no
4.00	Butter milk production section		
4.01	Curd incubation tank (Double jacket)	1 KL	1 no
4.02	Curd shear pump	2 KLPH	1 no
4.03	Butter milk chiller	1 KLPH	1 no
4.04	Overhead butter milk tank for filling	500 Ltrs	1 no
4.05	Butter milk pouch filling machine	5000 packs/hr	1 no
4.06	CIP return pump for B.M.pouch filler	3 HP	1 no
4.07	Curd pouch collecting table	Standard	1 no
4.08	Platform for filling machine	Standard	1 lot
4.09	CIP inlet and out let flow plate	Standard	1 no

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4.10	Remote control panel	Standard	1 no
4.11	Green spice grinding machine	Industrial type	1 No.
4.12	Pasteurized water tank	1 KL	1 no
4.13	Pasteurized water transfer Pump	5 KLPH	1 no
5.0	Incubation ,Blast and Cold room		
5.01	Incubation room with Heater Size: 5M x 4M x4M	2 MT	1 no
5.02	Blast room 45 ⁰ C to 20 ⁰ C in first 2 Hrs Size:5M x 4M x4M	2 MT	1 no
5.03	Cold room 4 ⁰ C size:10M X 5.25M X 4M	6 MT	1 NO
6.0	CIP SECTION		
6.01	Automated single circuit CIP system with PLC for Fermented plant	10000 LPH	1 lot
6.02	Oil free air compressor	75 CFM/15 HP	1 no
7.0	PIPING AND INSULATION		
7.01	SS Product Pipe and fitting	Suitable	1 Lot
7.02	SS CIP Pipe & fittings	Suitable	1 Lot
7.03	MS chilled water pipe & fittings	Suitable	1 Lot
7.04	MS steam water pipe & fittings	Suitable	1 Lot
7.05	Soft water pipe & fittings	Suitable	1 Lot
7.06	Pneumatic line pipe & fittings	Suitable	1 Lot
7.07	Insulation for chilled water line, & steam	Suitable	1 Lot
7.08	MS structure and supports	Suitable	1 Lot

36.0.LIST OF PREFERRED MAKE FOR THE EQUIPMENTS

DESCRIPTION	PREFERRED MAKE
PROCESS SECTION EQUIPMENTS	
SS Milk lines & CIP Supply	ALFA LAVAL / ZEUZER / FRISTAM
Pasteurizer	TETRA PAK / ZEUZER / IDMC
Silos, Tanks etc	TETRA PAK / Astavinayaka/ IDMC/ZEUZER
SS Shear pump	ALFA LAVAL / ZEUZER / FRISTAM
PHE Chiller/ Heater	TETRA PAK / ZEUZER / IDMC
PHE Type Water & CIP Solution Heater	TETRA PAK / ZEUZER / IDMC

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DESCRIPTION	PREFERRED MAKE
Milk & CIP Hoses	SAINT GLOBAIN / MTG /ANY REPUTED MAKE
CIP Return Pump	ALFA LAVAL / ZEUZER / FRISTAM
Tubular heat exchanger	TETRA PAK / ZEUZER /IDMC
Online Inkjet Printer	DOMINO / VIDEOJET /MARKEM IMAGE
Milk Pouch Filling Machine	NICHROME / ATOMIC ENGINEERS /SAMARPAN
TTO Printer for FFS machine	DOMINO / VIDEOJET / MARKEM IMAGE
Online Metal Detector	TECHNOFOUR / METLER TOLEDO
Tri-blender	TETRA PAK / ZEUZER / FRISTAM
EPS / PUF Insulation Materials	LLOYDS / FRICK / ANY REPUTED MAKE
PUF Panels for Cold Rooms	LLOYDS / FRICK / ANY REPUTED MAKE
Saddles for Cold Insulation	SUPERTHERM (LLOYD) / BEARDSSELL / ANY REPUTED MAKE
Resin bonded mineral wool mat	LLOYD / ROCKWOOL/ ANY REPUTED MAKE
Resin bonded mineral wool pipe section	UP TWIGA / ANY REPUTED MAKE
Water / Chilled /Hot Water Pumps	GRUNDFOS / ZEUZER /KEC
Milk Silo Agitator	IDMC / ZEUZER / ALFA LAVAL
INSTRUMENTATION, CONTROLS & AUTOMATION	
VFD	SIEMENS/SCHNEIDER/ABB
Level Transmitter & indicator	E&H / EMERSON /ANDERSONNEGELE
Temperature/Pressure Transmitter	E&H / EMERSON / ANDERSON NEGELE
Conductivity & pH Transmitter	E&H / ANDERSON NEGELE/BUMMER
Density transmitter	E&H / EMERSON
RTD for Lines	E&H / EMERSON / ANDERSON NEGELE
RTD for tanks	E&H / EMERSON /ESD
Flow Switch	E&H / ANDERSON NEGELE/BUMMER
Proximity switch	SICK / P&F / IFM
Level Switch (float type & vibrating fork type)	E&H / EMERSON / ANDERSON NEGELE
Vortex /Magnetic Flow meter	E&H / EMERSON / ANY REPUTED MAKE
Mass Flow meter	E&H / EMERSON/ADOPT
Control Valve	DANFOSS / SAMSON / PNEUCON
Pressure switch /temp switch	ALCO /E&H/ EMERSON

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DESCRIPTION	PREFERRED MAKE
Pressure & Temperature Gauge	H GURU/ WAAREE / WIKA
Dual type Pressure / temp gauges	H GURU/ WAAREE / WIKA /
Temperature digital Indicator / controller	E&H / EMERSON / ANDERSON NEGELE IFM/ RADIX /EUROTHERM
Load Manager / Power / Energy Monitor	SIEMENS/ABB/SCHNEIDER
PC (Personal Computer)	HEWLETT-PACKARD / DELL / LENOVO
Network Switch	HP/ROCKWELL/SIEMENS
DCS / PLC System	SIEMENS / SCHNEIDER/ALLEN BRADLEY
Automation System	SIEMENS / SCHNEIDER/ALLEN BRADLEY
ELECTRICALS	
Electric Motors	SIEMENS / ABB / KIRLOSKAR
Air Circuit Breaker	L&T / SIEMENS
MCCB	L&T / SIEMENS
MPCB	L&T / SIEMENS
Contactors	L&T / SIEMENS
Starter Overload Relays	L&T / SIEMENS
Intelligent Motor Protection Relays	L&T/SIEMENS / ABB
Timers Electronic	L&T / SIEMENS / SCHNEIDER / ABB
Switch Fuse Units	L&T / SIEMENS / SCHNEIDER / ABB
MCBs	SCHNEIDER / SIEMENS / HAGER
Push Buttons	SIEMENS / L&T / ABB
Indicating Lamps (LED)	L&T / SIEMENS/ABB
Digital Ammeter & Voltmeter	SIEMENS / L&T / RISHABH
Analog Ammeter & Voltmeter	RISHABH / IMP / MECO
Digital Energy Meter	SIEMENS/L&T /SCHNEIDER
PVC Conduit & accessories	CLIPSAL / POLYCAB/ P – PLAST
Digital Power Factor Meter	SIEMENS / L&T / RISHABH
Programmable Protection Relay	MINILEC/ L&T/ SCHNEIDER
Resin cast / Polycarbonate Current Transformer	KAPPA / L&T / PRECISE
LT armoured Power Cables	LAPP KABEL / FINOLEX / POLYCAB
LT armoured Copper Control Cables	LAPP KABEL / FINOLEX / POLYCAB
LT steel braided copper power & control cables	LAPP KABEL / FINOLEX / POLYCAB

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DESCRIPTION	PREFERRED MAKE
Signal & Instrument cable	LAPP KABEL / FINOLEX / POLYCAB
Power Capacitors	EPCOS / SCHNEIDER / NEPTUNE DUCATI
APFC Relay	EPCOS / L&T / SIEMENS
Cable Tray	INDIANA / PILCO / ANY REPUTED MAKE
Isolating Switches	SIEMENS / L&T / ABB
HRC fuses	L&T / SIEMENS / ANY REPUTED MAKE
Plug & Socket	LEGRAND / CLIPSAL / BCH
IP65 Boxes for motor isolator/junction box	HENSEL / RITTAL / R STAHL
Terminal Blocks	WAGO / LAPP INDIA / ELMEX
Rotary Selector Switch	L&T / SIEMENS / SALZER
Cable Glands	DOWELS /COMET / BRACKO
Cable Lugs	DOWELS / COMET
Mechanical Interlock	L&T / SCHNEIDER / ABB
Electronic Soft Starter	SIEMENS / L&T / ABB
Servo Voltage Stabilizer	SUVIK /NEEL / CRYCARD
UPS	EMERSON / HI-REL / NUMERIC
SMF Battery	AMCO / EXIDE / AMARA RAJA
VALVES & PIPES (MS & GI)	
Water Valves (Butterfly / Ball)	L&T (AUDCO) / LEADER / INTERVALVE
Water Valves (Diaphragm)	L&T (AUDCO) / LEADER / INTERVALVE
Non-return Valve for water	L&T (AUDCO) / LEADER / INTERVALVE
Water Foot Valve	L&T (AUDCO) / LEADER / INTERVALVE
GI Pipes for water	TATA / JINDAL / ZENITH
MS Pipes for air, steam, condensate	TATA / JINDAL / ZENITH
NRV for Air / Oil Line	INTERVALVE / L&T (AUDCO) / LEADER
Solenoid Valve for water lines	DANFOSS / AVCON / ANY REPUTED MAKE
Water Flow Meter (analogue)	DASHMESH / ANAND ASAHI / ANY REPUTED MAKE
HP / LP Steam / condensate	L&T / SPIRAX / LEADER
Globe Valves	L&T / SPIRAX / ANY REPUTED MAKE
HP / LP Steam Valves Piston type	SPIRAX / UNI KLINGER/ ANY REPUTED MAKE
Automatic Pumping Pump	FORBES MARSHALL / SPIRAX/ ANY REPUTED MAKE
Steam relief valve, traps & strainers	SPIRAX / THERMAX/ ANY REPUTED MAKE
Steam Pressure Reducing Valve	FORBES MARSHALL / MAWAS/ ANY REPUTED MAKE

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DESCRIPTION	PREFERRED MAKE
Steam Pressure Reducing Station	FORBES MARSHALL / MAWAS/ ANY REPUTED MAKE
Single Seat SS Pneumatic Valves	SPX / ALFA LAVAL/INOXPA
Mix Proof SS Pneumatic Valves	SPX /ALFA LAVAL/INOXPA
Pneumatic SS Butterfly / Ball type valves	SPX / ALFA LAVAL/INOXPA
SS Manual Valves & Fittings	ALFA LAVAL / INOXPA / ANY REPUTED MAKE
AIR COMPRESSORS & AIR LINE FITTINGS	
Air Compressor (Screw)	INGERSOLL RAND/ELGI /ATLAS CAPCO
Refrigerated Air Dryer	INGERSOLL RAND / ELGI / BRY AIR
Air lines accessories	FESTO/SMC/AIRMATIC / JANATICS
Auto Drain Valve	ZANDER / PURIFLAIR /SMC

Noted and agreed to the above

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NAME OF ITEM / WORK	:	DESIGN, SUPPLY, ERECTION, INSTALLATION, TESTING AND COMMISSIONING OF CURD AND BUTTER MILK MANUFACTURING PLANT AT KAKKALUR DAIRY, KANCHIPURAM – TIRUVALLUR DCMPU LTD.,
TENDER NOTICE REFERENCE NO	:	3192/Proj.3/2022, Dated:04.04.2022

PART – II

COMMERCIAL BID

THE TAMILNADU COOPERATIVE
MILK PRODUCERS' FEDERATION LTD
CHENNAI 600 035

QUALIFICATION

The commercial offers of such of those tenderer who qualify themselves for being considered for **Design, Supply, Erection, Installation, Testing and Commissioning of Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy, Kanchipuram – Tiruvallur DCMPU Ltd.**, by fulfilling the entire terms and conditions as laid in Part I “Technical Bid” of this tender, will be considered for the finalization of the tender. Other commercial offers not qualifying as above will be rejected outright.

**Design, Supply, Erection, Installation, Testing and Commissioning of
Curd and Butter Milk Manufacturing Plant at Kakkalur Dairy,
Kanchipuram – Tiruvallur DCMPU Ltd.,**

**ABSTRACT
PRICE QUOTE SCHEDULE**

In Rupees

S.N.	DESCRIPTION	RATE
A	SUPPLY:	
1	Basic Price (Break up details – to be furnished in a separate enclosure)	
2	Packing Forwarding if any	
3	Transportation charges to site including loading and unloading charges	
4	Transit insurance	
5	GST/IGST	
	Sub-Total (A)	
B	Installation, Testing and Commissioning	Material cost if any
1	Unpacking, shifting and positioning charges	
2	Installation, Testing and Commissioning charges	
3	GST/IGST	
	Sub Total (B)	
	TOTAL PRICE (A+B)	
	TOTAL PRICE IN WORDS	

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BREAK-UP DETAILS FOR ABSTRACT PRICE QUOTE SCHEDULE

In Rupees

S.NO	NAME OF THE EQUIPMENT	CAPACITY	QTY	BASIC PRICE	P&F	TRANSPORT CHARGES	TRANSIT INSURANCE	GST/ IGST	TOTAL PRICE
1.0	MILK STORAGE								
1.01	VERTICAL STANDARDIZED MILK STORAGE	5KL	1						
1.02	DRY BLENDER	0.5 TPH	1						
1.03	RCM MILK CHILLER 35 ^o TO 4 ^o C	5KLPH	1						
1.04	CIP RETURN PUMP FOR STD TANK	3HP	1						
1.05	CIP INLET AND OUTLET FLOW PLATE	STANDARD	2						
1.06	REMOTE CONTROL PANEL	STANDARD	1						
2.0	CURD PROCESSING								
2.01	MILK STORAGE TANK	3 KL	2 NO						
2.02	CURD PASTEURISER	3 KLPH	1 NO						
	SKID MOUNTED HTST MULTI PURPOSE PASTEURISER PLANT WITH PLC.TEMP PROGRAMME 4 TO 90-45/4 DEG .C								

S.NO	NAME OF THE EQUIPMENT	CAPACITY	QTY	BASIC PRICE	P&F	TRANSPORT CHARGES	TRANSIT INSURANCE	GST/ IGST	TOTAL PRICE
2.03	MILK TRANSFER PUMP TO PRE HEATER	2 HP	1 NO						
2.04	CIP RETURN PUMP PROCESS STORAGE TANKS	3 HP	1 NO						
2.05	CURD MILK PRE HEATING PLANT - SEMI AUTO	1 KLPH	1 NO						
2.06	RO WATER TANK FOR WATER PUSH IN PREHEATER	500 LTS	1 NO						
2.07	FEED PUMP TO RO WATER	.5 HP	1 NO						
2.08	CIP INLET AND OUT LET FLOW PLATE	STANDARD	2 NO						
3.0	CURD POUCH PROCESSING AND FILLING		1 NO						
3.01	INOCULATION TANK	500 LTS	2 NO						
3.02	CIP RETURN PUMP INOCULATION TANKS	2 HP	1NO						
3.03	TABLE FOR CARTOONING/WORKING	STANDARD	1 NO						
3.04	WEIGHING SCALE	2 KGS	2 NO						
3.05	CIP INLET AND OUT LET FLOW PLATE	STANDARD	2 NO						
3.06	REMOTE CONTROL PANEL	STANDARD	1 NO						
3.07	CURD POUCH FILLING MACHINE	5000 PACKS/HR	1 NO						
3.08	CIP RETURN PUMP FOR POUCH FILLING	3 HP	1 NO						

S.NO	NAME OF THE EQUIPMENT	CAPACITY	QTY	BASIC PRICE	P&F	TRANSPORT CHARGES	TRANSIT INSURANCE	GST/ IGST	TOTAL PRICE
3.09	CURD POUCH COLLECTING TABLE	STANDARD	1NO						
3.10	REMOTE CONTROL PANEL	STANDARD	1 NO						
4.00	BUTTER MILK PRODUCTION SECTION								
4.01	CURD INCUBATION TANK (DOUBLE JACKET)	1 KL	1 NO						
4.02	CURD SHEAR PUMP	2 KLPH	1 NO						
4.03	BUTTER MILK CHILLER	1 KLPH	1 NO						
4.04	OVERHEAD BUTTER MILK TANK FOR FILLING	500 LTRS	1 NO						
4.05	BUTTER MILK POUCH FILLING MACHINE	5000 PACKS/HR	1 NO						
4.06	CIP RETURN PUMP FOR B.M.POUCH FILLER	3 HP	1 NO						
4.07	CURD POUCH COLLECTING TABLE	STANDARD	1 NO						
4.08	PLATFORM FOR FILLING MACHINE	STANDARD	1 LOT						
4.09	CIP INLET AND OUT LET FLOW PLATE	STANDARD	1 NO						
4.10	REMOTE CONTROL PANEL	STANDARD	1 NO						
4.11	GREEN SPICE GRINDING MACHINE	INDUSTRIAL TYPE	1 NO.						
4.12	PASTEURIZED WATER TANK	1 KL	1 NO						

S.NO	NAME OF THE EQUIPMENT	CAPACITY	QTY	BASIC PRICE	P&F	TRANSPORT CHARGES	TRANSIT INSURANCE	GST/ IGST	TOTAL PRICE
4.13	PASTEURIZED WATER TRANSFER PUMP	5 KLPH	1 NO						
5.0	INCUBATION ,BLAST AND COLD ROOM								
5.01	INCUBATION ROOM WITH HEATER SIZE: 5M X 4M X 4M	2 MT	1 NO						
5.02	BLAST ROOM 45 ° C TO 20 ° C IN FIRST 2 HRS SIZE: 5M X 4M X 4M	2 MT	1 NO						
5.03	COLD ROOM 4 ° C SIZE: 10M X 5.25M X 4M	6 MT	1 NO						
6.0	CIP SECTION								
6.01	AUTOMATED SINGLE CIRCUIT CIP SYSTEM WITH PLC FOR FERMENTED PLANT	10000 LPH	1 LOT						
6.02	OIL FREE AIR COMPRESSOR	75 CFM/15 HP	1 NO						
7.0	PIPING AND INSULATION								
7.01	SS PRODUCT PIPE AND FITTING	SUITABLE	1 LOT						
7.02	SS CIP PIPE & FITTINGS	SUITABLE	1 LOT						
7.03	MS CHILLED WATER PIPE & FITTINGS	SUITABLE	1 LOT						
7.04	MS STEAM WATER PIPE & FITTINGS	SUITABLE	1 LOT						
7.05	SOFT WATER PIPE & FITTINGS	SUITABLE	1 LOT						

S.NO	NAME OF THE EQUIPMENT	CAPACITY	QTY	BASIC PRICE	P&F	TRANSPORT CHARGES	TRANSIT INSURANCE	GST/ IGST	TOTAL PRICE
7.06	PNEUMATIC LINE PIPE& FITTINGS	SUITABLE	1 LOT						
7.07	INSULATION FOR CHILLED WATER LINE,& STEAM	SUITABLE	1 LOT						
7.08	MS STRUCTURE AND SUPPORTS	SUITABLE	1 LOT						
8.0	ERECTION, TESTING AND COMMISSIONING OF THE PLANTS								
9.0	GRAND TOTAL								

Note:-

- 1). The rates should be quoted separately for equipment-wise with break-up of Basic Price, Packing & Forwarding, Transportation charges, Loading and unloading charges, Transit insurance, GST/IGST for supply, Unpacking, shifting and positioning charges, Erection & commissioning charges, GST/IGST for Erection & commissioning etc., which should be totalled and mentioned in the Abstract of Price Quote Schedule.
- 2). The tenderer shall furnish break up details for the above in a separate sheet for Price, GST/IGST, with the percentage.
- 3). All the rates should be only in terms of Indian Rupees.
- 4). Tenderer should indicate origin of country from which the equipment is imported and has to produce authorization letter from OEM.
- 5). Phrases like `Extra`, `as applicable`, `at the prevailing rate` etc. should not be quoted to avoid ambiguity.

**Seal of the firm
tenderer**

Signature of the

Witness:

1

2

Date: