WEST BENGAL LIVESTOCK DEVELOPMENT CORPORATION LIMITED
(A Govt. Of West Bengal Undertaking)
LB-2, Sector-III, Salt Lake City, Kolkata – 700 106
Telefax: (033)-2335 5298 E-mail: info@wbldc.in
Website: www.wbldc.in Toll Free No. 18001208243

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NIT No: WBARD/WBLDC/NIT-728e/2024-25 **Date of Issue: 19/07/2024**

SET OF TENDER DOCUMENTS
For

Establishment of a New Milk Processing & Milk Products Plant at Matigara Himul Campus, Darjeeling-734010, West Bengal on Turnkey Basis during the year 2024-2025

Each Set Contains:-

1. Notice Inviting e-Tender.
2. General Instruction to Bidders.
3. Eligibility Criteria for Participation in the Tender.
4. Evaluation of Tender.
5. Tender Terms & Conditions.
6. Scope of Work / Job Schedule
7. Forms-I, II, III, IV, V & Check List - VI.

DATE OF PUBLICATION OF e-TENDER (ONLINE): 19/07/2024 FROM 06:55 P.M.

STARTING OF BID SUBMISSION (ONLINE): 19/07/2024 FROM 06:55 P.M.

PRE BID MEETING (Mandatory) TO BE HELD ON 02/08/2024 at 1:00 P.M., H.Q.

LAST DATE FOR ON LINE SUBMISSION OF TENDER: 10/08/2024 UP TO 11:30 A.M.

OPENING OF TECHNICAL BID: 12/08/2024 FROM 11:30 A.M. onwards.

OPENING OF FINANCIAL BID: TO BE NOTIFIED LATER ON.
TENDER FEES: NIL

ESTIMATED TENDER VALUE PUT TO TENDER: Rs. 39,86,74,279/-
(Including GST, Cess and other taxes & other charges)

EARNEST MONEY DEPOSIT: 2% OF THE ESTIMATE

(Dr. Gouri Shankar Koner)
Managing Director
W.B.L.D.C. Ltd.

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NOTICE INVITING *e*-TENDER

The Managing Director, West Bengal Livestock Development Corporation Ltd., LB-2, Sector-III, Salt Lake City, Kolkata–700106 invites on line bids (in two bid system) from reputed resourceful, bonafide agencies, having adequate experience and expertise in **similar nature of work specially in Govt./Semi Govt./ Public sector Undertakings,** registered under the relevant laws in India and fulfilling requisite eligibility criteria as stated in the e-NIT for ***"e -Tender on Establishment of a New Milk Processing & Milk Products Plant at Matigara Himul Campus, Darjeeling-734010, West Bengal on Turnkey Basis during the year 2024-2025"***.

Earnest Money **2% (Two percent) of the amount put to tender** only is to be remitted online through Govt. of West Bengal e-Tender portal (https://wbtenders.gov.in). The payment transaction slip / receipt in pdf format is to be uploaded along with the statutory documents for tender submission.

1) In case bidder wants to be exempted from EMD submission, a valid Exemption certificate is to be scanned & uploaded along with the statutory documents in the e-tender portal for participation in the tender.
2) After publication of e-tender Notice in the Medias, detailed terms & conditions, BOQ (Bill of Quantities) may be obtained from the website https://wbtenders.gov.in at free of cost. Submission of tender by the bidder can be made with the help of Class- 3DSC (Digital Signature Certificate) in this website https://wbtenders.gov.in. Notice inviting e-tender will **only be viewed** in the Corporations website www.wbldc.in simultaneously.
3) Tenders should normally be floated in two parts one Technical Bid (BID-A) and other Financial Bid (BID-B).
4) Tender must be supported by:

A. TECHNICAL BID : 'BID-A'

(a)STATUTORY COVER containing the following documents:
PART 1 (SINGLE FILE MULTIPLE PAGES SCANNED):

1	Upload NIT with Seal and Signature on every pages
2	Upload Scanned Application in the prescribed format (Form-I) and Upload Declaration by the Tenderer (Form - II)
3.	Upload Certificate from Chartered Firm in the official pad (Form - III) and Upload Affidavit Proforma (Form - IV)
4.	Upload Working (Credential) / **Bid Capacity (Form-V)**
5.	Upload Preliminary Drawing and Authorization of Plant and Machineries.
6.	Upload The agency / company should have minimum annual turnover of Rs. 50 Crore.
7.	Upload All Documents / Certificates

(b) NON-STATUTORY COVER/MY SPACE containing the following documents:

Sl. No.	Category	Sub Category Description
1	CERTIFICATES – ✓ All valid up to date. ✓ All certificates are to be furnished in English Vernacular ✓ Affidavit are not valid ✓ Scanned original copy	✓ PAN Card of the authorized signatory ✓ Prof. Tax clearance certificate with challan valid up to **31/07/2024.** ✓ GST Registration certificate. ✓ IT returns of 2022– 2023 Financial year. ✓ Trade License valid upto 31/07/2024. ✓ Valid documentary proof of: ✓ Certificate of updated Income tax Return ✓ Audited balance sheet for the last 3 years. √ Work experience including work of Government of West Bengal in last Five years. (as per Form-V). ✓ P.F. & E.S.I. Registration / Declaration ✓ **Available Bid Capacity = (A+N+M-B)** Where **A**: Maximum value of Civil Engineering work the updated to the price level of the last 5 year at the rate of 8 percent simple interest a year). **N**: 1.0 If completion time is more than 6 month. 0.5 If completion time is less than or equal to 6 months **M**: 3 **B**: Value at the current price level of existing commitments and ongoing works to be completed during the period of completion of the work for which bids are invalid. ✓ Available bid capacity to be calculated on the basis of prescribed format (**FORMAT-V**) of the Prospective Tenderer shall not be less than the estimated amount put to tender.
2	COMPANY DETAILS (valid up to Date), scanned original copy	i) Registration Certificate under Company Act. (if any). ii) Registered Deed of partnership Firm, Trade License / Article of Association & Memorandum. iii) In Case Proprietorship & Partnership Firms, the Tax Audited Report in 3CD Form along with Balance Sheet & Profit and Loss A/c. for the last 3 (three) years (year just preceding the current Financial Year will be considered as year-1). The balance sheet, Profit & Loss account should be in favor of applicant's name only. iv) Power of Attorney (For Partnership Firm/ Private Limited Company, if any). v) List of Technical staffs along with structure & organization.
3	Credential	(i) Intending tenderers ***should produce*** credentials of a ***similar nature of work (Mechanical . Electrical & Civil)*** of the minimum value of 40% of the estimated amount put to tender during 5 (five) years prior to the date of issue of this tender notice; Or, (ii) Intending tenderers should produce credentials of 2 (two) similar nature of work ***(Plant & machineries related in Dairy Industries)*** each of the minimum value of 30% of

		the estimated amount put to tender during 5 (five) years prior to the date of issue of this tender notice; Or, (iii) Intending tenderers should produce credentials of one single running work of similar nature of work ***(Plant & machineries related in Dairy Industries)*** which has been completed on the extent of 80% or more and value of which is not less than the desired value at (i) above; In case of running works, only those tenderers who will submit the certificate of satisfactory running work under Govt. department / Govt. sponsored Organization / Govt. Undertaking or equivalent competent authority will be eligible for the tender. In the required certificate it should be clearly stated that the work is in progress satisfactorily and also that no penal action has been initiated against the executed agency, i.e., the tenderer. (iv) The joint venture of Mechanical ,Civil and electrical Agency is allowed and may participate in the tender, provided Machineries agency must fulfill the eligibility criteria i.e. 60% of the estimated amount of total works put to tender and electrical agency also must fulfill the eligibility criteria (10% of the estimated amount of electrical works put to tender) ***N.B:- Estimated amount, tendered amount, date of commencement, date of completion of project and details communicational address of the client (within West Bengal if any also) must be indicated in the Credential Certificate.***
4	The Bidder shall not be under a Declaration of Ineligibility for corrupt or fraudulent practices or blacklisted with any of the Government Agency.	Declaration in this regard by the authorized signatory of the bidder.

The vendor must fulfill the above eligibility criteria/ pre-qualification conditions. Technical bid of vendors fulfilling the pre-qualification conditions will only be evaluated by the duly constituted evaluation committee. Bid of vendors not fulfilling the pre-qualification conditions given above will be summarily rejected. Undertaking for subsequent submission of any of the above documents will not be entertained under any circumstances. The authority reserves the right to verify/confirm all original documentary evidence submitted by vendors in support of above mentioned clauses of eligibility criteria.

B. FINANCIAL BID : 'BID-B' (BOQ)

i) The Contractor is to quote the rate **on Percentage BOQ format** of the components as specified in the BOQ. **The percent rate (less or excess from scheduled rate)** will be quoted in the BOQ in one cover (folder) encrypted in the B.O.Q. under Financial Bid. . Single Agency will be selected based on QCBS method at 80:20 Weightage basis.

ii) **Rate quoted shall be including GST, Cess and other taxes / all other charges.**

iii) **Scope of work as per Annexure-A & BOQ**

iv) Only downloaded copy of the B.O.Q. is / are to be uploaded quoting the rate, virus scanned and digitally signed by the contractor.

N.B.: ALL STATUTORY & NON STATUTORY DOCUMENTS(S) ARE REQUIRED TO BE UPLOADED IN ORIGINAL. Neither Photocopy nor cyclostyled literature/Brochure will be accepted.

No Hard copy of bid documents will be entertained for consideration for selection of this tender. Bidders must have to participate the tender through online only at www.wbtenders.gov.in.

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NAME OF WORKS :-

Name of the work	Work Details	Estimated Amount put to Tender (Rs.)	Period of completion of the work.
1	2	3	4
e -Tender on ***Establishment of a New Milk Processing & Milk Products Plant at Matigara Himul Campus, Darjeeling-734010, West Bengal on Turnkey Basis during the year 2024-2025***	**Details of work schedule item-wise may be found in the Technical Specification (Mechanical, Electrical and Civil) and BOQ**	**Rs. 39,86,74,279/-** **including GST, Cess, other taxes / all other charges.**	**400 (Four Hundred) Days including all**

MANAGING DIRECTOR, W.B.L.D.C. LTD., RESERVES THE RIGHT TO CHANGE THE ABOVE SCHEDULE IN CASE OF ANY EXIGENCIES. No objection in this respect will be entertained raised by any Bidder. **Bidders or their authorized representatives need not to be present in the office of the undersigned at the time of opening of the Technical or Financial Bid (BID-B).Decision of Tender committee at every stages of evaluation shall be intimated and uploaded on the website (https://wbtenders.gov.in) portal.**

No informal bidder will be entertained in the bid further.

However, at any stage before awarding the contract, the Tender Selection Committee reserves the right to cancel the tender process due to unavoidable circumstances and no claim in this respect will be entertained.

(Dr. Gouri Shankar Koner)
Managing Director
W.B.L.D.C. Ltd

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NIT No: WBARD/WBLDC/NIT-728e/2024-25 **Date of Issue: 19/07/2024**

A. GENERAL INSTRUCTION TO BIDDERS

1) Total work is to be completed positively ***within 400 (Four Hundred) Days*** or the time specified in the order from the date of issue of order.

2) The intending bidders are requested to submit their tender along with prescribed application form in e-tender portal https://wbtenders.gov.in . The software shall make automatic encryption of the Technical as well as Financial Bid and no one shall be allowed to open two Bids prior to the date and time earmarked for opening by the Tendering Authority.

3) After evaluation of Technical Bid, those who will qualify, their Financial Bid shall only be opened. The technical proposal (BID-A) will be opened on line **as per evaluation procedure**.

4) Evaluation summary report of technical evaluation will be uploaded online to the portal from the office of the undersigned immediately after committee arrives at a decision regarding the same.

5) **Intending Bidder(s) must have to attend Pre-Bid meeting held on 02.08.2024 at 1.00 PM at the office of the undersigned.**

6) **Site Visit : from 29.07.2024 to 01.08.2024 (from 11.00 AM to 4.00 PM) ; for Site Visit Pl contact : Saradindhu Mondal (HIMUL) : 8101501726 / 6296251672**

7) **Intending bidder(s) must have to upload (FORM-V) during participation.**

8) **If any bidder fails to attend the pre-bid meeting as well as Site Visit , his/her technical bid will be cancelled without assigning any reason behind it .**

*9) **The intending Bidder must have a valid licensed electrical Contractor having Electrical supervisor License for HT & LT works ,SCC relevant parts, readily present at work site during the execution of electrical works after accepting the Award of Contract (AOC).***

*10) **Intending bidder must have to submit Drawing, Design/Layout of the scope of work which needs to be approved by the tender Inviting Authority after final selection. After Issuing LOA/AOC selected agency must have to submit Final Drawing within 14 days from the issue of the LOA/AOC. It includes Proper cable (Main / Auxiliary) laying Diagram & Single line Diagram for distribution / Load segment based on site visit and scope of work.***

11) The Financial bid may be opened within a very short notice (on the same day afternoon or next day forenoon), once technical evaluation is completed.

12) Bidders having any query / objection / claim regarding the evaluation or any decision taken by the tender selection committee may communicate in writing to the Corporation's official mail id info@wbldc.in within 48 hrs of taking such decision. Communications received after the due time, will not be entertained for consideration in any way.

13) For further information, the bidders are requested to please contact the undersigned.

14) **No Tender will be accepted across the table and no such receipt will be issued thereon.**

15) In the event of any discrepancy between downloaded tender document and master copy of the same available in the office then the latter will be accepted & binding on the bidder. No claim will be entertained.

16) N.I.T. to be downloaded properly and to be uploaded duly digitally signed as a token of acceptance by the bidder with all the general & special (if any) terms & conditions laid down in the tender document.

17) **In case quoting the rate anywhere other than BOQ, the tender is liable to be summarily rejected.**

18) The Bidder is required to carefully study all the tender documents and prepare his tender to comply with all the provisions thereof. Submission of a Tender shall be taken as evidence and confirmation that the Bidder has acknowledged all the provisions of the Tender Documents and has fully acquainted himself with site conditions and all factors which may influence the preparation of his Tender. Negligence of the Bidder to observe instructions in the matter of preparation of his Tender shall be attributable to him and shall not be a ground for securing relief from any error as may be found or discrepancies as may be contained in his Tender and would not give him any liberty to withdraw his Tender after the same being opened.

19) All the tender documents including N.I.T., terms & conditions for submission of tender & B.O.Q. will be the part & parcel of the bid documents.

20) The undersigned reserves the right to cancel the tender at any stage without assigning any reason thereof.

21) The offer shall remain valid for ***400 days (Four Hundred)*** the date of opening of the financial bid. **Selected Bidder must have to complete the Job in due time , no extension will be entertained except on emergency . Agency will be penalized in case of unjustified delayed in schedule time frame of work.**

22) Test certificate of cable and other equipment shall have to be submitted at site with the supply.

(Dr. Gouri Shankar Koner)
Managing Director
W.B.L.D.C. Ltd

ELIGIBILITY CRITERIA FOR PARTICIPATION IN THE TENDER

1) The contractors who have been delisted or debarred by any government department shall not be eligible in any way.

2) Contractors must have work credentials of both Mechanical, Civil & Electrical with related works with at least 5years experience in the field.

3) **Intending bidder(s) must have their own arrangement in time for all equipment's' related to construction including different types of heavy equipment commonly used in the construction (Civil Works).**

4) Having experience to build up/ Remodeling work related to Dairy Plant **preferably at similar work anywhere in India**.

5) Credentials for Plant & Machinary works as Prime agency will only be taken into account. That means tie up with one or more company for execution of similar nature of work cannot be claimed as a sole credential of the claimant company.

6) **Intending bidder(s) must have to submit Drawing /Design and Lay out as per scope of work during submission of tender (online) in due time otherwise entire bid may be rejected .** ***Site visit will be manditory and if done queries will be cleared during Pre-Bid meeting .***

7) Approve rate (percentage BOQ on put to tender amount) based on Final Selection as per criteria including GST , labour Cess and all taxes and Charges . If any changes in GST and other Govt. Taxes as well as charges as per latest Govt. Circular occur during implementation period (Job progressive period) , it will be taken juristically as per Govt rules as decided by the Tender Inviting Authority .

8) Valid up to date clearance of Income Tax return, Professional Tax Clearance Certificate, P.T. (Deposit Challan), PAN Card, GST Registration Certificate, PF & ESI certificate / declaration, Valid Trade License with the Technical Bid Documents, Income Tax Acknowledgement Receipt for latest assessment year to be submitted. [Non statutory Documents].

9) Registered Partnership Deed (for Partnership Firm only) along with Power of Attorney to be submitted along with application, if applicable. (Non-Statutory documents)

10) Implementing agency must have to follow the Guidelines of "Karmashree Scheme" during engagement of unskilled workers for the said Job as per G.O No. 1138(Sec)-PRD-33011/1/2024-MGNREGA SEC dated 07.03.2024 of Spl. Secretary , P & RD , Govt. of W.B .

11) Registered Unemployed Engineers' Co-operative Societies are required to furnish valid Bye Law, Current Audit Report, Current N.O.C. from A.R.C.S., Minutes of last A.G.M. and also submit documents of the society consists at least 10 (ten) members out of which at least 60% should hold degree or diploma in any branch in Engineering.

12) Prevailing safety norms has to be followed so that LTI (Loss of time due to injury) is zero.

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EVALUATION OF TENDERS

During the tender Evaluation Process, the **Technical proposal** (**BID-A**) will be opened first. Those bidders who will qualify the **Technical proposal** as described in BID-A **containing Statutory/Non statutory documents including credentials** will be identified and after qualifying Technical Score as mention below then only their **Financial Cover (BID-B)** shall be opened. The **Financial cover (BID-B)** will not be opened and will be summarily rejected **if that Bidder fails to meet the technical requirements participating in the tender as well as Presentation which will be intimated via Official e-Mail ID mentioned in floated tender in 24 hrs. in advance** . Technical Evaluation of the Tender will be held on two parts, i.e. opening & evaluation of Presentation (scoring method) of tender. The Tender Inviting Authority reserves the right to relax the minimum qualification criteria for the work if necessary. The Tender Inviting & Accepting Authority through an 'Evaluation Committee' will determine the eligibility of each bidder, considering the following criteria: -

a) Financial Capacity.

b) Technical capability comprising of personnel & equipment capability .

c) **Experience in similar nature of work through credentials.**

While evaluation the committee may summon the Bidders & seek clarification / information or additional documents in original hard copy of any of the documents already submitted & if these are not produced within the stipulated time frame, their proposals will be liable for rejection.

The credentials will broadly cover the following areas –

• Competence in all the credential activities and sectors noted in the campaign outline at invitation for bid section of this document, in case a bidder does not meet the criteria for eligibility, his Technical Bids will not be opened.

• For all bidders eligible according to the prescribed criteria, the completed /ongoing Credentials will be evaluated by a technical Committee ***on presentation*** that may include external expert/s. The qualified bidders will be given the opportunity to make presentation/s to the Committee on a specified date onward. The criteria for evaluation of the Technical / scope proposal are at below.

Sl. No.	Bid Component (Technical Offer Evaluation)	Total Marks	Marks Scored
1.	Presentation/Demonstration of completed / ongoing of similar works AMC related in Govt Sector/Private sectors on specific date to be intimated through official Mail ID (at least two sets of creative to be submitted /presented for evaluation)	**40**	
2.	The agency/company should have turnover of 3 Cr. Yearly with State Government. Financial turnover during the last financial year (either 2021-22 or 2022-23 FY) : (1) Rs.50,00,00,001and above=10marks (2) Rs. 20,00,00,001 to Rs. 50,00,00,000/- = 7 Marks (3) Rs. 5,00,00,001to Rs. 20,00,00,000/- = 3 Marks (4) Rs. 1,00,00,001/- to Rs. 5,00,00,000/- = 2 Marks (5) Rs. below 1,00,00,000/- = 1 Marks	**10**	
3.	The agency/company should have experience under any department of State Government for similar works (satisfactory completion certificate to be provided).	**10**	
4	Details Organization Set up (Comprises Board ,Project Manager, Civil engineer , Mechanical, Electrical Engineer , Admin & Accounts Assistant, Project coordinator	**20**	
5	Authorization /Approval from Manufacturer of Equipment/machineries'	**20**	
	Total: Marks for Technical Evaluation :	**100**	

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Intending bidder(s) must have to attend Pre-Bid meeting held on 02/08/2024 at 1.00 P.M at the office of the undersigned , if any bidder fails to attend the meeting and site visit but participate in the said tender his/her bid will be rejected as decided by the tender Inviting Authority (TID) without showing any reason.

The Evaluation Committee shall evaluate and rank each Technical Proposal on the basis of the Proposal's responsiveness to the scope using the evaluation criteria and score system specified above. Each Technical Proposal shall receive a technical score. The Proposal shall be rejected if it does not achieve the minimum technical mark of 50 (Fifty) out of maximum of 100 (Hundred) marks.
Final selection based on based on L-1 bidder in Financial Part in Financial bid . Financial bid will be opened only technically qualified bidders.

Scoring will be evaluated only after qualifying the criteria for submission of Statutory & Non-Statutory documents as stated in NIT by the intending Bidder(s).

Bidders would be at liberty to point out any ambiguities, contradictions, omissions etc. seeking clarifications thereof or interpretation of any of the Clause(s), conditions etc. of the tender documents before the Tender Inviting Authority inwriting within a period *of 2 (two) days* from the date of publication of tender documents and beyond such period no Representation in that behalf will be entertained by the Tender Inviting Authority. Written clarification or amendments etc, as may be issued by the tender inviting authority in pursuance to the representation made by the Bidders shall be final and binding on the Bidders and shall form part of the tender documents. Tender Inviting Authority, however, reserves its right to have pre bid conference with the Bidders.

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TENDER TERMS & CONDITIONS

01. OPENING OF THE TECHNICAL PROPOSAL:

(a) Technical proposal will be opened by the authorized officer of the undersigned, electronically from the website using their Digital Signature Certificate (DSC).

(b) Cover (folder) for Statutory Documents and non statutory documents will be opened. If there is any deficiency in the **Statutory Documents** the tender will summarily be rejected.

(c) Decrypted (transformed into readable formats) documents of the Statutory & Non statutory Cover will be downloaded and handed over to the Tender Evaluation Committee.

(d) Pursuant to scrutiny & decision of the Tender Evaluation Committee the summary list of eligible bidders will be uploaded in the web portals.

(e) The Financial Cover (BID-B) of those bidders passing the technical requirements will only be opened. THE DECISION OF UNDERSIGNED/TENDER COMMITTEE WILL BE FINAL &BINDING UPON THE BIDDER IN THIS RESPECT.

02. PENALTY FOR SUPPRESSION / DISTORTION OF FACTS:-

If any bidder fails to produce the original hard copies of the documents (specially Completion Certificates or Work Orders as proof of credential) or any other documents on demand of the Tender Opening Authority within a specified time frame or if any deviation is detected in the hard copies from the uploaded soft copies or if there is any suppression of facts, the bidder will be suspended from participating in the tenders on e-Tender platform for 3 (three) years.

The Contractors are bound by the terms and conditions of W.B.F No. 2911 with relevant changes'

03. AWARD OF CONTRACT:-

The Tender Inviting Authority reserves the right to accept or reject any tender and to cancel the tendering process and reject all tenders at any time and prior to the issue of Award of Contract without incurring any liability to the affected Tenderer or Tenderers thereby or shall have any obligation to inform the affected Bidder or Bidders of the ground for Employer's action. The Bidder who's Bid has been accepted will be notified by the Tender Inviting & Accepting Authority through acceptance letter cum Award of Contract.

04. PERFORMANCE GUARANTY :

(i) Upon selection of the bidder in the Financial evaluation and after issuance of 'Letter of Acceptance' the successful bidder have to produce a Performance guaranty in shape of Bank Guarantee (as per specimen format) ***for 2 (Two) Year*** of an amount of **5 % of the Tender Value**, payable to the West Bengal Livestock Development Corporation Ltd., Kolkata.

(ii) It may be noted by the intending bidders that, deposit of Performance guaranty is a pre-requisite for executing the agreement and issuance of 'Award of Contract' thereafter.

05. AGREEMENT

The corporation will execute an agreement with the successful bidder ***as per the prescribed format or as will deem fit as per the condition in a Non-judicial Stamp Paper worth Rs.100/-*** (Rupees One Hundred) only to be provided by the successful bidder. The notification of award will constitute the formation of the Contract or the agreement between the Tender Accepting Authority and the successful Bidder. All the tender documents including NIT & B.O.Q. will be the part & parcel of the Contact Documents. Prescribed Agreement must be signed by the both parties, the Authorized Signatories of the Corporation &Tendering firm concerned. The Original agreement will be retained by the Corporation in the concerned case file and the photocopy of the same will be provided to the concerned firm.

06. SECURITY MONEY DEPOSIT

Successful tenderer shall be required to deposit Security Money at the **rate of 10% (Ten P.C.)** of the contract value. However earnest money of the successful tenderer may be converted/adjusted with the Security Money and the balance Security Money (8% of contract value) to be deducted from deducted from each and every submission of "running" bill to make ***10% security deposit*** **as per terms of the contract. (As per G'o. No. 201-F(Y) Dated-18/01/202l** of Finance Department Govt. of WB. The Security Money will not carry any interest.

In the event of non-completion or defective work by the contractor the Corporation will have the right to get the work done through any agency at the risk and cost of the contractor and also the Corporation will have the right to forfeit the security money in full or part at its discretion which will be binding upon the contractor.

The security money will be released after one month on expiry of Defect Liability Period and satisfactory remedy or rectification or amendment or modification or all, and settlement of accounts.

As per memorandum no. 4608-F (Y) dated 18.07.2018 of Finance Department (Audit Branch) Additional Performance Security @ 10 % of the tendered amount shall be obtained from the successful bidder if the accepted **bid value is 80% or less of the estimate put to tender**. The Additional Performance Security shall be submitted in the form of Bank Guarantee from any schedule bank before issuance of the Work Order.

If the bidder fails to submit the **additional performance security within 14 working days** from the date of issuance of LOA, his earnest money will be forfeited and other necessary actions as per NIT like black listing of the agency, etc. may be taken. The Bank Guarantee shall have to be valid up to the end of the contract period and shall be renewed accordingly if required.

The Bank Guarantee shall be release immediately on successful completion of work. If the bidder fails to complete the work successfully the Additional Performance Security shall be fore- fitted at any time during pendency of the contract period after serving notice to the contractor.

Necessary provisions regarding deduction of security deposit from progressive bills of the agency as per relevant clauses of the contract shall in no way be altered/ affected by provision of this Additional Performance Security.

07. PENAL MEASURE

If the firm withdraws tender as a whole or for any particular item at any stage during the tenure of tender or fails/refuses to enter into written agreement once the rate for any/all items(s) is/are accepted within the time specified when requested to do so by this Corporation. Such firms offer will not be taken into consideration in future & shall liable to be black listed for 3 (three) years.

i) The security money deposit furnished by a bidder is liable to forfeit in full along with cancellation of order without prejudice in the event of failure/refusal to maintain the terms & conditions of tender and/or contracted specification and/or quality/quantity and the authority will be at liberty to terminate the contract as a whole or part.

ii) In consequence of submission of false or fabricated documents by any firm/ company for participating in the tender, if proved later on shall liable to be Black Listed for 3 (three) years.

iii) Quoting absurdly high or low rate in opinion of tender selection committee, with the intention to vitiate the tender process will be dealt with in the context of existing tender rules/ norms under Govt. of W.B.

iv) Any legal dispute arising during the tender process shall be dealt only under the jurisdiction of Calcutta High Court.

v) **Total work in said location is to be completed positively within 400 (Four Hundred) Days or the time specified in the order from the date of issue of order.**

08. PAYMENT

Any request for Advance Payment will not be entertained. However, in exceptional cases, advance amount up to 10% advance may be allowed against 110% Bank Guaranty

1. Bills to be produced in DUPLICATE.
2. ***The payment shall be made as per projected Performance Chart both Physical and Financial submitted by the Agency within 14 days of Issuing of Award of Contract based on Job completion period on approved Design/Lay-Out.***
3. However, as per instruction of the authority from time to time, the successful bidder shall have to produce the **BAR CHART** in terms of % of completion of work and Physical progress of the work accordingly
4. Payment shall be made after executing the order satisfactory in all respect.
5. **For Plant and Machineries : All payment will be made as per performance Chart (Physical & Financial) submitted by the agency prior to start the Job as above. However on prior approval from Competent Authority,**
   a) 75% Payment may be made after receiving the equipment's at site.
   b) 15% Payment may be made after successful installation & commissioning.
   c) 10% Payment may be made after one month of successful running of the equipment's.
   However, no interest shall be paid to the firm, if the payment is delayed due to whatsoever reasons. The payment of bills shall be withheld in case of violation of any tender terms & conditions.

09. GENERAL:

Unless otherwise stipulated all the works are to be done as per general conditions and general Specifications of the "Departmental Schedule" which means the Public Works Department, Schedule of Rates for works in West Bengal for the working area including up to date addenda and corrigenda, if any. The project should be executed as per IS code/IRC/MOST/MORTH standards regarding the quality of materials and various item of works. For general conditions and general specifications of items of works related to supply and carriage works, not appearing in the aforesaid Schedule of Rates in force including up-to-date addenda and corrigenda, if any, issued by the competent authority as applicable for the working at the time of submission of tender for the working area will be considered.

10. TERMS & CONDITIONS IN ORDER TO PRECEDENCE:

If the stipulations of the various components of the contract documents be at variance in any respect, one will override the other (only in so far as those are at variance) in the order of precedence as given below:

(a) Special terms and conditions

(b) Special specifications (Scope of work)

(c) General instructions.
(d) Notice Inviting e-Tender
(e) Schedule of probable items with approximate quantities
(f) Tender Form.

All works covered in the clause appearing hereinafter shall be deemed to form a part of the appropriate item or items of works appearing in the schedule whether specifically mentioned in any clause or not and the rates quoted shall include all such works unless it is otherwise mentioned that extra payment will be made for particular works.

11. ENGINEER-IN-CHARGE AND COMMENCEMENT OF WORK:

The word "Engineer-In-Charge" means the Executive Engineer, WBLDC Ltd. The word "Department" appearing anywhere in the tender documents mean WBLDC Ltd. (A Government of West Bengal Undertaking). The word "approved" appearing anywhere in the documents means approved by the Engineer-In-Charge. The work shall have to be taken up within seven days of the receipt of the work order. Failure to do so will constitute a violation of the contract stipulation as regards proportionate progress and timely completion of work and the contractor will thereby make himself liable to pay compensation or other penal action as per stipulation of the printed tender form.

12. CONDITION IN EXTENDED PERIOD:

When an extension of time for completion of work is authorized by the Engineer-in-charge , it will be taken for granted that the validity of the contract is extended automatically up to the extended period with all terms and conditions rates , etc. remaining unaltered , i.e the tender is revalidated up to the extended period .

The head of the corporation may allow maximum period of *14 days after the stipulated* date of completion . After that a penalty of 0.50 % which will be deducted from his R/A bill / Final bill as the case may be for each week of delay up to a maximum of 2.0 % on the amount put to tender. Penalty will be adjusted from Security Deposit / Performance Bank guarantee.

13. CO-OPERATION AND DAMAGES AND COMPLETION OF WORK:

All works are to be carried out in close co-operation with the Department and other contract or contracts that may be working in the area of work. The work should also be carried out with due regard to the convenience of the road/building users and occupants, if any. All arrangements and programme of work must be adjusted accordingly. All precautions must be taken to guard against chances of injury or accidents to workers, road users, occupants etc. The contractor must see that all damages to any property which, in the opinion of the Engineer-In-Charge are due to the negligence of the contractor are promptly rectified by the contractor at his own cost and expenses and according to the direction and satisfaction of the Engineer-In-Charge.

14. CONTRACTOR'S SITE OFFICE:

The contractor shall have an office adjacent to the work as may be approved by the Engineer-In-Charge where all directions and notice of any kind whatsoever which the Engineer-In-Charge or his representative may desire to give to the contractor in connection with the contract may be left and same when left at or sent by post to such office or delivered to the Contractor's authorized agent or representative shall be deemed to the sufficiently served upon the contractor.

15. INCIDENTAL AND OTHER CHARGES:

The cost of all materials, hire charges to Tools and plants, Labour, Corporation/Municipal Fees for water supply, Royalty or road materials (if any), Electricity and other charges of Municipalities or statutory Bodies, Ferry charges, Toll Charges, Loading and unloading charges, Handling chargers overhead charges

etc. will be deemed to have been covered by the rates quoted by the contractor except G.S.T. (Central and/or State), Income Tax, Terminal Tax, Turnover Tax etc. All other charges for the execution of the complete or finished work or in case of supply of materials and for carriage to the entire satisfaction of the Engineer-In-charge of the work. No claim whatsoever in this respect will be entertained.

16. AUTHORISED REPRESENTATIVE OF CONTRACTOR:

The contractor shall not assign the agreement or sublet any portion of the work. The contractor, may however, appoint and authorize representative in respect of one or more of the following purpose only-

a) General day to day management of work.
b) To attend measurements when taken by the Departmental Officers and sign the records of such measurements which will be taken of acceptance by the Contractor. The selection of the authorized representatives subject to the prior approval of the Engineer concerned and the contractor shall in writing seek such approval of the Engineer giving therein the name of work, Tender No., the Name, Address and the specimen signature of the representative he wants to appoint and the specific purposes as specified the representative will be authorized for even after first approval, the Engineer may issue at any subsequent date.

Revised directions about such authorized representative and the contractor shall be bound to abide by such directions. The Engineer shall not be bound to assign any reason for any of his directions with regard to the appointment of authorized representative. Any notice correspondence etc. issued to the authorized representative or left at his address, will be deemed to have been issued to the contractor himself.

17. POWER OF ATTORNEY:

The Provision of the power of attorney, if any, must be subject to the approval of the Department. Otherwise the WBLDC Ltd. shall not be bound to take cognizance of such of attorney. ***Third Party Engagement by The L-1 Agency (after issuing AOC) in exigency also is Strictly restricted .***

18. EXTENSION OF TIME:

For cogent reasons over which the contractor will have no control and which will retard the progress, extension of time for the period lost will be granted on receipt of application from the contractor before the expiry date of contract. No claim whatsoever for idle labour, additional establishment, cost of materials and labour and hire charges of tools & Plants etc., would be entertained under any circumstances. The contractor should consider the above factor while quoting his rate. Applications for such extension of time should be submitted by the contractor.

19. MATERIALS TO BE USED:

Suggested Brand Name/ names of different type of materials are to be use for this work as specified in PWD (WB) Schedule of Rate or as per direction of Engineer-In-Charge.

20. CONTRACTOR'S GODOWN:

The contractor must provide suitable godowns for cement and other materials at the site of work. The cement godown is to be sufficient in capacity and it must be water tight with either an elevated floor with proper ventilation arrangement underneath the floor or if solid raised flooring is made, cement is to be stored on bamboo or timber tonnage to the satisfaction of the Engineer-In-Charge. No separate payment will be made for these godowns or for the store yard. Any cement which is found at the time of use to have been damaged shall be rejected and must immediately to remove from the site by the Contractor or deposited as directed by the Engineer-In-Charge.

21. ARRANGEMENT OF LAND:

The contractor will arrange land for installation of his Plants and Machineries, his godown, store yard, labour camp etc. at his own cost for the execution of the work. Departmental Godown, if available may be spared for the purpose on usual charges as fixed by the Competent Authority.

22. USE OF GOVERNMENT LAND:

The contractor shall make his own arrangements for storage of tools, plant, equipments; materials etc. of adequate capacity and shall clear and remove on completion of work and shed, huts etc. which he might have erected in Government Land. Before using any space in Government Land of any purpose whatsoever, approval of the Engineer-In- charge should be needed.

23. CLEARING OF MATERIALS:

Before starting any work, work site, where necessary, must be properly dressed after cutting clearing all varieties of jungles shrubs, bamboo clusters or any undesirable vegetation from the alignment or site of works on completion of works all temporary structure or obstruction including some pipes in underground work, if any, must also be removed. All scars of construction shall be obliterated and the whole site shall be left in a clear and neat manner to the satisfaction of the Engineer-In-Charge. No separate payment shall be made for all these works, the cost thereof being deemed to have been included in the rates of various items of works quoted by the contractor in the schedule of probable items of works.

24. SUNDRY MATERIALS:

The contractor must erect temporary pillars, master pillars etc. as may be required in suitable places as directed by the Engineer-In-Charge at his own cost before starting and during the work by which the departmental staff will check Levels, layout different works and fix up alignment and the contractor shall have to maintain and protect the same till completion of the work. All petty and sundry material like, pegs, strings, nails, flakes instruments etc. and also skill labour require for setting out the levels for laying out difference structures and alignment shall also be supplied by the contractor as per direction of Engineer-in-Charge at his own cost without any extra claim towards the department.

25. SUPPLEMENTARY/ADDITIONAL ITEM OF WORKS:

Notwithstanding the provisions made in the related tender Form any item of the work which can be legitimately be considered as not stipulated in the specific schedule of probable items of work but has become necessary as a reasonable contingent item during actual execution of work will have to be done by then Contractor if so, directed by the Engineer-In-Charge and the rates will be fixed with manner as stated below:-

(a) Rate of Supplementary items shall be analyzed in the 1st instant extended possible from the rates of the allied items of work appearing in the tender schedule.

(b) Rate of supplementary items shall be analyzed to the maximum extent possible from rates of the allied items of work appearing in the P.W Department schedule of rates for Building and S&P along with all addenda and corrigenda of probable items of work forming part of tender document Rates for the working area enforce at the time of N.I.T.

(c) In Case, addition items do not appear in the above P.W Department Schedule of Rates, such items for the works shall be paid at the rates entered in the Public Works (Roads) Department Schedule of Rates along with all addenda and corrigenda for the working area enforce at the time of N.I.T.

(d) In case of any change in quantity due to any kind of alteration during actual work, the contractor will not be liable to put up any claim against any shortfall of quantity in execution. However, if it is needed to take up any item in excess or supplement to the priced quantity, the payment for the extra work will be paid as per the prevailing govt. rule.
Unbalanced market rates shall never be allowed Contractual percentage shall only be applicable with regard to the portions of the analysis. It may be noted that the cases of supplementary items of claim shall not be entertained unless supported by entries in the Measurement Book or any written order from the tender accepting authority.

26. <u>COVERED UP WORKS:</u>

When one item of work is to be covered up by another item of work the latter item shall not be done before the formal Item has been measure up and has been inspected by the Engineer-in-charge as the authorized representatives of the Engineer-In-Charge and order given by him or proceeding with the latter item of work. When however, this is not possible for practical reasons, the Sub-assistant Engineer, if so, authorized may do this inspection in respect of minor works and issue order regarding the latter item.

27. <u>APPROVAL OF SAMPLE:</u>

Samples of all materials to be supplied by the contractor and to be used in the work shall have to be approved by the Engineer-in-charge and checking the quality of such materials shall have to be done by the concerned Department prior to utilization in work.

28. <u>INCIDENTAL AND OTHER CHARGES :</u>

The contractor shall have to arrange for their own source of energy for operation of equipments and machineries, driving of pumping set, illuminating work site, office etc. that may be necessary in difference stages of execution of work. No facility of any sort will be provided for utilization of the departmental sources of energy existing at site of work. Arrangement for obtaining water for the work should also be made by the contractor at his own cost. All cost for getting energy and / or for any purpose whatsoever will have to be borne by the contractor for which no claim will be entertained.
The cost of all materials, hire charges to Tools and plants, Labour, Corporation/Municipal Fees for water supply, food staff, medical aids ,Royalty or road materials (if any), Electricity and other charges of Municipalities or statutory Bodies, Ferry charges, Toll Charges, Loading and unloading charges, Handling chargers overhead charges etc. will be deemed to have been covered by the rates quoted by the contractor inclusive of Sales Tax (Central and/or State), Income Tax, Terminal Tax, Turnover Tax etc., all other charges for the execution of the complete or finished work or in case of supply of materials and for carriage to the entire satisfaction of the Engineer-In-charge of the work.

29. <u>DRAWINGS:</u>

Intending Bidder must have to submit Drawing/Design and Lay out of the entire Job based on Site visit in due time .All works shall be carried out in conformity with *the drawings /Lay Out approved by this Department*. After Selection the Approved Agency have to Submit projected Lay out of Plan (Planning of job completion) both Physical as well as Financial based on approved Drawing <u>within 14 Days from the issuing of Award of Contrac</u>t. Necessary Payment will be made based on such projection as per payment terms and conditions. However, the Contractor shall have to carry out all the works according to the departmental general arrangement drawing and detail working drawings to be supplied by the Department from time to time.

30. UNSERVICEABLE MATERIALS:

The Contractor shall remove all unserviceable materials, obtained during execution at place as directed. The contractor shall dressed up and clear the work site after completion of work as per direction of the Engineer-in-Charge. No extra payment will be made on this account.

31. CONTRACTOR'S RISK FOR LOSS OR DAMAGE:

All risk on account of railway or road carriage or carriage by boat including loss or damage of vehicles, boats, barges, materials or labour, if any, will have to be borne by the contractor without any extra claim towards department.

32. IDLE LABOUR:

Whatever the reasons may be no claim of idle labour, enhancement of labour rate additional establishment cost, cost of TOLL and hire and labour charges of tools and plants Railway freight etc. would be entertained under any circumstances.

33. CHARGES AND FEES PAYABLE BY CONTRACTOR:

a) The contractor shall be all notices and pay all fees required to be given or paid by any statute or any regulation or by law and any local or other statutory authority which may be applicable to the works and shall keep the department against all penalties and liability of every kinds for breach of such statute regulation or law.

b) The Contractor shall have save harmless and indemnify the department from and against all claims demands suit and proceedings for or an account of infringement of any patent rights design, trade mark of name of other Protected write in respect of any constructional Plant machine, work, materials, thing or process used for or in connection with works or temporary works or any of them.

34. ISSUE OF DEPARTMENTAL TOOLS AND PLANTS:

All Tools and Plants required for the work will have to be supplied by the Contractor at his own cost, all cost of fuel and stores for proper running of the Tools and Plants must be borne by the Contractor.

35. REALISATION OF DEPARTMENTAL CLAIMS:

Any some of money due and payable to the contractor (including security deposit returnable to him) under this contract may be appropriated by the Government and set off against any claim of Government for the payment of sum of money arising out of this contract or under any other contract made by the contractor with the Government.

36. COMPLIANCE OF DIFFERENT ACTS:

The contractor shall comply with the provisions of the Apprentices Act, 1961, Minimum Wages Act, 1848. Contact Labour (Regulation and Abolition) Act 1970 and the rules and orders issued hereunder from time to time. If he fails to do so, the Engineer, may at his discretions, take necessary measure over the contract. The Contractor shall also make himself for any pecuniary liabilities arising out on account of any violation of the provision of the said Act(s). The Contractor must obtain necessary certificate and license from the concerned Registering Office under the Contract Labour (Regulation & Abolition) Act, 1970. The contractor shall be bound to furnish the Engineer-In-Charge all the returns particulars or date as are called for from time to time in connection with implementation of the provisions of the above Acts and Rules and timely submission of the same, failing which the contractor will be liable for breach of contract and the Engineer-In-Charge may at his discretion take necessary measures over the contract.

37. SAFETY, SECURITY AND PROTECTION OF THE ENVIRONMENT:

The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

a) Have full regard for the safety of all persons and the Works (so far as the same are not completed or occupied by the department),
b) Provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer-in-Charge for the protection of the Works or for the safety and convenience of the public or others,
c) Ensure that all lights provided by the Contractor shall be screened so as not to interfere with any signal light of the railways or with any traffic or signal lights of any local or other authority.

d) Take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.

38. TRANSPORTATION ARRANGEMENT:

The contractor shall arrange for all means of transport including Railways Wagons required for carriage and supply of materials and also the materials required for the construction work. The Department may however, at their own discretion grant necessary certificates, if required, for procurement of railways Wagons. But, in case of failure of the Department to help the Contractor in this respect, the contractor will have to procure wagons at his own initiative and no claim whatever on the ground of non-availability of wagons shall be entertained under any circumstances. If Railways Wagons are not available, the Contractor will have to depend on transport of materials by road as necessary to complete the work in time and the contractor must consider this aspect while quoting rate.

39. PROGRAMME OF WORK:

Before actual commencement of work the contractor shall submit a programme of construction of work clearly showing the materials men and equipment. The contractor will submit a programme of construction in the pattern of Bar Chart or Critical Path Method and a time table divided into four equal periods of progress of work to complete the work within the specific period for approval of the Engineer-In-Charge who reserves the right to make addition, alterations and substitutions to such programme in consultation with the contractor and such approved programme shall be adhered to by the contractor unless the same is subsequently found impracticable in part or full in the, opinion of the Engineer-In-Charge and is modified by him. The contractor must pray in writing, showing sufficient reasons therein, for modification of programme.

The conditions laid down tender form regarding the division of total period and progress to work and the time table therefore as provided in the said clause shall be deemed to have been sufficiently complied with it the actual progress of work does not fall short of the progress laid down in the approved time table for one fourth, half and three fourth of time allowed for the work.

40. SETTING OUT OF THE WORK:

The contractor shall be responsible for the true and perfect setting out of the work and for the correctness of the position, levels, dimensions and alignments of all parts of work, if any, rectification or adjustment becomes necessary the contractor shall have to do the same at his own cost according to the direction of the Engineer-In-Charge during progress of works. If any, errors appears or arise in respect of position, level, dimensions or alignment of any part of the work contractor shall at his own cost rectify such defects to the satisfaction of the Engineer-In-Charge. Any setting out that may be done or checked by either of them shall not in any way relieve the contractor or their responsibility for correctness and rectification thereof.

41. PRECAUTIONS DURING WORKS:

The contractor shall carefully execute the work without disturbing or damaging underground or overhead service utilities viz. Electricity, Telephones, Gas, Water pipes, Sewers etc. in case disturbances of service utilities is found unavoidable the matter should immediately be brought to the notice of the Engineer-In-Charge and necessary precautionary measures as would be directed by the Engineer-In-Charge shall be carried out at the cost and expenses of the contractor. If the service utilities are damaged or disturbed in any way by the contractor during execution of the work, the cost of rectification or restoration of damages as would be fixed by the Engineer will be recovered from the contractor.

42. NIGHT WORK:

The contractor shall not ordinarily be allowed to execute the work at night. The contractor may however, have to execute the work at night, if instructed by the Engineer-in-Charge. For true technical or emergent reasons the work may require to be executed during the night also according to the instruction of the Engineer-in-Charge. In that case the contractor shall have to arrange for separate set of labour with sufficient and satisfactory lighting arrangement for the night work. No extra payment whatever, in this respect will be made to the contractor.

43. TESTING OF QUALITIES OF MATERIALS & WORKMANSHIP :

All materials and workmanship shall be in accordance with the specifications laid down in the contract and the Engineer-In-Charge reserves the right to test, examine and measure the materials/workmanship direct at the place of manufacture, fabrication or ***at the site of works*** or any suitable place. The contractor shall provide such assistance, instrument machine, labour and materials as the Engineer-In-Charge may require for examining, measuring and testing the works and quality, weight or quantity of materials used and shall supply samples for testing as may be selected and required by the Engineer- In-Charge without any extra cost. Besides this, he will carry out tests from outside Laboratory as per instruction of Engineer-In-Charge. ***The cost of all such tests would be borne by the agency irrespective of Site Lab facilities with all equipment.***

44. TIMELY COMPLETION OF WORK:

All the supply and the work must have to be completed in all respects within the time specified in Notice Inviting Tender from the date of work order. Time for completion as specified in the tender shall be deemed to be the essence of the contract.

45. PROCUREMENT OF MATERIALS:

All materials required for complete execution of the work shall be supplied by the contractor after procurement from authorized and approved source.

46. REJECTION OF MATERIALS:

All materials brought to the site must be approved by the Engineer-In-Charge. Rejected materials must be removed by the Contractor from the site within 24 hours of the issue of order to that effect. In case of non-compliance of such order, the Engineer-In-Charge shall have the authority to cause such removal at the cost and expense of the contractor and the contractor shall not be entitled to claim for any loss or damage of that account.

47. IMPLIMENTS OF WORK IN ITEMS:

Except of such items as are included in the Specific Priced Schedule of probable items and approximate quantities no separate charges shall be paid for traffic control measures, shoring, shuttering, dewatering, curing etc. and the rates of respective items or works are to be deemed as inclusive of the same. **Intending Bidders is solely responsible for Temporary Electric Connection as well as Consumption unit with his own discretion.**

48. If required , related civil work to be performed by the intending bidder within this scope of work , no extra fund will be allowed for such cases except major work or as desired by the Tender Inviting Authority / Engineer-In-Charge.

49. FORCE CLOSURE:

In case of force closure or abandonment of the works by the Department the contractor will be eligible to be paid for the finished work and reimbursement of expenses actually incurred but not for any losses.

50. TENDER'S RATE:

The contractor should note that the tender is strictly based on the rates quoted by the Contractor on the priced schedule of probable item of work. The quantities for various other items of works as shown in the priced schedule of probable items of works are based on the drawing and design prepared by the Department. If variations become necessary due to design consideration and as per actual site conditions, those have to be done by the contractor at the time of execution at the rate prescribed in the tender clause. No conditional rate will be allowed in any case.

51. DELAY DUE TO MODIFICATION OF DRAWING AND DESIGN:

The contractor shall not be entitled for any compensation for any loss suffered by him due to delays arising out of modification of the work due to non-delivery of the possession of site. The whole work will have to be executed as per Departmental drawings available in this connection at the tender rate.

52. ADDITIONAL CONDITIONS:

a) As per Finance (Taxation) Department of Income Tax Will be made from each bill of the contractor as per applicable rate in force.

b) Labour welfare Cess will be deducted @ 1(one) % of gross bill value as per rule. The Contractor will remain liable for following with West Bengal Contract Labour(Regulation & Abolition) Rules in force &necessary. Certificates from appropriate authority to be submitted within 7 (Seven) days from the date of the work order'

c) Contractor / Agency must have to submit the list of unskilled labour as per Annexure-VII of Karmashree Scheme as mentioned Clause no.8 of Eligibility Criteria.

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53. DEFECT LIABILITY PERIOD:

Full Security Deposit should be refunded to the agency after one month on expiry of Defect Liability Period of work. If any defect/ damage is detected during this period as mentioned the agency shall make the same good at his own expense to the satisfaction of the Engineer-In-Charge or in default the Engineer-In-Charge may cause the same to be made good by other agency and deduct the cost (of which the certificate of the Engineer-In-Charge shall be final) from his security deposit or any sums that may be then, or at any time thereafter become due to the agency.

Defect Liability Period (DLP) shall be commenced from the actual completion of work and considered as follows depending upon the different nature of works:-

A) (i) **Defect liability period shall be 03 (three) months for the work** of patch repair or patch maintenance in nature or combination thereof from the date of actual completion of work.
(ii) Full security deposit shall be refunded to the agency after one month on expiry of DLP (three months from the actual date of completion of the work).

B) (i) **Defect liability period shall be 01 (one) year from the actual** date of completion for the work of thorough bituminous surfacing work with bituminous thickness less than 40mm, and Repair and Rehabilitation of any road/ bridge/ culvert/ building/ sanitary plumbing work.
(ii) Full security deposited shall be refunded to the agency after one month on expiry of DLP (one year from the date of actual completion of work).

C) (i) Extension of building/ bridge/ Calvert, construction of new flexible pavement up to bituminous level, widening and strengthening of flexible pavement, improvement of riding quantity/ strengthening of flexible pavement which **has been designed for a period of three years or more**. Providing only mastic asphalt layer over existing bituminous surface without providing bituminous profile corrective course/ bituminous base course, the DLP of the work shall be three years from the actual date of completion of work.
(ii) a) No Security Deposit shall be refunded to the agency for 1st year from the actual date of completion of work.
(ii) b) 30 % of the Security Deposit shall be refunded to the agency after one month on expiry of DLP ***(two years from the actual date of completion of work).***
(ii) c) The balance 70 % of the Security Deposit shall be refunded to the agency after one month on expiry of DLP (three years from the actual date of completion of work).

D) (i) Construction of new building /bridge/culvert including construction of approach roads for bridge/ culvert, construction of rigid pavement, re-construction of rigid pavement, construction of new flexible pavement covered by mastic asphalt which has been designed for a period of 05 (five) years or more widening & strengthening of flexible pavement covered by mastic asphalt, improvement of riding quality/ strengthening of flexible pavement covered by mastic work which **has been designed for a period of 05 (five) years or more. The DLP of the work shall be 05 (five) years from** the actual date of completion of work.
(iii) a) No Security Deposit shall be refunded to the agency for 1st three years from the actual date of completion of work.

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(ii) b) 30 % of the Security Deposit shall be refunded to the agency after one month on expiry of DLP (four years from the actual date of completion of work).
(ii) c) The balance 70 % of the Security Deposit shall be refunded to the agency after one month on expiry of DLP (five years from the actual date of completion of work).

54. There shall be no provision of Arbitration. Hence clause 25 of the West Bengal Form No. 2911(ii) shall not be allowed vide memo no. 558/SPW dated 13.12.2011 of P.W.D Establishment Branch.

55. Cement Procure & Supply by the Contractor shall be of ordinary Portland cement 53 grade, 43 grade, conforming (IS 8112) or PPC/PSC the grade to be decided by the Engineer-In-Charge or as per instruction on specified in the approved drawing of this department or as stipulated in the departmental schedule of rates.

56. During opening of bid Managing Director may call open bid/ sealed bid after opening of the said bid to obtain the suitable rate further, if it is required. No objection in this respect will be entertained if raised by any bidder present or absent during opening of tender.

57. In case of any unscheduled holiday on the aforesaid dates [Sl. (v)], the next working day will be treated as schedule/ prescribed date for the same purpose.

58. No Adjustment of Price or Price Escalation of any kind will be allowed. Notification No. 23-CRC/2M-61/2008 dated 13.03.2009 & Notification No. 38-CRC/2M-61/2008 dated 20.04.2009 shall not be applicable for the job included in this NIT.

59. If more than one Bidder quoted same rate and which are found lowest at the time of opening, such similar multiple rates will not be entertained / accepted. Lowest offer will be ascertained by sealed bid amongst the lowest bidder.

60. The Earnest Money may be forfeited if ;-

a) If the Bidder withdraws the Bid during the period of Bid validity.
b) In case of successful Bidder, if the Bidder fails to execute formal agreement within the stipulated time period.
c) During scrutiny, if it is come to the notice of tender inviting authority that the credential or any other document which were uploaded & digitally signed by the Bidder are incorrect / manufactured / fabricated.
d) Earnest Money converted to Security Deposit will be forfeited as per rules stated above.

62. All intending bidders should be appointed one Civil / Electrical Engineer during execution of work as the case may be.

(Dr. Gouri Shankar Koner)
Managing Director
W.B.L.D.C. Ltd

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NIT No: WBARD/WBLDC/NIT-728e/2024-25 **Date of Issue: 19/07/2024**

Scope of Work (Annexure-A)
(MECHANICAL - CIVIL -ELECTRICAL)

Job Name : ***Establishment of a New Milk Processing & Milk Products Plant at Matigara Himul Campus, Darjeeling-734010, West Bengal on Turnkey Basis during the year 2024-2025.***

I . Plant & Machineries and allied Electrical (Mechanical & Electrical Details)

1.0) TANKER MILK RECEPATION & RAW MILK STORAGE

1.01) Incoming Can Conveyer (powered) with MS platform

Capacity : As per BOQ

Qty: : As per BOQ

Incoming Can Conveyor shall be two track type with one no. 90 Deg. Bend (if required) and drive unit. The chain shall be of SS/poly acetylene and framing structure shall be SS 304. Adjustable ball feet shall be provided in the legs.

The length of incoming conveyors shall be as per final compact layout.

Length : As per layout

1.02) Can Tipping Bar

Capacity : As per BOQ

Qty: : As per BOQ

This will be used as can support in manual tipping of milk cans into the weigh bowl. It shall be a horizontal wooden (teak) bar supported on two legs. The legs shall be grouted down to the floor.

1.03) Can Washer with Incoming & Outgoing Conveyer with Lid washer

Capacity : As per BOQ
Qty : As per BOQ

Splash Guard: Can will be tipped into the splash guard where it will undergo coarse filtration Here, the can after tipping shall be kept upside down over SS Ship chain conveyor, which will carry the empty can over the drip collection tray.

Drip Collection Tray: While travelling over the ship chain as above, residual milk shall drip in to the SS drip tray of 1 x 1.5 m length. The drip milk shall be collected in separate can through a nozzle.

Lid conveyer: The lids shall be placed over the chute and passed on the lid conveyer inside the can washer. The chute shall be designed as per the site condition.

The can washer shall be constructed in SS frame with SS track, hood, covers and condensing box.

Configuration : Straight through

Washing Sequence:

Fresh water pre-rinse

Here the water jet shall remove the residual milk adhere ring to the surface of the can. Pressure hot water first rinse having minimum 3.5 kg/sq cm discharge head and 55 C deg. temp. (Return water from after rinse shall be used). Pressure hot detergent cleaning having mini.3.5 kg/sq cm discharge head and 70 C deg temp. here the fat shall be melted and SNF shall be cleared from the surface with the help from detergent. Pressure hot water after rinse having minimum 3.5 kg/sq cm discharge head and 80 Deg. C temperature. In this section, the can is completely cleaned and shall be ready for sterilization.

Live Steam sterilization. – in this section, the can is finally sterilized using the live steam.

Hot Air Drying at 100 Deg C. – The can before discharge from the can washer shall be completely dried by blowing hot air at about 100 Deg. C.

Condensing Box: The hot Air and wet vapor shall be sucked by a blower through a condensing box mounted over the can washer. The condensate from the condensate box shall be drained through an SS pipe on the floor/nearest drain point.

Required Services: Steam at 3.5 Kg/sq. cm pressure & HP steam at 7 bar pressure for steam coil of hot air generator.

Water : Raw/Soft water at 3 kg/sq. cm
Electric Power 3 phase + N electrical supply from MCC to terminal box + earthing
Finish all welding joints shall be ground flush and finished to 150 grit all SS surfaces are to be polished 150 grits.

Scope of Supply:

Main Enclosure: The main enclosure which houses the washing & sterilizing sections shall be made. from 2 mm thick stainless-steel confirming to AISI 304 having removable

stainless steel (AISI 304) inspection doors all along its length at the front side for easy access. Can guide shall be provided all along the inside length.

Under frame: The complete under frame shall be made from SS pipe section. The complete assembly shall have sufficient number of MS legs with stainless steel ball feet having 50 mm vertical adjustment.

Conveyor Chain: The machine conveyor chain shall ensure that the individual cans and lids remain properly spaced. The drive motor, transmission drive shaft and idler shaft shall have adequate and accessible provision for adjustment all tensioning.
MOC: SS 304

Condensate Box: The vapor duct ending in a condensate box shall be provided on top of can washer for condensing flash vapor from the can washer. The warm water from the condensate box can be in the hot water section of the can washer. The condenser and duct shall be made from SS 304. There shall be an exhaust blower of suitable capacity mounted on flanged type motor to suck vapor from the can washer and throw out non condensable gases. Exhaust fan shall have protection against chemical fumes and moisture.

The exhaust duct shall be extended up to nearest point outside building with all support and structure required to ensure that heat is not rejected in the building area.

Can Discharge: The clean and dry cans shall be discharged from the machine on to a clean can conveyor in the upright position with the timing mechanism. The system shall also be provided with a mechanical chute arrangement to receive the clean lid for manual placement of lids on the cleaned cans.

Washing Stations:

Washing: The pumping and jetting arrangement shall apply sufficient washing liquid to the inside and outside surfaces of the cans and the lids.

Filters: A SS pressure filter shall be provided in the liquid re-circulation line to prevent choking of pump impeller and nozzles. The filter shall be fabricated from AISI 304 SS material.

Sump Tanks: These shall be made from stainless steel AISI 304 and would be used as feed tanks for various washing liquids. Correct operating levels shall be maintained automatic in all the sump tank with necessary float valves. There shall not be any intermixing between the different Liquids- 3 nos.

Water Heating Arrangement: For hot water, direct steam injection system shall be provided using steam-water ejector for mixing steam with water. For detergent heating indirect system with SS heating coil ending in a steam trap shall be provided. Condensate from the coil shall be discharged into the hot water tank. Suitable drain points to be provided to drain the used liquid.

Air Heating Arrangement: For Can drying hot air shall be used and blower, air heater and ducting etc, shall be provided. Coil of air heater shall be SS tubes of 14 G.

Jet Nozzles: Nozzles for jets shall be made from stainless steel conforming to AISI 304 - 1 lot

Pumps: The centrifugal Monoblock type pump set having cast iron impeller, cast iron body and SS sheet with mechanical seal having 35 MWC discharge pressure shall be supplied having required capacity. – 3 Nos.

Instruments: Suitable connections/thermos well shall be provided on the delivery sides of the pumps and on the sump tanks for fixing pressure and temperature gauges. Instrument panel fabricated from SS 304 with acrylic cover shall contain dial type pressure gauges and digital temperature indicators.

Control Panel:

Main Enclosure: The enclosure and supporting structure shall be made from stainless steel conforming to AISI 304.The enclosure shall be moisture, dust, and vermin proof. Panel shall be foot-mounted type, by 100 mm SS pipe.

Mimic Diagram: It shall show the complete can washing process with LED's showing the operation of various motors.

Push Buttons and Indicating Lamps: ON/OFF push buttons for all the motors. All the push buttons shall have indicating lamps and suitable inscriptions. Panel shall also have an emergency lockable switch to stop total operation of the can washer in case of emergency.

Wiring: The control panel shall be completely pre wired. The wiring shall be done by copper cables and be dressed in accordance with the standard practice.

Termination Points: All distribution piping shall be pre-assembled and terminated at a single flange for each service connection

1.04) Electronic Weigh Bowl with weigh scale

Capacity : As per BOQ
Qty : As per BOQ

SS Weigh Bowl shall be suspended from the Weigher and its weight is sensed through electronic resistive/capacitive strain gauge load cells.

MOC : SS 304
Capacity : As per BOQ
Qty : As per BOQ

Electronic type weigh scale shall be used for weighing Milk.
The system shall consist of;

Measurement: Through Resistive/capacitive type Load cell.

Display: Weight of milk will be indicated in bright seven segment LEDs'/LCD of 25 mm height. There shall be no visual errors. It will be possible to mount the display separately at a convenient point.
System would be powered with 230 V, 1 phase, 50 HZ AC supply. It will have automatic zeroing and span drift correction. It will be able to work in ambient temperature of 50 Deg. C. and 90% relative humidity. System shall have facility for interfacing with a PC for entry/recording of data. Load cells shall confirm to IP 65 and shall withstand overload of 300% to take care of the impact loading when milk is poured into the weigh bowl.

A dedicated tailor-made MIS system for reception data entry and collection shall be supplied.

1.05) Can Scrubber with Lid Scrubber

Capacity : As per BOQ

Qty : As per BOQ

Duty : To clean the empty can and Lid after unloading milk It shall be motorized detergent cleaner with special brushing arrangement. Bidder to submit the GA drawing with the offer showing dimensions.

1.06) SS dump Tank (Single Compartment)

Capacity : As per BOQ

Qty : As per BOQ

Function : For collecting and storing the milk

Type : Open rectangular trough with cover

Material : 2 mm SS 304

Accessories : Bottom outlet, ball feet & suitable cover with opening for milk receiving

1.07) Pipe in Pipe filter for Milk

Duty : For online filtering of milk before chilling

Capacity : As per BOQ

Quantity : As per BOQ

Material : Stainless steel confirming to AISI 304.

Strainer : Pipe in pipe type

Gasket : Food grade rubber

1.08) Raw Milk Transfer Pump for Can Reception

Capacity : As per BOQ

Qty : As per BOQ

Type : Centrifugal, mono block

Fittings : Quick opening sanitary fittings

Material : AISI 316

Mounting : Free standing with adjustable SS ball feet

Shaft sealing : Mechanical shaft seal

Gasket : Nitrile rubber

Shroud : AISI 304 with acoustic lining

Motor : 415V, AC, 3 phase, 50 Hz. EFF-I (IE3) Squirrel cage induction motor with TEFC/IP 55 Enclosure.

Note:

1. Suitable arrangement to be done for cooling of motor running with VFD to avoid over heating while running on low speed. Use special motor for VFD operated pumps.
2. The SS shroud shall be cladded with sound barrier lining for noise reduction.

1.09) Raw Milk Chiller - Can reception

Capacity : As per BOQ

Qty : As per BOQ

Type : Plate heat exchanger with SS 316 type plates

MOC of plate : SS 316

Duty : This PHE shall be used to chilled raw milk from 35 Deg. C to 4 Deg. C with chilled water

Instruments : 1. Temp control valve for chilled water
2. Milk in/out Temp. Transmitter
3. Temp. Transmitter on Chilled water return line

Raw milk content : as mentioned in the design basis

Milk Feed temp. : 35 Deg. C (Max)

Milk Discharge Temp. : 4 Deg. C (Max Chilled water feed temperature: 2 Deg. C)

Maximum permissible chilled water flow : 1:3 ratio of milk

Maximum pressure drops on milk side : 0.5 Kg/cm2

Note:
Manual Isolation valves on in and out line and with NRV on return line to be considered.

1.10) Can Reception Panel for Milk Unloading & CIP Operation

Capacity : As per BOQ

Qty : As per BOQ

This shall be SS control panel with push buttons for start/stop/ CIP operation of the can unloading system. Bidder to submit the design details for approval before commencing the work in the event of placement of order.

1.11) FDA Approved Tanker reception Hose (6 meter) with rubber rings for safety

Size : As per BOQ

Qty : As per BOQ

Type : Crush proof reinforced plastic spiral construction flexible hose with vulcanized SS end connection & fittings, resistant to CIP cleaning liquids up to 900C with rubber/polymer protection ring to prevent the hose from soiled ground

Length : As per BOQ

Material : Food grade, US FDA approved

NOTE : Connections piece with welded reducers required to connect 63.5mm tanker outlet to be considered in the scope.

1.12) SS De-aeration Vessel

Capacity : As per BOQ

Qty : As per BOQ

Duty : To ensure no dry running of unloading pump & to remove air

Type : Cylindrical, no foam side entry and bottom outlet with continuous level sensor to control the pump operation.

MOC : SS 304

Instruments : Low &High-Level Switches and automatic BF valve for air removal.

1.13) Inline Filter (Pipe in Pipe)

Capacity : As per BOQ

Qty : As per BOQ

Duty : For online filtering of milk.

Material : Stainless steel confirming to AISI 304

Filter : Perforated type filter

Mesh Size : 50 mesh

Gasket : Food grade rubber

1.14) Milk Transfer Pump (1+1 cold Standby)

Capacity : As per BOQ

Qty : As per BOQ

Type : Centrifugal, mono block

Fittings : Quick opening sanitary fittings

Material : AISI 316

Mounting : Free standing with adjustable SS ball feet

Shaft sealing : Mechanical shaft seal

Gasket : Nitrile rubber

Shroud : AISI 304 with acoustic lining

Motor : 415V, AC, 3 phase, 50 Hz. EFF-I (IE3) Squirrel cage induction motor with TEFC/IP 55 Enclosure.

Note:

1. Suitable arrangement to be done for cooling of motor running with VFD to avoid over heating while running on low speed. Use special motor for VFD operated pumps.
2. The SS shroud shall be cladded with sound barrier lining for noise reduction.

1.15) Raw Milk Chiller for Tanker Milk

Capacity : As per BOQ

Qty : As per BOQ

Type : Plate heat exchanger with SS 316 type plates

MOC of plate : SS 316

Duty : This PHE shall be used to chilled raw milk with chilled water

Instruments:

1. Temp control valve for chilled water
2. Milk in/out Temp. Transmitter
3. Temp. Transmitter on Chilled water return line

NOTE:

All TT for this equipment shall have head mounted display with backlight

Raw milk content : as mentioned in the design basis

Milk Feed temp. : 10 Deg. C (Max)

Milk Discharge Temp. : 4 Deg. C (Max)

Chilled water feed temperature : 2 Deg. Celsius

Maximum permissible chilled water flow : 1:2 ratio of milk

Maximum pressure drops on milk side : 0.5 Kg/cm2

Note:
Manual Isolation valves on in and out line and with NRV on return line to be considered.

1.16) Burst Rinse system for tanker milk recovery

Size : As per BOQ

Length : As per requirement

Qty : as per BOQ

Duty : For Burst Rinse before CIP to recover the milk solids

Material of construction: SS 304 for dummy man way

Accessories : Air vent, spray ball and clamps Each Dummy many ways should consists of required no. of man ways and fittings required for Burst Rinse of tanker before going to CIP. The hose shall be able to withstand 3.5 bar pressure. Hose shall have SMS union to fit at tanker flushing manhole.

There shall be push button on the top of each tanker bay to start soft water bursting for required time comprising automatic valve backed up by manual valve in the soft water line

1.17) Dummy Manway for Tanker CIP with spray ball

Dummy man way shall be used to clean the tanker without CIP spray ball. It shall consist of CIP spray ball (openable) type. Spray Turbine to be considered for tanker CIP.

Capacity : As per BOQ

Qty : As per BOQ

MOC : SS 304

Accessories : CIP spray ball (openable type), clamp etc.

1.18) Tanker CIP forward Hose

Capacity : As per BOQ

Qty : As per BOQ

Type : Crush proof, acid & Alkali proof hose with temp resistance up to 90 Deg. C

1.19) Tanker CIP Return Hose

Capacity : As per BOQ

Qty : As per BOQ

Duty : to connect the tanker to CIP return pump during tanker CIP

All other specification is same as per item no: 1.18

1.20) Tanker CIP Return Pump

Capacity : As per BOQ

Qty : As per BOQ

Type : Centrifugal, Self-priming

All other specifications are same as per item no: 1.14

1.21) Electronical Weigh Bridge for tanker

Capacity : As per BOQ

Purpose : Weighing and data recording for road milk tankers

Type : Static, pit less type, electronic load cell operated, microprocessor-based weighing platform

Load cell : Compression Type load cells

Load cell quantity : Std. (Minimum) of equal cap. Each as per BOQ.

Weighing Platform : Platform dimensions suitable for weighing 25 KL cap. RMT's

The total weighing system will conform to internationally adopted OIML recommendations conforming to Weights and Measures Act in India. Display resolution shall be 10 Kg. Load cell accuracy should be minimum +/- 0.016% on full scale. The least count of weighbridge display should be 5 kgs.

1.22) Tanker Reception Panel for Milk Unloading & CIP Operation (Push Button type)

Capacity : As per BOQ

Qty : As per BOQ

Touch screen OP in SS panel for reception operations like start, stop, pause, water purge etc.

Touch screen OP in SS panel for tanker Burst rinse and CIP operation start, stop, pause etc.

RAW MILK STORAGE

1.23) Raw Milk Silo

Capacity : As per BOQ

Qty : As per BOQ

Type : Outdoor type silo with alcove.

Material : a) Inner shell - AISI 304, 3 mm (bottom), 4 mm (middle), 3mm (top)sheet & conical top 3 mm

b) Outer cladding - AISI 304: 2 mm thick in welded construction or thickness as per OEM design with guarantee.

Finish : 2B Finish sheet with 180 grit finish for joints

Agitation : Single side mounted mechanical agitator to ensure uniform fat distribution without any adverse effect on the contents in 10-minute time. Slow speed agitator is only permitted

Ports and fittings:

1. Inlet/outlet
2. Breather – as per OEM Design
3. CIP spray ball – rotating type (openable type)
4. Nozzles for high- and low-level sensors
5. Nozzle for level transmitter
6. Nozzle for temperature sensor,
7. man way
8. alcove
9. light cum sight glass with LED lamp & 1.5 V battery
10. leaky and rainwater down pipe up to foundation level and to be installed within the insulation
11. Toe guard (fully welded) to ensure no water mark in case of any CIP Leakage on silo outer surface
12. SS railing of 2 mtr height - as per OEM Design
13. Instrument conduit, provided within the insulation
14. Silo surface cleaning water ring on top of silo with water connection port

Insulation: PUF Insulation of suitable thickness to ensure temp. rise does not exceeded 1 deg. C in 24 hours' time in all seasons. (as per OEM Design)

The brief detail for insulation is as follows;
First layer: 15 mm thick PUF of 35-40 Kg/m3 density
2nd Layer: 50 mm EPS of 16-18 Kg/m3 Density to be applied longitudinally with bitumen
3rd Layer: 50 mm EPS of 16-18 Kg/m3 Density to be applied radially with bitumen
4th Layer: 1mm thick aluminium Foil Bottom will be PUF injected of density 45-50 Kg/M3

Silos Bird guard: Milk silos top shall be covered with bird guard for preventing the entry of bird. The MOC will be SS. The entry to the bird guard cage shall have spring closing door with helical hinges

Silo Base: MS base of the silo shall be chemically cleaned completely and shall be applied with Epoxy Primer and two coats of Epoxy Paint to prevent corroding due to moisture in grace

Supporting Structure: As per OEM Design

Instruments:
1. RTD for milk temperature to be indicated on MMI (SCADA)
2. Proximity switch for man way status indication
3. level switches for high & low indication on MMI
4. level transmitter for level indication to MMI as well as local display

Note:
1. Supplier shall submit GA drawing for approval to the purchaser for tank prior to fabrication work in the event of placement of order
2. The silo support structure shall be welded in such a way that no metal-to-metal contact is established between inner shell and out shell to avoid sweating during all the weather condition
3. Stage inspection to be offered for MOC, fabrication, welding, insulation, and final inspection before dispatch
4. Agitator seal leakage drainpipe with 38 mm blind union to be provided
5. Manual weldable butterfly valve shall be provided at the common inlet/outlet of the silo for safety
6. Silo manhole shall align smoothly and inside shall match with the silo wall to have proper cleaning of the manhole surface

1.24) Raw Milk Silo interconnecting platform with railing & approach ladder in SS 304 constructions

Capacity : As per BOQ

Qty : As per BOQ

This shall be SS 304 chequered plate platform interconnecting all silos. Connecting platform and approach ladder in SS304 construction to be considered. Platform for the silos shifted from existing dairy to be considered

Supplier to submit GA drawing for approval before commencing fabrication work in the event of placement of order

1.25) SS railing & ladder railing

Capacity : As per BOQ

Qty : As per BOQ

All silo shall have SS common platform for top approach and common ladder as per site requirement. The design must be approved before commencing the fabrication work in the event of placement of order.

1.26) Bird Cage for raw Milk Silo with openable door

Capacity : As per BOQ

Qty : As per BOQ

This shall be installed on top of each silo for bird proofing in perforated SS 304 mesh construction of 0.8 mm thickness with approach door with door closer arrangement.

The scope shall include bird cage for existing silos also.

Supplier to submit GA drawing for approval before commencing fabrication work in the event of placement of order

1.27) Milk Transfer pump to Milk Past. (1W+1 Cold Standby)

Capacity : As per BOQ

Qty : As per BOQ

Head : Suitable

Functional requirements: The pumps shall be used for transfer of milk from dump tanks to raw milk silos through milk chillers.
General Design: The pump shall be sanitary design and centrifugal mono block construction.

Finish: All stainless-steel surfaces shall be polished to 150 grits.

Scope of Supply:

The Pump: It shall be made from stainless steel conforming to AISI 316.

The Drive: The pump shall be provided with flanged motor with hygienic sealing arrangement. The motor shall be squirrel cage TEFC with IP55 protection suitable for 415 V 50 HZ AC supply and IE-3 standard. The pump and drive shall be integrated together. The pump shaft end for fixing the impeller shall be of stainless steel.

Accessories:

Inlet/Outlet: Stainless steel (AISI 316/ AISI 304) inlet and outlet shall end in stainless steel complete union. The inlet shall be 230 mm above the finished floor level.

Motor Shroud: The motor part of the pump shall be stainless steel shrouded. The shroud shall be easily dismantlable. It shall have provisions for air circulation and entry of electric cable.

Legs: The pump with drive shall be supported on legs with stainless steel ball feet. The ball feet shall have provision for height adjustment of 50mm.

1.28) Inter Silo cum Dispatch Pump

Capacity : As per BOQ

Qty : As per BOQ

All other specifications shall be same as item no: 1.14

1.29) CIP Return Pump for Raw Milk Silo

Capacity : As per BOQ

Qty : As per BOQ

Type : Self priming, centrifugal

All other specifications same as Item no. 1.14

1.30) Flow Plates of Product & CIP for Raw Milk Silos

The flow plate shall be constructed on SS square box pipe and suitable thickness SS plate.

The flow shall have following features:

1. Incoming port for all the inlet line

2. Outgoing port for all the milk/product outlet line
3. Manual Butterfly valves at all inlet and outlet port
4. Soft water line for flushing
5. CIP forward line
6. CIP return line with pumping as per logic
7. Spare ports for future expansion
8. Solid and flexible pieces with male union for connections
9. SS Tray for collection of products while making/breaking the contact

1.31) SS Pipes, Valves & Fitting for Raw Milk Reception Section

Qty : 1 Lot

Sizes : As required

Type : TIG welded; annealed and de-scaled tubes shall be manufactured as per the standard ASTM-A270.

Material : AISI 304 / AISI 316 as per requirement

Finish : Outer surface of the tubes shall be with dairy finish and inner surface should be pickled as per dairy standard

Thickness : The average wall thickness of tubes should be 1.6 mm up to 76.2 mm OD and 2.0 mm for diameters above 76.2 mm OD.

SS 304 Fittings

Type : SMS or quick opening tri-clover clamp type.

Thickness : Thickness of fitting made from tube will not be less than 1.6 mm up to 76.2 mm dia. And will not be less than 2.0 mm for above 76.2 mm dia.

Unions : Will be complete with liner, male nut, and gasket. Liner made of male parts will be suitable for expansion joints.

Pipe clamps : Will be quick opening type

Supports required for pipes:

Size : Square sections as required
Type : Supported from walls, ceilings, and floors
Material : AISI 304
Qty : 1 Lot

b) Non-Return Valve: The non-return valve shall be of sanitary design and all liquid contacting parts shall confirm to AISI 304. The valve sealing gasket shall be EPDM / Nitrile rubber material suitable for hot water sterilization temperature of 100 Deg. Celsius and hot acid and lye solution of 2% concentration at 85 Deg. Celsius. The non-return valve shall be with plain ends shall be suitable for direct welding on the pipes.

c) Unions: All the parts unless otherwise specified shall be made out of investment casting using AISI 304 material The union shall be complete with liner, male part, nut and sealing ring (neoprene food grade rubber gasket). The liner and male parts should be suitable for expansion joints. All the inside as well as outside surface of the union shall be with dairy finish.

d) Bend, Tee, Elbow: These fittings shall be made out of AISI 304 unless otherwise specified, process tube, TIG welded, annealed, de-scaled having outer surface mirror polished and inside pickled, manufactured as per ASTM A270. The thickness of the fittings made from the tube section should not be less than 1.6 mm up to 76 mm dia. and should not be less than 2.0 mm for above 76 mm dia. The wall thickness at any point shall not vary more than 12.5% over and under from the average wall thickness specified.
Bends and elbows shall be free from wrinkles. Tee shall have uniform flaring on the branch connection. The ovality on the open ends shall be within the permissible limit specified in the ASTM A270.

Manual Utility Valves

Capacity : Suitable

Qty : 1 Lot

Type : Non- Sanitary

Make : As per approved make list

Service : Utility lines.

Working Pressure: 5.0 bar (g)

Design Pressure :8.0 bar (g)

Working Temp. :1.5°C to 100°C

Class : Non-IBR

Pressure Rating :150 #

Body :CI/Die cast Aluminium

Wetted Parts : CI/ Die cast aluminium

Body Liner/Seat : Nitrile rubber /AISI304

End Connections : Valve shall be sandwich between GI flanges or weldable end as required

Test Pressure :15 bar (g).

Actuated Utility Valves

Capacity : Suitable

Qty : 1 Lot

Actuator : SOV (24V DC operated)

Feedback : On/off (separate) through proximity/limit switches or as per OEM design.

2.0) Milk & Cream Processing & Storage

2.01) Milk Pasteurizer with all standard accessories. Fully automatic with all instruments and pneumatic valves for remote operation through central control room.

Milk pasteurizer, complete module shall be required for pasteurization of raw chilled milk up to 80 deg. C. max. Cream chilling section or separate cream chiller with chilling facility from incoming milk shall be provided to cool the outgoing cream to around 8–12 deg. C.

The brief description of milk pasteurizer shall be as below:

Type : Plate Heat Exchanger

Capacity : As per BOQ

Qty : As per BOQ

Material : SS 316, 0.5 mm thick plates with clip ON gaskets. The gaskets for Hot water section shall be of EPDM and of other sections in pasteurizer shall be NBR clip on type.

Frame : Free standing SS-304 cladded carbon steel frame on SS – 304 ball feet

Finish : 150 grits

Milk in/out temp. : Inlet 4 to 5 Deg. C, final outlet 4 Deg. C

Services : Chilled water at + 2 0 C (min)& Steam at 3.5 Kg/cm2 pressure

Milk to CW ratio : 1:2 (max)

Hot water Ratio : 1:3 (max)

Regeneration Efficiency: 93% (min) on whole milk considering cream cooling through incoming raw milk

Temperature program: 4 – 80 – 4 Deg. C with take-off temp.

SS Feed pump

Capacity : As per the capacity of the pasteurizer and CIP requirement

Type : Centrifugal

The specifications shall be the same as per item no: 1.09 of suitable capacity.

Note: The pump shall be VFD driven hence the motor shall be de-rated accordingly and insulation class to be selected accordingly.

Flow Controller**,** separator and homogenizer as per OEM

The milk pasteurizer will have set of the following items:

Balance tank:
1. CIP spray ball
2. Half Openable cover
3. Nozzles for incoming milk
4. Nozzle for outgoing milk
5. Nozzle for soft water inlet
6. Ball feet with SS round plate at bottom
7. Instruments & valves –
a. Incoming milk butterfly valve with open/close feedback
b. Low- & high-level switch
c. Level Transmitted with local as well as HMI display
d. Emergency soft water valve with open/close feedback
e. 3-way pneumatic seat valve with open/close feedback at the outlet of balance tank for draining of the tank in case of emergency

Capacity : Suitable
Material : AISI 304.
Finish : 150 grits.

Note : The Supplier shall ensure that in case of flow diversion or power failure, the milk does not overflow from the balance tank.

Type : Flowmeter based flow controller with regulating feed pump frequency for smooth flow of milk to the pasteurizer

Booster Pump

Capacity : As per capacity of the pasteurizer and CIP requirement

Type : Centrifugal.

All other specifications same as Item no. 1.05

Holding Tube & Hydro cyclone

Type : Skid top mounted design

Holding time : 20 Sec.

Material : SS – 304

Accessories : Junction box on the pasteurizer shall be SS construction only. The emergency switches and isolators shall be in polymer construction

Hydro Cyclone : The hydro cyclone shall be SS 304 construction and shall have two nos. of pneumatic drain valves for ensuring zero pressure drop during discharge

Instruments:

Following, but not limited to instruments and pneumatic valves are required for pasteurizer.

1. Pneumatic butterfly valve for milk inlet line (with open & close feedback)
2. Pneumatic butterfly valve for soft water make up line (with open & close feedback)
3. Pneumatic butterfly valve for CIP inlet line (with open & close feedback)
4. 3-way Pneumatic seat valve (with open & close feedback) at balance tank outlet
5. 3 Way Pneumatic seat type diversion valves for hot and cold diversion of the milk (with open & close feedback) – 2 nos.
6. Pressure transmitter at inlet of regeneration section, heating section and chilling section
7. Level switches and level transmitter for balance tank
8. Magnetic Flow meter for milk inlet line
9. VFD for Milk forward pump
10. Temp transmitters at all inlet and outlet port of milk, hot water as well as chilled water
11. Back pressure valve with pneumatic pressure adjustment

Note: The pasteurizer operation shall be controlled from main control room so all the above instruments shall be pre-wired in one junction box

2.02) Tri-purpose Cream separator with all standard accessories & Hydro flow system for separator

Capacity : As per BOQ

Qty : As per BOQ

Type : Soft Stream system/bottom feed airtight separator with self-cleaning type disc bowl, automatic, periodic discharge of solids. Hydraulic control of the sliding piston.

Material : AISI 304

Drive : Integrally mounted, 3 phase 415 V, 50 Hz. electrical motor direct driven (motor mounted directly on vertical shaft)

Shrouding : Complete body and motor shall be shrouded in SS304.

Accessories:
1. Instruments (As per OEM), controls and fittings,
2. Control panel with VFD
3. constant water pressure unit (hydro flow with 1W+1S pump)
4. sludge discharge funnel (to be drained)
5. Silencer cum sludge collection tank with level switches
6. Sludge transfer pump

2.03) Milk Homogenizer with All standard Accessories and hydraulic pressure regulating mechanism with suction & Discharge dampener, Suction pressure transmitter, PLC with OP, All safety instrument, and controls

Capacity : As per BOQ

Qty : As per BOQ

Type : The Homogenizer shall be of the multi-piston type

Material : All parts in contact with the product are made of stainless steel (SS 316), Frame in CS with SS 304 cladding, the Compression block shall be made of a special high-strength stainless steel alloy and the pistons of ceramic material.

Finish : 2B finish

Drive : 415 V 50 Hz Electric motor

Working Pressure: The homogenizer is required to attend creaming index of less than 10 as per BIS/international recommended testing method. The pressure shall be adjusted in two stages and the pressure adjustment shall be automatic through hydro pneumatic system and to have facility to adjust from central control room through the main PLC. New generation homogenization valves to be selected for highest possible energy efficiency.

Accessories: Two stage Homogenizing arrangement with two homogenizing valves, pressure gauges with pressure switches for remote indication and control from the main PLC for both the stages. Provision for CIP and all other standard safety systems, in built strainers, pressure transmitting sensors to record in central control room, flow dampener in suction and discharge line, bypass between suction and delivery of the homogenizer for preventing damage in case of accidental failure of any valves of discharge line etc. If any buffer tank or pump required for smooth operation of homogenizer, it shall be considered in the scope of supply.

Water conservation: The jacket cooling water will be re-circulated through a buffer tank after chilling

Lubrication: The Homogenizer shall be provided with a water cooling/ lubrication system with flow switch for the pistons, safety device, as well as local pressure gauge.

PLC : All the control of homogenizer shall be done through dedicated PLC and touch screen OP. All the control shall be done either from the central control room or from locally through OP.

Instrument:
Following instruments and valves to be considered for automatic operation of homogenizer
1. Suction pressure transmitter
2. 3-way bypass valve in suction as well as discharge
3. NRV for safety
4. Oil flow switch
5. Oil level switch
6. Seal water make up tank (size as per OEM) with low- & high-level switch
7. THE for-cooling seal water
8. Water flow switch
9. Homogenizer rpm meter (separate for actual speed measurement)
10. Filter in water circulation system to trap oil

Note : The homogenizer should run uninterrupted during the production and CIP while separator goes in partial/full discharge.
If required, a balance tank with LT, level switch, transfer pump and its logic shall be considered in the scope of supply.

2.04) Seal Cooling system for homogenizer with tank, Chiller, and circulation pump

Capacity : As per BOQ

Qty : As per BOQ

The system shall comprise of THE, Tank (insulated), filter to trap oil & Pump for seal cooling of homogenizer. The capacity to be selected as per design requirement.

2.05) Manual Hoist with I beam for separator bowl lifting

Capacity : As per BOQ

Qty : As per BOQ

Note: The I beam section of suitable size to be considered in the scope of supply

2.06) Pasteurizer Milk Storage Tank

Capacity : As per BOQ

Qty : As per BOQ

All specifications shall be same as Item No. 1.24

2.07) CIP return pump for Past. Milk Storage tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Centrifugal, Self-priming

All other specifications are same as per item no: 1.14

2.08) Milk Transfer Pump to HMST Line -1

Duty : To transfer the past. milk to HMST Line - 1

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as that of item no 1.14

Note: Suitable arrangement to be done for cooling of motor running with VFD to avoid over heating while running on low speed. Use special motor for VFD operated pumps.

2.09) Milk Transfer Pump to HMST Line -2

Duty : To transfer the past. milk to HMST Line – 2

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as that of item no 1.14

Note: Suitable arrangement to be done for cooling of motor running with VFD to avoid over heating while running on low speed. Use special motor for VFD operated pumps.

2.10) Milk Transfer to Curd/Lassi/Paneer Section

Duty : To transfer the past. milk to Curd/ BM Section/ Paneer Section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as that of item no 1.14

2.11) Inter Silo cum Dispatch cum re pasteurization Pump for Past Milk with VFD

Duty : To transfer the past. milk to Inter Silo cum Dispatch cum re pasteurization Pump for Past Milk with VFD

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as that of item no 1.14

2.12) Raw/Past Milk Dispatch Chiller

Capacity : As per BOQ

Qty: : As per BOQ

Duty : To chill the past. Milk from PMST to dispatch up to 3 Deg. C

All other specifications are same as per item no: 1.15

2.13) Flow Plate of Product & CIP for Past. Milk Silo

Capacity : As per BOQ

Qty : As per BOQ

All other specifications are same as per item no: 1.31

2.14) SS Pipes, valves & Fittings for complete section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as per item no: 1.32

2.15) Raw Cream Storage tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Insulated (50 mm thick PUF), cladded, vertical cylindrical tank.

Material : a) Inner shell - AISI 304 2 & 2.5-mm thick SS
b) Outer shell – AISI 304 2.0 mm

Finish : 2B finish

Accessories & Ports: a. Air vent,
b. Inlet/outlet,
c. CIP spray ball,
d. Nozzle for high and low-level sensors,
e. Nozzle for Level transmitter,
f. Nozzle for temperature sensor,
g. Manhole,
h. Lifting lugs
i. Common platform with railing & toe guard
j. Other standard accessories.

Instruments:

i. Level Transmitter,
ii. Low- & High-Level switches
iii. Temp. Transmitter

Note:

1. Supplier shall submit GA drawing for approval to the purchaser for tank prior to fabrication work in the event of placement of order.

2. Stage inspection to be offered for tanks for welding, insulation, and final inspection before dispatch

2.16) Raw Cream transfer pump to cream pasteurizer - 3 HP

Capacity : As per BOQ

Qty : As per BOQ

Duty : To transfer raw cream to cream past. balance tank

All other specifications shall be same as per item no 1.14

2.17) Cream pasteurizer with all standard accessories, fully automatic with all instruments & valves for remote operation through central control room

Capacity : As per BOQ

Qty : As per BOQ

Type : Plate Heat Exchanger

Material : All Plates shall be of AISI 316,0.5mm thick

Nozzles : AISI 304

Duty : 8 - 77.7 - 90 - 20 - 8

Gasket : `SNAP-ON' (clip-on) type of Nitrile rubber

Services : Chilled water at 2° C. Pressure drop less than 1kg/sq.cm

Reg. efficiency: 85% minimum

The Pasteurizer shall be complete with Feed pump with VFD, flow diversion valve, instruments, and SS skid etc.

Following, but not limited to instruments and valves for pasteurizer to be considered;
1. Pneumatic butterfly valve for milk inlet line (with open & close feedback)
2. Pneumatic butterfly valve for soft water make up line (with open & close feedback)
3. Pneumatic butterfly valve for CIP inlet line (with open & close feedback)
4. Pneumatic butterfly valve for balance tank CIP (with open & close feedback)
5. 3 Way Pneumatic seat type diversion valves for hot and cold diversion of the cream (with open & close feedback)
6. Pressure transmitter at inlet of regeneration section, heating section and chilling section
7. Level switches and level transmitter for balance tank
8. Magnetic Flow meter for milk inlet line
9. VFD for Milk transfer pump
10. Temp transmitter at all inlet and outlet port of milk, hot water as well as chilled water with head mounted local display.
11. Back pressure valve with pneumatic pressure adjustment.

Note: The pasteurizer operation shall be controlled from main control room so all the above instruments shall be pre-wired in one junction box.

2.18) Pasteurized Cream Storage Tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Insulated, cladded and dimple jacketed vertical cylindrical tank.

Material : a) Inner shell - AISI 304 2.5 mm & 3.0 mm or as per OEM design
b) Intermediate - AISI 304 2.5 mm minimum or as per OEM design
c) Outer Cladding - AISI 304 2 mm or as per OEM with performance guarantee

Finish : 2B finish

Insulation : PUF insulation of suitable thickness to ensure 1 Deg. C temp rise in 24 hours.

Accessories & Ports:

a. Inlet/outlet,
b. CIP spray ball,
c. Nozzle for high and low-level sensors,
d. Nozzle for Level transmitter,
e. Nozzle for temperature sensor,
f. Manhole,
g. Agitator
h. Jacket inlet and outlet ports
i. Lifting lugs
j. Common platform with railing & toe guard
k. Other standard accessories.

Instruments:

i. Level Transmitter,
ii. Low- & High-Level switches
iii. Temp. transmitter for cream
iv. Temp. Transmitter for jacket
v. Chilled water temp control valve for jacket

Note:

1. Supplier shall submit GA drawing for approval to the purchaser for tank prior to fabrication work in the event of placement of order.
2. Stage inspection to be offered for tanks for welding, insulation, and final inspection before dispatch

2.19) Cream Transfer pump to Cream Dispatch/Raw Milk Silo/Milk Past balance Tank:

Capacity : As per BOQ

Qty : As per BOQ

Type : Positive, Lobe type

Head : Suitable

MOC : All the product contact parts shall be SS 304

All other specifications shall be as per item no: 1.14

2.20) CIP return pump for raw & past cream storage tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Centrifugal/ self-priming

All other specifications same as Item no. 1.14

2.21) Flow Plate of Product & CIP for raw & past cream storage tanks

Capacity : As per BOQ

Qty : As per BOQ

All other specifications are same as per item no: 1.30

2.22) SS Pipes, valves & Fittings for complete section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as per item no: 1.31

2.23) Horizontal milk Storage Tank for Pouch milk

Qty : As per BOQ

Capacity : As per BOQ

Type : Horizontal Milk Storage tank

Duty : To receive and store past. milk from PMST and transfer it to pouch packing machine

MOC : SS 304, Thickness 2.5 mm shell& 3 mm Cone, cladding 2 mm or as per OEM with guarantee

Insulation : Suitable thickness PUF insulation to ensure 1 Deg. C temp rise in 24 hours

Agitator : Back Side mounted with gearbox & SS shroud

Instruments:
1. Low & High-Level Switch
2. Temp Transmitter with remote data transfer
3. Level Transmitter with local display + remote data transfer

Accessories : Light glass, sight glass, Agitator SS shroud, lifting lug, SS platform & railing as per requirement.

Ports : Milk in and Milk out ports to be decided by the Supplier either single or double (for milk filling and milk emptying)

2.24) PHE for rechilling of pouch packing milk in milk up line

Capacity : As per BOQ

Qty : As per BOQ

Duty : To chill the Past. Milk from PMST to HMST line up to 3 Deg. C

All other specifications are same as per item no 1.15

2.25) Inline filter (pipe in pipe) for HMST outgoing line

Capacity : As per BOQ

Qty : As per BOQ

All specification shall be as per 1.13

2.26) Flow plate of product &CIP for HMST section

Capacity : As per BOQ

Qty : As per BOQ

All other specifications are same as per item no: 1.30

2.27) CIP return pump for HMST section

Capacity : As per BOQ

Qty : As per BOQ

Type : Centrifugal, Self-priming

All other specifications shall be same as per item no 1.14

2.28) SS pipes, valves &Fittings for complete section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as per item no: 1.31

3.0) Curd & Lassi Processing

3.01) SMST for curd/Paneer milk storage

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical, Insulated

MOC : SS 304 (inner shell & outer cladding) thickness -2.5 & 3 mm for inner shell & 2 mm cladding

Insulation : PUF insulation of suitable thickness to ensure temp rise of 1 Deg. C in 24 hours

Accessories : Sight glass, light glass, agitator (with SS shroud), SS railing, SS ladder, SS platform (as required), sampling cock, lifting lug, nozzles for instruments etc.

Instruments:
a. Low &High-Level Switches
b. Level transmitter with local and remote display
c. Temp transmitter with remote display

3.02) Powder Blending System with Table mounted hopper and shear & booster pump with accessories

Capacity : As per BOQ
Qty : As per BOQ

The System shall be skid mounted with following major components.

1. Liquid Ring Pump
2. Shear Blender (only this will be allowed)
3. Powder Induction Funnel
4. Powder Control Valve
5. Liquid Control Valve
6. Internal Piping & Fitting
7. S. S. Skid for assembling all the above Parts

Technical Details of individual components are as follows.

Liquid Ring Pump.

Duty : It will draw the base milk out of the batch tank and will transfer it through a short pipe to the powder & will be of Sanitary Type.

Model No : Supplier to specify

kW/HP : Supplier to specify

Type : Sanitary, Monoblock, Self-Priming Centrifugal

MOC : SS 304

Accessories : Suitable rating motor with SS shroud & Base frame

Duty : To blend powder coming from funnel and mix with liquid

Type : Sanitary with specially designed impeller to create high turbulence mixing zone at the suction

MOC : SS 304

Model : Supplier to specify

kW/HP : Supplier to specify

Accessories : SS sound absorbing shroud, Motor, Base frame etc.

Powder Induction Funnel.

Duty : To Dump Powder in the shear pump
Capacity : 50 Kg
MOC : SS 304
Thickness : 2.5 mm

Powder Control Valve

Duty : To regulate powder flow in the suction of Shear Pump

Type : Sanitary Manual Valve

MOC : SS 304

Size : 63 mm

Liquid Control Valve

Duty : To regulate Liquid flow in the suction of water ring Pump

Type : Sanitary Manual Valve

MOC : SS 304

Size : 51 mm

Internal Piping & Fitting

SMS standard fitting to connect water ring pump, shear pump, funnel etc. All SS 304 with suitable size.

S. S. Skid for assembling all the above Parts

All above components shall be mounted on SS 304 skid of suitable size.

3.03) PHE with Circulation for SMST

Capacity : As per BOQ

Qty : As per BOQ

Duty : To make up temperature of milk after powder addition

Temp duty : 15 Deg. C to 4 Deg. C through circulation

All other specifications are same as per item no: 1.15

3.04) Milk Transfer Pump to Curd Pasteurizer

Capacity : As per BOQ

Qty : As per BOQ

All other specifications shall be as per item no: 1.14

Note : Suitable arrangement to be done for cooling of motor running with VFD to avoid over heating while running on low speed. Use special motor for VFD operated pumps.

3.05) Curd Milk Pasteurizer

Capacity : As per BOQ

Qty : As per BOQ

Temp. : 4 – 65-95 – 45 or 4 deg. C

Gaskets : NBR, Clip on type

Test Pressure: 6 bar

Design Pressure: 8 bar

Holding time: 600 seconds

Accessories:
1. Balance tank – 200 L with float and level switches, CIP spray ball etc.
2. Interconnecting piping

Instruments, valves & Controls:
1. Balance tank level transmitter
2. Balance tank level switch
3. Balance tank milk inlet pneumatic butterfly valve type control valve
4. Soft water inlet pneumatic butterfly valve (with on and off feedback)
5. CIP inlet butterfly valve (with on and off feedback)
6. Automatic Flow diversion seat valve ((with on and off feedback)
7. Magnetic flow meter in forward line
8. VFD for forward pump
9. Pressure transmitter at inlet of regeneration section, heating section and holding section
10. Temp transmitter at all milk & HW in and out ports
11. Operation through Central control room
12. Back pressure valve (pneumatic + spring operated)
13. Any other instrument/valves required for automatic operation

Note: Pasteurizer shall have ports for homogenizer connection
Holding Tubes minimum 10 minutes holding

Capacity : 10 Min.
Qty : 1 No.

Construction : Spiral circular with SS 304 outer cladding.

Insulation : Hot insulation

Accessories : inlet, outlet with thermos well

Special Note: Supplier to submit GA drawing & P & ID for approval to the purchaser before commencing the fabrication work in the event of placement of order.

3.06) Curd Milk Homogenizer

Capacity : As per BOQ

Qty : As per BOQ

Duty : to homogenize the curd milk during the past. process

Material : All parts in contact with the product are made of stainless steel (SS 316), Frame in CS with SS 304 cladding, the Compression block shall be made of a special high-strength stainless steel alloy and the pistons of ceramic material.

Finish : 150 Grit or mirror finish

Drive : 415 V 50 Hz Electric motor

Working Pressure: The homogenizer is required to attend creaming index of less than 10 as per the prevailing international standard used by co-operative dairies across India. The pressure shall be adjusted in two stages (manual adjustment) The Supplier is free to select the pressure range to suit the application. Homogenization valve shall be such that the complete machine is highly energy efficient.

Accessories: Two stage Homogenizing arrangement with two homogenizing valves, pressure gauges with pressure switches for safety. Provision for CIP and all other standard safety systems, in built strainers, suction pressure PT, flow dampener in suction and discharge line, bypass between suction and delivery of the homogenizer for preventing damage in case of accidental failure of any valves of discharge line etc.

Water conservation: The jacket cooling water will be re-circulated through a buffer tank after chilling

Lubrication: The Homogenizer shall be provided with a water cooling / lubrication system with flow switch for the pistons, safety device, as well as local pressure gauge.

Instrument: Following instruments and valves to be considered for automatic operation of homogenizer

1. Suction pressure transmitter
2. 3-way bypass valve in suction as well as discharge

3. NRV for safety
4. Oil flow switch
5. Oil level switch

Capacity : As per BOQ

Qty : As per BOQ

Duty : to homogenize the curd milk during the past. process

Material : All parts in contact with the product are made of stainless steel (SS 316),
Frame in CS with SS 304 cladding, the Compression block shall be made of a special high-strength stainless steel alloy and the pistons of ceramic material.

Finish : 150 Grit or mirror finish

Drive : 415 V 50 Hz Electric motor

Working Pressure: The homogenizer is required to attend creaming index of less than 10 as per the prevailing international standard used by co-operative dairies across india. The pressure shall be adjusted in two stages (manual adjustment) The Supplier is free to select the pressure range to suit the application. Homogenization valve shall be such that the complete machine is highly energy efficient.

Accessories: Two stage Homogenizing arrangement with two homogenizing valves, pressure gauges with pressure switches for safety. Provision for CIP and all other standard safety systems, in built strainers, suction pressure PT, flow dampener in suction and discharge line, bypass between suction and delivery of the homogenizer for preventing damage in case of accidental failure of any valves of discharge line etc.

Water conservation: The jacket cooling water will be re-circulated through a buffer tank after chilling

Lubrication: The Homogenizer shall be provided with a water cooling / lubrication system with flow switch for the pistons, safety device, as well as local pressure gauge.

Instrument: Following instruments and valves to be considered for automatic operation of homogenizer
1. Suction pressure transmitter
2. 3-way bypass valve in suction as well as discharge
3. NRV for safety
4. Oil flow switch
5. Oil level switch

3.07) Past. Curd Milk Storage tank

Capacity : As per BOQ

Qty : As per BOQ

Duty : To store the chilled curd milk from the curd milk pasteurizer for further processing

MOC : SS 304 with 2- & 2.5-mm thickness of inner shell and top, 2mm for outer cladding.

Insulation : PUF 75 mm (minimum) thickness.

Accessories : Sight & Light glass, lifting lugs, SS ladder, SS railing, manhole (TOP), sampling cock, nozzles for various instruments

Instruments:

1. Level switches (Low & High)
2. Level Transmitter with local as well as remote display on central control room
3. Temperature transmitter with local as well as remote display

Special Note: Supplier to submit GA drawing for approval to the purchaser before commencing the fabrication work in the event of placement of order. DVS culture shall be added to this tank (cold culturing)

3.08) Milk Transfer Pump to Curd Milk Heater

Capacity : As per BOQ

Qty : As per BOQ

All other specifications shall be as per item no: 1.14

Note: Suitable arrangement to be done for cooling of motor running with VFD to avoid over heating while running on low speed. Use special motor for VFD operated pumps.

3.09) CIP return Pump for SMST tanks & Past. Curd Milk Storage Tanks

Capacity : As per BOQ

Qty : As per BOQ

Type : Centrifugal, Self-priming

All other specifications shall be same as per item no 1.14

3.10) Curd Milk heater (4-45 Deg° C) with all standard Accessories, instruments, pneumatic valves, and automatic operation from the control room

Capacity : As per BOQ

Qty : As per BOQ

Type : PHE type heater

Temp program: 4 -45 Deg. C

Gaskets : NBR, Clip on type

Test Pressure: 6 bar

Design Pressure: 8 bar

Accessories:
1. Balance tank – 200 L with float and level switches, CIP spray ball etc.
2. Interconnecting piping

Instruments, valves & Controls:
1. Balance tank level switch
2. Soft water inlet pneumatic butterfly valve (with on and off feedback)
3. CIP inlet butterfly valve (with on and off feedback)
4. Automatic Flow diversion seat valve ((with on and off feedback)
5. Magnetic flow meter in forward line
6. VFD for forward pump
7. Temp transmitter at all milk & HW in and out ports
8. Any other instrument/valves required for automatic operation

3.11) Curd Inoculation cum Balance tank

Capacity : As per BOQ

Qty: As per BOQ

Type : Vertical, Insulated

Duty : for buffer between Termizer and packing machine

MOC : SS 304 2 mm thick inner shell and 2.0 mm thick outer cladding

Insulation : Hot insulation of suitable thickness

Accessories : Sight & Light glass, lifting lugs, SS ladder, SS railing, manhole (TOP), sampling cock, nozzles for various instruments

Instruments:
1. Level switches (Low & High)
2. Level Transmitter with local as well as remote display on central control room

3. Temperature transmitter with remote connectivity

Special Note: Supplier to submit GA drawing for approval to the purchaser before commencing the fabrication work in the event of placement of order. CIP return Pump should be considered in the scope of Supplier's

3.12) Curd Setting tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated tank

Duty : For curd setting required for lassi / Yoghurt

MOC : SS 304 2 mm thick with 2.0 mm thick SS 304 outer

Instrument : High & Low-level switches Level transmitter with local display & data transmission Temp transmitter

Insulation : Hot insulation of 50 mm (minimum) thickness

Accessories : Sight & Light glass, lifting lugs, SS ladder, SS railing, manhole (TOP), sampling cock, nozzles for various instruments

3.13) Sugar mixing system

Capacity : As per BOQ

Qty : As per BOQ

Duty : To mix sugar with cultured milk for lassi production

Note: sugar blender shall be used for mixing of sugar into curd mass. Therefore, separate sugar syrup preparation is not required.

All other specifications are same as per item no: 3.02

3.14) Mixing tank for sugar, flavor & fruits

Capacity : As per BOQ

Qty : As per BOQ

Duty : To mix sugar, flavour & fruits for Lassi

MOC : SS 304 with 2- & 2.5-mm thickness of inner shell and top, 2mm for outer cladding.

Insulation : PUF + EPS+ EPS+ ALU FOIL: 15 + 50+50+0.07 mm insulation or
Hot insulation of 100mm thickness

Accessories : Sight & Light glass, lifting lugs, SS ladder, SS railing, manhole (TOP), sampling cock, nozzles for various instruments

Instruments :
1. Level switches (Low & High)
2. Level Transmitter with local as well as remote display on central control room
3. Temperature transmitter with remote data transmission

Special Note: Supplier to submit GA drawing for approval to the purchaser before commencing the fabrication work in the event of placement of order.

3.15) Circulation pump with chiller

Capacity : As per BOQ

Qty : As per BOQ

Type : Centrifugal with specially designed impeller for shearing of lassi with sugar and fruit pieces

All other specifications shall be as per item no: 1.14

Tubular Heat Exchanger

Capacity : As per BOQ

Qty : As per BOQ

Type : Tubular shell & Tube type Heat exchanger

MOC : All product contact parts in SS 304

Duty : To chill the lassi up to 6 Deg. C through circulation

Accessories: All standard Accessories/instruments for automatic operation through control room

3.16) Lassi transfer pump to packing machine

Capacity : As per BOQ

Qty : As per BOQ

Type : Progressive cavity type (PD pump) suitable to handle viscous liquid with 7000 Cp viscosity, sanatory design

MOC : All product contact parts SS 304

4.0) Milk, Curd & Lassi Packing

4.01) Crate washer for Curd

Capacity : As per BOQ

Qty : As per BOQ

Type : Detergent & steam-based crate washer with straight through conveyor

MOC : Base frame, support, structure shall be of SS 304 construction

MOC of chain : SS 304

The crate washer shall have followed sequence of operation;

1. Pre rinse section:

2. Detergent wash

3. Hot water washing

4. Final rinse

5. Air Drying

6. Crate turning device

7. Final discharge

8. Complete technical specification

9. GA drawing of the crate washer

10. Power consumption

11. Hot water consumption

Media of heating: Hot Water at 3.5 bar pressure at 95-100 Deg. C temp Bidder to consider SS control panel with starter for all the pumps and Temp. controller for hot water.

Note: The above equipment is to considered as "Free Issue from the purchaser". However, erection and commissioning including product and utility piping shall be considered in the scope of tender

4.02) Manual two-tier crate conveying system for empty & filled crate up to incubation room and cold store

Capacity : As per BOQ

Qty : As per BOQ

Size : Suitable for 12 Litres crates

Mode of operation: Manual mode but motorized conveyors
1. Empty crate distribution to all machines as per layout
2. Filled crate transfer to milk cold store
3. Crate counter for filled crate

MOC : All support and structure - SS 304 square box pipes of suitable size.

Belt: 3mm thk UHMWPE tape (Ultr2 High Molecular weight polyethylene) and Polyacetal chain with side SS rail guiding

4.03) Detergent based Crate washer with pre-cleaning, air drying attachment and crate twister

Capacity : As per BOQ

Qty : As per BOQ

Type : Detergent & steam-based crate washer with straight through conveyor

MOC : Base frame, support, structure shall be of SS 304 construction

MOC of chain : SS 304

The crate washer shall have followed sequence of operation
1. Pre rinse section:

2. Detergent wash

3. Hot water washing

4. Final rinse

5. Air Drying

6. Crate turning device

7. Final discharge

8. Complete technical specification

9. GA drawing of the crate washer

10. Power consumption

11. Hot water consumption

Media of heating: Hot Water at 3.5 bar pressure at 95-100 Deg. C temp Bidder to consider SS control panel with starter for all the pumps and Temp. controller for hot water.

Note: The above equipment is to considered as "Free Issue from the purchaser". However, erection and commissioning including product and utility piping shall be considered in the scope of tender

4.04) Leakey Pouch cut open tank (500 L, SS 304 Insulated) with transfer pump and PHE type chiller with CIP facility

Capacity : As per BOQ

Qty : As per BOQ

Duty : To collect the cut open milk from packing machine

Type : Horizontal tank specially designed with cut open perforated screen

MOC : SS 304

Instrument : Level switches for automation operation of transfer pump

Note: Supplier shall submit GA drawing for approval to the purchaser for tank prior to fabrication work in the event of placement of order.

PHE type Chiller

Capacity : As per BOQ

Qty : As per BOQ

Duty : To chill the leaky pouch milk from 15 Deg. C to 4 Deg. C before transfer to rinse milk recovery tank

All other specifications are same as per item no 1.15

Transfer Pump

Capacity : As per BOQ

Qty : As per BOQ

Duty : To transfer cut open milk to rinse milk recovery tank

All other specifications are same as per item no 1.14

4.05) High Speed Packing Machines for Milk Packing

Capacity : As per BOQ S

Qty : As per BOQ

PRODUCT	Milk or any other free flowing liquid
MACHINE CONTROL	PLC controlled with servo mechanism & Touch screen Operating panel
FEEDING SYSTEM	Gravity Filler
DOSAGE	Up to 1000 ml.
ACCURACY	WEIGHT VARIATION: ± 0.2%. under ideal Working condition. BAG LENGTH VARIATION:± 1 mm.
SPEED (min)	5000 pouches / hour / head. (500 G) 10,000 pouches / hour / machine (500 G)
PACKING MATERIAL	Virgin Film: Any Impulse sealing material like co-ex LDPE 1) Film Width - 321 mm ± 2mm 2) Thickness: 42-47 micron 3) Maximum weight of film rolls 75 Kg (in built without external attachment) 4) Film Roll dia. – 300 mm. Core dia. 76 mm
TYPE OF SEAL	Vertical –Overlap Horizontal – Seal & Cut Impulse Type. Leakage rate: < 2000 Part Per Million.
SUPPLIES TO THE MACHINE	**A) Electrical** 1Power Supply: Supplier to specify. 2. Connected Load: Supplier to specify 3. Power Consumption (in kWh): Supplier to specify 4. Electrical connection cable size: Supplier to specify **B) Cooling Water**: Pressure- Supplier to Specify Flow Rate- Supplier to specify Temperature: Supplier to Specify **C) Utility for Actuation of Injection System:** Electromagnetic coil actuation system the movement of the same is regulated by

	electromechanical device with MMI display.
DESCRIPTION OF THE MACHINE BODY	The components, which form, fill seal the pouches/sachets are enclosed in a stainless-steel cabinet. All major items are of stainless steel or treated with Aluminium protected by a weatherproof paint. All parts in contact with the product are of AISI-304 stainless steel with smooth finish.
SPOOL BEARER ASSEMBLY	The Roll of heat sealable films are mounted in a compartment at the rear bottom of the machine. They are supported on the idler rollers in sliding drawers with bottom opening machine cabinet doors, which enables to charge the rolls quickly. The Film layers passes in each head via different idler rollers, film loosening takes place through positive film unwinding AC drive mechanism and moves in front of the ultra violet sterilization tube before it is engaged in the forming device. The specially designed former converts this layer in to a tube.
VERTICAL SEAL	The film is overlapped and sealed into a tube on each head by impulse heated elements known as vertical electrodes. The sealing jaws are water-cooled and are mechanically operated by link mechanism through the drive shaft. The formed film tube surrounds the injection or filling tube through which the products to be filled flows in the film tube.
INJECTION SYSTEM	The filling system is as follows: ▪ A constant level tank is mounted on top of the machine ▪ A filling tube leading down from the tank and inside tube of film ▪ A liquid injection electromagnetic coil is mounted on top of the injection tube ▪ A gate at the lower end of the injection tube opens when injection switch is turned ON. This allows the liquid to be packed in the surrounding formed film tube. The gate opens by electromagnetic coil actuation system of the piston in the injection cylinder assembly when injection switch is made ON.
FILM FEED	Rubber nip rollers below each vertical sealer control downward movement of the film tube. Vertical overlapped sealed film tube is pulled down by nip rollers coupled with clutch and brake unit through drive shaft. The length of the film tube pulled down is controlled by PLC.
HORIZONTAL SEALING AND CUTTING	The sealed tube then arrives at the bag making point. Here when the horizontal presses close on the film tube, the horizontal assembly mounted on one of the presses seals and cuts the horizontal portion of the film tube. The horizontal jaw simultaneously seals the upper horizontal sealed band of the lower filled pouch and the lower horizontal sealed band of the upper film tube. The other horizontal press on which there is only silicon back up rubber and a Teflon magazine is called a counter electrode.
COOLING	Both horizontal and vertical electrode holders should be water-cooled
CODING MECHANISM	a. Heat embossing coding device with9 characters b. TTO printer for each head

PHOTOCELL REGISTRATION SYSTEM	It should be working properly while photo mark film is used. Sensor make: P& F, OMRON, Banner
SPARES	Set of critical spares related to two years of operation. A) Manufacturer/Supplier's Guarantee certificate. B) Four copies of certificate of Insurance. C) Four copies of the list of all spares related to machine with its part number. D) Critical spare list along with model number, part number and make.
MANUALS	E) Four Copies of user Manual.

Salient Feature:

- Automation equipped with PLC & HMI
- Simple maintenance friendly construction
- Servo Motor Controlled Bag Pulling Mechanism
- Independent head operation allowing flexibility
- Hygienic machine design. MOC of product contact parts from stainless steel SS 304
- Servo driven impulse sealing mechanism
- Motorized mechanical filling system for consistent fill accuracy through programmer and ease of change over
- UV film sterilization system for packaging material in back as well as front side with door interlocking
- Motorized/manual web tracking system
- Jumbo reel trolley with hygienic enclosure
- End of film roll facility with interlock of machine to parking mode
- Motorized film reel unwinding control mechanism
- Heating element failure linked alarm generation
- Electrical system of respective head/ track housed in separator cabinet
- Maintenance friendly horizontal & vertical seal mechanism
- Lubrication free design of the machine
- Automatic homing of Horizontal jaw position at power on
- Independent balance tanks offering flexibility to handle different products simultaneously
- Vertical and horizontal jaw sealing temperature to be optimized through programmed PLC

Features required in high-speed Machine

- There shall be equal distribution of electrical load on all 3 phases to avoid any interruption during DG set operation
- Isolation switch is required for cut off of machine from mains
- LED light (8/10W) to be provided in place of PL tube light
- Machine body should be SS 304 construction. As well as all contact parts are of SS 304.
- Machine Operations should be electronically controlled with PLC
- Digital Setting Control for all Setting Timings

- Individual Head operation
- Positive unwinding for each Head
- Rooftop with SS.
- Provision to run different bag size.
- Separate Control for Seal voltage & timer for handling different film.
- Provision of Jaw close switch.
- Adjustable cooling time.
- Electrical control circuit shall be with 24 V DC.
- Bank of UV tube for Sterilization of film with interlock for stoppage
- SS Nozzle for CIP system
- Toughened Door glass
- SS Legs with height adjustment.
- No Milk No fill with indication and alarm.
- Front and back door safety interlocks.
- Solenoid valve control for jaw cooling water control with start/stop of machine.
- SS pipeline with suitable diameter for Jaw cooling. No water line in backside of machine.
- End of the roll detection system to be supported on insulated bush to prevent earth fault in PLC and other electronic parts
- Friction free forming tube shoulders to be provided to ensure minimum wear and tear of the forming tube
- Locking arrangement to be provided for maximum height of the injection rod
- Film roll stand to be provided with extra length to easily slide the new roll inside the machine
- Chequered plate stand to be provided in the space available between two films roll for maintenance purpose
- During CIP, the injection rod should be in full open position for 100% flow (i.e. 1 liter mode)
- CIP hose for each machine to be supplied
- TTO printer for each head each machine to be considered in the scope of supply

4.06) 5/6 Liters FFS packing machine

Capacity : As per BOQ

Qty : As per BOQ

Type : Single head machine

Capacity : 5000/6000 ml packing

All other specifications shall be same as item no 5.06

Film type : co-extruded LDPE with minimum 100-micron thickness

Accuracy : 0.2% on ideal working condition for milk
0.1% bag length variation for film

4.07) Curd FFS Packing Machine

Capacity : As per BOQ

Qty : As per BOQ

Duty : To pack the past. butter milk & curd

All other specifications are same as per item no: 4.05

4.08) Rotary Curd Cup Filling Machine with All standard Accessories, Outgoing conveyor & Inkjet Printer including change over parts for 200 & 400g & Filling nozzle for Lassi

Capacity : As per BOQ

Qty : As per BOQ

Packing Size : 200g & 400g cup

Packing dia. : As per existing Amul cup standard (80mm & 95 mm – to be confirmed before finalization of size)

Filling Accuracy: +/- 3 to 4 gram for both size

Type : Rotary

Dosing System: Piston filler

Other Specifications:

• Fully automatic, rotary indexing type machine for filling and sealing of pre-made stackable cups and tubs.

• Common machine for curd and lassi packing

• Multi station machine with provision for dispensing from stack, filling of liquids, lid placing from stack, sealing and discharge of plastic containers (cups/tubs) as detailed below.

• The machine is capable of handling different sizes of containers and or different type of lidding foils by using of change parts which part of the tender

• Machine frame shall be in stainless steel

• Machine housing shall be with hygienically smooth and easy to clean SS external surfaces.

• Aesthetically designed front guards with interlock safety.

• Completely enclosed drive elements for protection from dust.

• Easy accessibility to the machine elements for servicing.

• Machine base with height adjustable levelling elements.

• Quick Clamp devices for tool less changeover of size parts.

• The rotary table is indexed through a precision cam indexer designed with effective acceleration / deceleration to handle liquids without spillage, driven by an AC geared motor lubricated for life in IP54 enclosure and controlled by Digital frequency controller. This is placed in a zone effectively isolated from product contact.

• Pneumatic equipment like Solenoid Valves, Pressure Regulators, Pneumatic Cylinders and Vacuum generators to perform various function based on sequence.

• SS rotary table for easy cleaning and hygiene control suitably mounted on precision bearing housing assembly and it is rigidly connected to the CAM indexer by a shaft.

• Standard stations are Cup dispenser, lid place, lid seal, & Cup discharge

• Electrically interlock to ensure No cup – No fill – No lid place – NO seal

• Machine shall be PLC operated with touch screen OP

• Changeover parts for 400g pack size to be included in the scope of supply for both the machine (separate set for each machine)

For lassi packing, please consider separate nozzle due to high viscosity and select the filling mechanism accordingly to achieve the required filling accuracy

4.09) SS trolley for cup curd packing

Capacity : As per BOQ

Qty : As per BOQ

Type : Perforated SS trolley with selves for placement of cup to
incubation and then to blast room and finally in storage area This shall be a SS trolley with castor wheel mounted with perforated slaves for storage of packed cup transferring to incubation room. The trolley after curd get incubated shall be transferred to curd blast room so as to avoid manual handling to ensure firm shape of the curd and reduce separation.

Note: Supplier to submit GA drawing for approval before commencing fabrication work in the event of placement of order.

4.10) Curd Incubation Room with Electrical heating system

Capacity/Size : Suitable

Qty : As per BOQ

Temp. : 45 Deg. C

Heater : Electrical heater with temp. controller (continuous controller)

Duty : for incubation of curd to achieve the desired acidity in approx. 4 to 5 hours

Insulation : 60 MM 40 Kg/ M3 thick PUF 2 side PPGI sheet with even air flow

Accessories:
1. Temp indicating controller and Electrical heater switchgear in electrical panel
2. SS chequered plates for bottom in welded construction.
3. Manual sliding door for approach (Size: 2100 x 1500 mm) – 2 Nos
4. SS Railing for safety
5. Room Lights (LED type)

Note: Uniform temp. shall be ensuring in the inoculation room at all the corners and if, required circulation fans (industrial type) shall be installed. The incubation room shall be divided in to two part and PUF partition wall and 2 separate doors to be considered

4.11) Curd Blast room with insulation panel, Standalone freon based refrigeration system, 1 no's of manual sliding doors and other standard accessories. Product to be cooled from 45 Deg. C to 2 Deg. C in 2 hours

Capacity : As per BOQ
Qty : As per BOQ

Duty : 45 Deg. C to 10 Deg. C cooling

Insulation:
1. Cold insulation with 120 mm thick PPGI sheet with PUF of 40 Kg/m3 Density for wall
2. Cold insulation of Floor shall have vapor barrier of aluminium foil/PVC sheet. One layer of tar felt sealed duly with 80:20 bitumen as per prevailing IS code and two layers of insulation covered & sealed with tar felt.
3. Cold insulation of column (as per requirement)

Refrigeration : Standalone refrigeration system (Freon based)

Temp : To cool down curd cup from + 45 Deg. To + 10 Deg. C in 2 hours' time

Loading : 2 Ton/Hr.

Pull down time : 2 hours

Other Accessories:
1. Control panel with digital temp controller
2. Manual sliding door for approach (2100 x 1500 mm)
3. Hatch door for opening in cold store
4. SS railing for safety
5. SS chequered plate for flooring
6. Room Lights (LED type)

4.12) SS Pipes, valves & Fittings for complete section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as per item no: 1.32

5.0) Paneer Processing & Packing

5.01) Paneer milk Heater with all standard Accessories with regeneration section including all the instruments for automatic operation from the central control room (4-95-85 Deg C)

Capacity : As per BOQ

Qty : AS per BOQ

The module shall be used to heat the paneer milk with following temp profile.
Paneer milk heating: 4-95-85 Deg. C The pasteurization module shall have.

Balance tank:

Capacity : 200 L

MOC: SS 304

Type : cylindrical, free standing on ball feet

Accessories : Top cover, CIP spray ball, ball feet, various port for inlet/outlet and other instruments, water inlet etc

Feed Pump with VFD control

Type : Centrifugal

Fittings : Quick opening sanitary fittings

Material : AISI 316

Coupling : Mono-block

Mounting : Free standing with adjustable SS ball feet

Shaft sealing : Mechanical shaft seal

Gasket : Nitrile rubber

Shroud : AISI 304 with acoustic liner

Motor: : 415V, AC, 3 phase, 50 Hz. EFF-I (IE3) Squirrel cage induction Motor with TEFC/IP 55 Enclosure

Plate pack

Construction : required nos. of plate SS 316 with 0.5 mm thickness
Support structure SS 304 cladded with free standing

Type : Plate heat exchanger with suitable path to meet the temp requirement with heating, regeneration & cooling of whey and well water sections

Holding coil with 10 min. time

Type : Vertical, spiral

MOC : SS 304

Holding time : 600 Seconds

Insulation & Cladding: Hot insulation with SS 304 (2 mm) cladding

Accessories : Thermowell at inlet & outlet

Make : Fabricated

Booster pump

Type : centrifugal

Capacity : To match the capacity of heater

All specifications are same as that of feed pump

Hot Water generation THE with circulation pump

Type : Tubular Heat Exchanger

Capacity : As per requirement

Hot Water Pump : Centrifugal with High temp duty

Capacity : to match the process capacity

SS skid & interconnecting piping

The complete assembly of above items except Plate pack shall be mounted on the suitable thick square box pipe skid with base.

All the supports and inter-connecting piping for various sections of PHE shall be mounted on the skid.

Control panel shall be mounted on the vertical support of the skid.

Various instruments and controls

Following but not limited to instruments to be considered.

1. Incoming milk on off butterfly valve
2. Low- & High-Level Switches
3. Level transmitter
4. Flow meter in Feed pump forward line
5. TT at all milk in & out port
6. PT at inlet, intermediate (after holding tube) and discharge line of the pasteurizer
7. Back pressure valve (pneumatic)
8. Automatic Flow diversion valve with on/off feedback
9. Centralized PLC based control of complete heater operation for. a. Start
   b. Circulation on water
   c. Stabilization
   d. Sterilization
   e. Production
   f. CIP
   g. Controlled stop or stabilization
   h. Control valve for steam, tower water and chilled water control

5.02) Paneer Vat (insulated) with CIP & Dosing nozzle rod

Capacity: As per BOQ

Qty : As per BOQ

MOC : SS 304

The coagulation vat shall be built in the form of a horizontal semi cylindrical tank equipped with:

a. cleaning heads
b. Acid dosing heads
c. Insulation
d. A temperature sensor with digital display (Local)

The vat shall be kept at a suitable height on the SS platform so as the coagulated paneer mass can be collected manually at the outlet of the vat and all the whey shall be drained out in the whey collection trough. SS Dimple plate to be used for platform Bidder to submit the GA drawing for approval before commencing the fabrication work in the event of placement of order.

5.03) Citric Acid Dosing tank (Insulated Jacketed) with agitator and temp. control valve and controller

The system shall comprise following item/equipment.
Acid Dozing Tank (Jacketed + Insulated + Agitator):

Capacity : As per BOQ

Qty : As per BOQ

Duty : for Citric Acid Solution Preparation by dissolving loose matter in RO water

Type : Vertical, insulated, Jacketed with agitator

MOC : SS 304, 2.5 mm thick top & bottom, Jacket with 2 mm cladding

Connection : Inlet/outlet, port for steam inlet and condensate outlet

Controls panel : Steam control valve with TT and Temp Controller in local

Insulation : Hot insulation of minimum 50 mm thick

Note:

Supplier shall submit GA Drawing of the tank for approval before commencing the fabrication work and offer inspection of the tank in the event of placement of order.

Acid Dozing System with Spray to each Vat:

The system shall comprise of;
1. Suitable dosing pump (1W+1S, acid duty)
2. SS distribution piping for all the paneer vats installed.
3. Specially designed nozzles for uniform distribution of the acid in the paneer vat.
4. Manual SS butterfly valves for on off operation above each paneer vat.

5.04) SS working platform for paneer vat and dosing tanks

Capacity : As per BOQ

Qty : As per BOQ

MOC : SS 304 square box pipes for support structure and dimple type chequred plate for platform

5.05) Weigh collection trough

Capacity : Suitable to collect the whey from all the paneer vat

Qty : 1 no

MOC : SS 304

Accessories : Free standing ball feet, hooks for whey filtration cloth fixing, common drain at suitable height

5.06) Paneer hoops (in SS construction)

Capacity : As per BOQ

Qty : As per BOQ

The block Molds are made of micro perforated Suitable Grade Food grade plastic or Micro perforated and microgroove stainless steel plates suitable for easy draining of whey and in same time for quick reduction of temperature of paneer. The Mold should be design in such a way that it gives ease in de moulding as well as with minimum sticking of Paneer coagulum.

The scope also includes 5 nos. of SS trolley to shift the filled hoops from the whey trough to paneer pressing station. Supplier to take approval of the design before commencing the fabrication work in the event of placement of the order.

5.07) Pneumatic Paneer press with 4 stations with all standard Accessories, pneumatic switches, FR unit, timers, and whey collection tray

Capacity : As per BOQ

Qty : As per BOQ

Duty : To give the final shape and structure to portions of Paneer

The press shall work with increasing pressure.

The pressure force and its duration shall be regulated from the operation panel.
The presses shall consist of:
i) Supporting structure,
ii) Pneumatic cylinders
iii) Pressing lid with individual pressing heads.

The pressing lids shall be replaced after each day production, manually

Cleaned and put into disinfection tank.

The presses shall be made of acid-proof and stainless materials.

The pressing lids shall be made of polythene/SS perforated sheet enough to withstand the pressure and hold the coagulum intact.

5.08) Paneer block cooling tank

Type : Horizontal open with SS grill specially designed for paneer Block handling

Capacity : As per BOQ

Qty : As per BOQ

MOC : SS 304

Insulation : 50 mm thick PUF

Duty : To cool the paneer block coming out from the paneer press through circulation of chilled water

Accessories : Ball feet, inlet, and outlet for chilled water

5.09) Chilled Water circulation pump with filter and UV light treatment

Capacity : As per BOQ

Qty : As per BOQ

Duty : To circulate chilled water in dipping tank

All other specifications are same as per item no: 1.14

There shall be an online UV light chamber through which the water in circulation gets passed to make water bacteria free.

5.10) Chiller for dipping tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Plate heat exchanger

Duty : To chill the water required for paneer block cooling tank (Max. delta T is 10 Deg. C)

Pressure drops: 0.5 kg/cm2 maximum

Service : CW at 2.0 Deg. C

Accessories : TT with local display on CW inlet and outlet

5.11) Pasteurized Chilled water storage tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical, insulated

MOC : SS 304 of thickness as per OEM

Insulation : PUF insulation to ensure 1 Deg. C temp rise in 24 hours

Accessories : All standard accessories including manway, sight cum light glass, breather, ball feet, CIP spray ball, side mounted Agitator etc

Instruments : 1. Low- & High-Level switches
2. Temp transmitter

5.12) Paneer block drying tunnel with high-speed fan, SS enclosure and straight through conveyer

` QTY : Ass per BOQ

Capacity : As per BOQ

This shall be in SS construction with high-speed fan mounted on the top. There shall be SS chain/food grade material conveyor.

With the help of air pressure, the moisture from the block surface is removed.

Bidder to submit the GA drawing for approval before commencing the fabrication work in the event of placement of order.

5.13) Paneer block cutting machine for 200/500/1000 g block

QTY : Ass per BOQ

Capacity : As per BOQ

MOC : SS 304 (all contact part)

Type : Semi-Automatic with pneumatic cylinder

Operation : Through dedicated PLC

5.14) Double chambered vacuum packing machine

Capacity : As per BOQ

Qty : As per BOQ

MOC : SS 304

Chamber : Double

Min Chamber Clearance: 125 mm

Speed : 40 Seconds/cycle

Vacuum pump type: Busch / Toshniwal / Equivalent

Control : Panel with adjustable timing and pressure indication

5.15) Whey transfer pump to whey storage tank

Capacity : As per BOQ

Qty : As per BOQ

Duty : To transfer raw whey to storage tank

All other specifications are same as per item no 1.14

5.16) Raw Whey Storage tank (insulated)

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical, free standing ball feet, insulated

MOC : SS 304

Duty : To collect the whey generated from the paneer coagulation and feed to chiller

Instrument : TT, LT with local display & Level switches

5.17) Whey transfer pump to paneer milk heater and chiller

Capacity : As per BOQ

Qty : As per BOQ

Duty : To transfer whey to paneer milk heater & whey chiller

All other specifications are same as per item no: 1.14

5.18) Double section whey Chiller with cooling tower water section & Suitable Capacity cooling tower with circulation pumps

Capacity : As per BOQ

Qty : As per BOQ

Duty : To chill the whey to 70/12 Deg. -30 - 4 Deg. C

All other specifications are same as per item no: 1.15

5.19) Chilled whey Storage tank

Capacity : As per BOQ

Qty : As per BOQ

Duty : To store the chilled whey and transfer it for further processing/usage

Type : Vertical insulated tank

MOC : SS 304 of thickness as per OEM

Insulation : PUF insulation to ensure 1 Deg. C temp rise in 24 hours

Accessories : All standard accessories including manway, sight cum light glass, breather, ball feet, CIP spray ball, side mounted Agitator etc.

Instruments:
1. Low- & High-Level switches
2. Temp transmitter
3. Level transmitter

5.20) Whey dispatch pump

Capacity : As per BOQ

Qty : As per BOQ

Duty : To dispatch the whey

All other specifications are same as per item no: 1.14

5.21) control panel for local operation of paneer section

SS control panel with required switchgear and start stop push button with temp indication for all tanks to be considered in the scope of supply

5.22) SS Pipes, valves & Fittings for complete section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as per item no: 1.32

6.0) Reconstitution & Rinse Milk Recovery

6.01) Recon. Milk Preparation cum Storage Tank

Capacity : As per BOQ

Qty : As per BOQ

Duty : to prepare and store the reconstituted milk

Type : Vertical, insulated

Material : a) Inner shell - AISI 304 2 sheet & 2.5 mm thick bottom &top

b) Outer cladding - AISI 304: 2 mm thick welded construction

Finish : 2B finish

Agitation : Single side mounted mechanical agitator to ensure uniform fat distribution without any adverse effect on the contents in 10-minute time. Slow speed.

Ports and fittings:
1. Common Inlet/outlet & circulation nozzle on top
2. breather
3. CIP spray ball (openable type)
4. Nozzles for high and low-level sensors
5. Nozzle for level transmitter
6. Nozzle for temperature sensor
7. man way
8. light cum sight glass with LED battery
9. Toe guard (fully welded) to ensure no water mark in case of any CIP Leakage
10. Common platform of SS with SS staircase

Insulation : PUF Insulation of suitable thickness to ensure temp. rise does not exceeded 1 Deg. C in 24 hours' time in all seasons

Instruments:
1. RTD for milk temperature to be indicated on MMI as well
2. level switches for high & low indication on MMI
3. level transmitter for level indication to MMI as well as local display

Note:
1. Supplier shall submit GA drawing for approval to the purchaser for tank prior to fabrication work in the event of placement of order.
2. The tank support structure shall be welded in such a way that no metal-to-metal contact is established between inner shell and out shell to avoid sweating during all the weather condition.
3. Stage inspection to be offered for MOC, fabrication, welding, insulation, and final inspection before dispatch
4. Agitator seal leakage drainpipe with 38 mm blind union to be provided (if required).
5. Manual butterfly valve shall be provided at the common inlet/outlet of the tank for safety.

6. Ball feet with SS round plate at bottom to be provided. The base plate shall accompany the tank or will be delivered, prior to dispatch. This will be used without fail, to prevent damage to tiled flooring, during levelling due to point load.

6.02) Powder Blending System with Table mounted hopper and shear & booster pump with accessories

Capacity : As per BOQ

Qty : As per BOQ

The System shall be skid mounted with following major components.

1. Liquid Ring Pump
2. Shear Blender (only this will be allowed)
3. Powder Induction Funnel
4. Powder Control Valve
5. Liquid Control Valve
6. Internal Piping & Fitting
7. S. S. Skid for assembling all the above Parts

Technical Details of individual components are as follows.

Liquid Ring Pump.

Duty : It will draw the base milk out of the batch tank and will transfer it through a short pipe to the powder & will be of Sanitary Type.

Model No : Supplier to specify

kW/HP : Supplier to specify

Type : Sanitary, Monoblock, Self-Priming Centrifugal

MOC : SS 304

Accessories : Suitable rating motor with SS shroud & Base frame

Duty : To blend powder coming from funnel and mix with liquid

Type : Sanitary with specially designed impeller to create high turbulence mixing zone at the suction

MOC : SS 304

Model : Supplier to specify

kW/HP : Supplier to specify

Accessories : SS sound absorbing shroud, Motor, Base frame etc.

Powder Induction Funnel.

Duty : To Dump Powder in the shear pump

Capacity : 50 Kg

MOC : SS 304

Thickness : 2.5 mm

Powder Control Valve

Duty : To regulate powder flow in the suction of Shear Pump

Type : Sanitary Manual Valve

MOC : SS 304

Size : 63 mm

Liquid Control Valve

Duty : To regulate Liquid flow in the suction of water ring Pump

Type : Sanitary Manual Valve

MOC : SS 304

Size : 51 mm

Internal Piping & Fitting

SMS standard fitting to connect water ring pump, shear pump, funnel etc.
All SS 304 with suitable size.

S. S. Skid for assembling all the above Parts

All above components shall be mounted on SS 304 skid of suitable size.

6.03) PHE type Chiller for recon milk chilling in recirculation mode

Capacity : As per BOQ

Qty : As per BOQ

Duty : To chill the reconstituted milk from 38 Deg. C to 4 Deg. C.

Frame : Free standing SS 304 clad carbon steel frame on SS ball feet

Nozzles : AISI 304

Duty : Cooling raw milk from 35 to 4Deg.C.

Gasket :'SNAP-ON'(clip-on) type of Nitrile rubber

Instruments : Based on the milk outlet temperature from the chiller, chilled water flow rate will be regulated automatically. The milk outlet temperature will be indicated in the control room. Control valve and TT at milk inlet & outlet and chilled water outlet to be considered in the scope of supply

Services : Chilled water at +2 Deg. C. Pressure drop less than 1.0 kg/sq.cm.

Pressure drops: Less than 1.0 kg/sq.cm on milk side

6.04) Recon. Milk Transfer pump to Raw Milk silo, curd milk storage tank & past Balance Tank

Duty : To transfer the reconstituted milk to raw milk silo and past. balance tank

Capacity : As per BOQ

Qty : As per BOQ

All other specification are same as per std.

Note: Suitable arrangement to be done for cooling of motor running with VFD to avoid over heating while running on low speed. Use special motor for VFD operated pumps**.**

6.05) CIP Return Pump for Recon. Tanks

Capacity : As per BOQ

Qty : As per BOQ

Type : Centrifugal, self-priming

All other specification is same as that of item no 1.14

6.06) Flow Plate of Product & CIP for Reconstitution Section

Capacity : As per BOQ

Qty : As per BOQ

All other specifications shall be same as per item no: 1.30

6.07) SS Pipes, Valves & Fitting for Reconstitution Section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as per item no: 1.31

6.08) Balance tank for rinse milk recovery system

Duty : For storing the rinse milk from various sections

Capacity : As per BOQ

QTY : As per BOQ

Design : AISI 304, 2 mm thick, bottom outlet, valves inline strainer etc.

6.09) Milk circulation pump

Capacity : As per BOQ

QTY : As per BOQ

All other specifications shall be as per item no: 1.14

6.10) Rinse Milk Chiller

Capacity : As per BOQ

Qty : As per BOQ

Duty : To chill the rinse milk up to 4 Deg. C. in circulation mode

Instruments:

1.Inlet & outlet TT for milk and TT in CW out line

2. Control valve for temp control

All other specifications shall be as per item no: 1.15

6.11) Rinse Milk Storage tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated tank

Duty : For storage of Rinse milk

Agitator : side mounted with gear box

Material : SS 304, 2.5 inner shell & 2.5 mm thickness of bottom shell and top, 2.0 mm thick outer cladding

Insulation : PUF of suitable thickness to ensure 1 Deg. C temp rise in 24 hours

Accessories : Level transmitter, RTD, CIP spray ball, air vent, manway sight glass, sampling cock, Level Switches, SS ladder, SS railing, SS platform etc.

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

6.12) Rinse Milk Transfer Pump & Magnetic Flow Meter

Duty : For transfer of rinse milk from Storage tank to RMST and reconstitute section.

Capacity : As per BOQ

Qty : As per BOQ

Design : Stainless steel of grade AISI 304

All other Specification are same as per item no: 1.14

6.13) Flow Plate for Product & CIP for rinse milk recovery system

Capacity : As per BOQ

Qty : As per BOQ

All other specifications are same as per item no: 1.30

6.14) SS Pipes, Valves & Fitting for complete section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as per item no: 1.30

7.0) Automatic CIP Kitchen (3 CKT)

7.01) Conc. Lye unloading pump

Capacity : As per BOQ

Qty : As per BOQ

Duty : To unload the concentrated Lye from Lye tanker to conc. Acid storage tank

Type : Centrifugal

MOC : SS 316

All other specifications shall be as per item no 1.14

7.02) Conc. Acid unloading pump

Capacity : As per BOQ

Qty : As per BOQ

Duty : To unload the concentrated Acid from Acid tanker to conc. Acid storage tank

Type : Centrifugal

MOC : SS 316

All other specifications shall be as per item no 1.14

7.03) Concentrated Lye Storage tank

Capacity : As per BOQ

Qty : As per BOQ

Duty : To store the concentrated Acid

Type : Vertical, un-insulated

MOC : SS 316

Accessories : Sight & Light Glass, Lifting lug, Manhole (Top), SS ladder, SS platform, SS railing, Ball feet, Nozzles for instrument, outlet manual valve (SS 316) etc.

Instruments : Level Switches (Low & High), Level Transmitter (radar type)

All Lye handling pipeline, Valves (Diaphragm type) and accessories should be acid proof.

All SS lines which is handling high concentrated acid (50% conc.) and Alkali (50% conc.) shall be selected based on above concentration level.

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order**.**

7.04) Concentrated Acid Storage tank

Capacity : As per BOQ

Qty : As per BOQ

Duty : To store the concentrated Acid

Type : Vertical, un-insulated

MOC : SS 316

Accessories : Sight & Light Glass, Lifting lug, Manhole (Top), SS ladder, SS platform, SS railing, Ball feet, Nozzles for instrument, outlet manual valve (SS 316) etc.

Instruments : Level Switches (Low & High), Level Transmitter (radar type)

All acid handling pipeline, Valves (Diaphragm type) and accessories should be acid proof.

All SS lines which is handling high concentrated acid (50% conc.) and Alkali (50% conc.) shall be selected based on above concentration level.

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

7.05) Acid & Lye Dosing system for process & fermented CIP

Acid Dosing Pump

Capacity : As per BOQ

Qty : As per BOQ

Type : Diaphragm Type

Duty : To Dose concentrated Acid Solution to service tank as per concentration desired based on CT reading

Pneumatic valve shall be used to transfer conc. Acid to either process CIP acid tank or fermented CIP acid tank

Lye Dosing Pump

Capacity : As per BOQ

Qty : As per BOQ

Type : Diaphragm Type

Duty : To Dose Concentrated Lye Solution to service tank as per concentration desired based on CT reading

Pneumatic valve shall be used to transfer conc. Lye to either process CIP Lye tank or fermented CIP acid tank.

7.06) SS Platform for CIP Kitchen

For Approach of conc. Acid top, the platform shall be made of SS 316 and railing should be provided. SS 316 dimple plate to be used for fabrication. SS ladder to be provided for approach.

7.07) Pneumatic Valves for conc. Lye and acid transfer

Capacity : As per BOQ

Qty : As per BOQ

The specifications are as per item no: 1.31

7.08) SS Pipes, valves & Fittings for complete section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as per item no: 1.31

7.09) Lye Tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated

MOC : SS 304 2.5 mm & 3 mm thick inner shell & top, outer shell 2 mm thick

Insulation : 100 mm thick hot insulation of glass wool

Accessories : Sight glass, light glass, SS lifting lugs, Manhole, overflow pipe from inside, manual butterfly outlet valve, SS ladder, SS platform, SS railing, Nozzles for instruments, sample cock

Instruments & controls:

Level Switches (low, middle & high)

Temperature Transmitter

Conductivity transmitter

Automatic soft water Make up pneumatic butterfly valve

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

7.10) Acid Tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated

MOC : SS 304 2.5 mm & 3 mm thick inner shell & top, outer shell 2 mm thick

Insulation : 100 mm thick hot insulation of glass wool

Accessories : Sight glass, light glass, SS lifting lugs, Manhole, overflow pipe from inside, manual butterfly outlet valve, SS ladder, SS platform, SS railing, Nozzles for instruments, sample cock

Instruments &controls:

1. Level Switches (low, middle & high)
2. Temperature Transmitter
3. Conductivity transmitter
4. Automatic soft water make up pneumatic butterfly valve

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

7.11) Hot Water Tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated

MOC : SS 304 2.5 mm & 3 mm thick inner shell & top, outer shell 2 mm thick

Insulation : 100 mm thick hot insulation of glass wool

Accessories : Sight glass, light glass, SS lifting lugs, Manhole, overflow pipe from

inside, manual butterfly outlet valve, SS ladder, SS platform, SS railing,
Nozzles for instruments, sample cock
Instruments &controls:
1. Level Switches (low, middle & high)
2. Temperature Transmitter
3. Automatic soft water make up pneumatic butterfly valve

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

7.12) Recuperation Tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated

MOC : SS 304 2.5 mm & 3 mm thick inner shell & top, outer shell 2 mm thick

Insulation : 100 mm thick hot insulation of glass wool

Accessories : Sight glass, light glass, SS lifting lugs, Manhole, overflow pipe from inside, manual butterfly outlet valve, SS ladder, SS platform, SS railing, Nozzles for instruments, sample cock

Instruments &controls:
1. Level Switches (low, middle & high)
2. Temperature Transmitter
3. Automatic soft water make up pneumatic butterfly valve

7.13) Fresh Water tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical uninsulated

MOC : SS 304 2.5 mm & 3 mm thick shell

Accessories : Sight glass, light glass, SS lifting lugs, Manhole, overflow pipe from inside, manual butterfly outlet valve, SS ladder, SS platform, SS railing, Nozzles for instruments, sample cock

Instruments &controls:
1. Level Switches (low, middle & high)
2. Automatic soft water make up pneumatic butterfly valve

7.14) Sterilization tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical, cylindrical, insulated

MOC : 2.0 mm thick SS 304 inner shell and 2.0 mm thick outer cladding SS 304 in welded construction.

Insulation : Hot insulation as per relevant IS code

Accessories :
a. SS ball feet

b. Nozzles for high, low, and middle level

c. Half openable top cover (Hinged)

d. Automatic make up water butterfly valve

a. High, Low & middle level switch

b. Temp. transmitter

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

7.15) Recirculation pump for lye & Acid

Capacity : As per BOQ

Qty : As per BOQ

Duty : To circulate Ly & Acid during the preparation cycle

All other specifications are same per item no: 1.14

7.16) CIP forward pump

Capacity : As per BOQ

Qty : As per BOQ

Duty : For CIP forward flow to various circuit (VFD duty)

All other specifications are same per item no: 1.14

7.17) CIP Heater (THE)

Capacity : As per BOQ

Qty : As per BOQ

Type : Tubular

Media of heating: Hot Water

Temp rise : 20 Deg. C (minimum)

MOC : SS 304

Accessories : TT & Temp control loop, Supporting SS frame, In/out nozzles etc.
Note: Automatic Pumping trap to be consider for All THE

7.18) Duplex filter for CIP return line

Capacity : As per BOQ

Qty : As per BOQ

MOC : SS 304

Type : Quick opening bucket type

Duty : To filter the CIP return solution

Accessories : inlet & outlet 3-way manual valve

7.19) SS Platform for CIP Kitchen

Capacity : As per BOQ

Qty : As per BOQ

MOC : SS 304

Chequered plate: SS 304

Support : SS 304

Railing : SS 304

Staircase : Step stair with SS step and SS railing

This shall be common platform for CIP kitchen as per Approved layout.

Supplier to submit the GA drawing of arrangement made and take approval from the purchaser in the vent of placement of order.

7.20) Flow Plate of CIP forward & Return Circuit

Capacity : As per BOQ

Qty: As per BOQ

All other specifications are same as per item no: 1.30

7.21) SS Pipes, valves & Fittings for complete section

Capacity : As per BOQ

Qty : As per BOQ

All other specification is same as per item no: 1.31

7.22) Lye Tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated

MOC : SS 304 2.5 mm & 3 mm thick inner shell & top, outer shell 2 mm thick

Insulation : 100 mm thick hot insulation of glass wool

Accessories : Sight glass, light glass, SS lifting lugs, Manhole, overflow pipe from inside, manual butterfly outlet valve, SS ladder, SS platform, SS railing, Nozzles for instruments, sample cock

Instruments & controls:

Level Switches (low, middle & high)

Temperature Transmitter

Conductivity transmitter

Automatic soft water Make up pneumatic butterfly valve

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

7.23) Acid Tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated

MOC : SS 304 2.5 mm & 3 mm thick inner shell & top, outer shell 2 mm thick

Insulation : 100 mm thick hot insulation of glass wool

Accessories : Sight glass, light glass, SS lifting lugs, Manhole, overflow pipe from inside, manual butterfly outlet valve, SS ladder, SS platform, SS railing, Nozzles for instruments, sample cock

Instruments &controls:

1. Level Switches (low, middle & high)
2. Temperature Transmitter
3. Conductivity transmitter
4. Automatic soft water make up pneumatic butterfly valve

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

7.24) Hot Water Tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated

MOC : SS 304 2.5 mm & 3 mm thick inner shell & top, outer shell 2 mm thick

Insulation : 100 mm thick hot insulation of glass wool

Accessories : Sight glass, light glass, SS lifting lugs, Manhole, overflow pipe from inside, manual butterfly outlet valve, SS ladder, SS platform, SS railing,
Nozzles for instruments, sample cock

Instruments &controls:
1. Level Switches (low, middle & high)
2. Temperature Transmitter
3. Automatic soft water make up pneumatic butterfly valve

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

7.25) Recuperation tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated

MOC : SS 304 2.5 mm & 3 mm thick inner shell & top, outer shell 2 mm thick

Insulation : 100 mm thick hot insulation of glass wool

Accessories : Sight glass, light glass, SS lifting lugs, Manhole, overflow pipe from inside, manual butterfly outlet valve, SS ladder, SS platform, SS railing, Nozzles for instruments, sample cock

Instruments &controls:
1. Level Switches (low, middle & high)
2. Temperature Transmitter
3. Automatic soft water make up pneumatic butterfly valve

7.26) Sterilization tank

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical, cylindrical, insulated

MOC : 2.0 mm thick SS 304 inner shell and 2.0 mm thick outer cladding SS 304 in welded construction.

Insulation : Hot insulation as per relevant IS code

Accessories :
a. SS ball feet

b. Nozzles for high, low, and middle level

c. Half openable top cover (Hinged)

d. Automatic make up water butterfly valve

a. High, Low & middle level switch

b. Temp. transmitter

Note: Supplier shall submit GA drawing for approval before commencing the fabrication work in the event of placement of order.

7.27) Recirculation pump for lye & acid

Capacity : As per BOQ

Qty : As per BOQ

Duty : To circulate Ly & Acid during the preparation cycle

All other specifications are same per item no: 1.14

7.28) CIP forward pump

Capacity : As per BOQ

Qty : As per BOQ

Duty : For CIP forward flow to various circuit (VFD duty)

All other specifications are same per item no: 1.14

7.29) CIP Heater (THE)

Capacity : As per BOQ

Qty : As per BOQ

Type : Tubular

Media of heating: Hot Water

Temp rise : 20 Deg. C (minimum)

MOC : SS 304

Accessories : TT & Temp control loop, Supporting SS frame, In/out nozzles etc.
Note: Automatic Pumping trap to be consider for All THE

7.30) Duplex filter for CIP return line

Capacity : As per BOQ
Qty : As per BOQ
MOC : SS 304
Type : Quick opening bucket type
Duty : To filter the CIP return solution
Accessories : inlet & outlet 3-way manual valves

7.31) SS Platform for CIP Kitchen

Capacity : As per BOQ
Qty : As per BOQ
MOC : SS 304

Chequered plate: SS 304
Support : SS 304
Railing : SS 304

Staircase : Step stair with SS step and SS railing
This shall be common platform for CIP kitchen as per Approved layout.

Supplier to submit the GA drawing of arrangement made and take approval from the purchaser in the vent of placement of order.

7.32) Flow Plate of CIP forward & Return Circuit

Capacity : As per BOQ

Qty: As per BOQ

All other specifications are same as per item no: 1.30

7.33) SS Pipes, valves & Fittings for complete section

Capacity : As per BOQ
Qty : As per BOQ

All other specification is same as per item no: 1.31

8.0) SS Pipes, Valves & Fittings

8.01) Control valves 2 way & 3 Way

Quantity : 1 Lot

Pneumatic control valves complete with 4-20 mA output electro- pneumatic positioners to be considered with sanatory design for process.

The control valve sizing shall be done in such a way that the calculated noise level at worst operating condition shall not be more than 85 dBA at 1 m distance.

Valve trim material shall be harder than, but compatible with, the pipe in which it is installed.

All control valves shall have sufficient overload range. At maximum operation, the control valves shall be at 75-80% open. Valve bodies shall be no more than two (2) line sizes smaller than the pipe in which they are installed.

Leakage class ANSI IV

All control valves stroke/throughput characteristic shall, dependent on the purpose. The valve stems shall be well guided, and the valves shall operate without excessive vibration and noise. The above

shall achieve a stable fluid control over the entire flow range. Control valve design and location shall consider flashing and cavitation conditions.

In case of failure of electric or pneumatic supply or in case of failure of the controller output signal, the actuators shall remain locked in actual position or shall reach a safe position, depending on the process requirement

8.02) Manual gauges for temp, pressure etc.

Manual Temp & pressure gauge with or local indication on all utility lines. Pressure gauge sensing element shall be Bourdon / Bellow / Diaphragm type in general depending upon the process condition. Direct reading Pressure / Differential Pressure gauges shall be used of SS 316 sensing element and AISI 304 movement material.

All accessories, such as 2-valve manifold etc. shall be provided with pressure gauges according to application. Where process temperature exceeds 70 C, siphon loops shall be utilized.

Local temperature measurement shall be done bi-metal Temperature gauges. Temperature gauges may be direct mounted type (multi-angle) or with SS capillary extension (at least 3 Mtrs) as per the application area.

The sensing element / bulb / capillary etc. shall be of SS 316 for temperature gauges.

8.03) SS pneumatic valves (2 way/3 Way / Butterfly) for Past. FDV, Curd Milk Past., Paneer milk Heater, CIP Kitchen etc.

Qty : 1 Lot
Sizes : As required
Type : TIG welded; annealed and de-scaled tubes shall be manufactured as per the standard ASTM-A270.
Material : AISI 304 / AISI 316 as per requirement
Finish : Outer surface of the tubes shall be with dairy finish and inner surface should be pickled as per dairy standard
Thickness : The average wall thickness of tubes should be 1.6 mm up to 76.2 mm OD and 2.0 mm for diameters above 76.2 mm OD.

SS Actuated Butterfly Valves

Type : sanitary Pneumatic butterfly valve with control cap and 24 DC connectivity

Qty : 1 Lot

All other specification shall be as per item no 16.02

Note: Utility actuated valves shall be with 24V DC hard wired connectivity

SS Manual Valves

Required number of valves to be finalized during detail engineering as per functional requirement & standard engineering practice.

a) Manual butterfly Valve: The butterfly valve shall be of sanitary design and all liquid contacting parts shall confirm to AISI 316. The valve sealing gasket shall be EPDM /Nitrile rubber material suitable for hot water sterilization temperature of 100 Deg. Celsius and hot acid and lye solution of 2% concentration at 85 Deg. Celsius. The valve shall be provided with SS handle.
The valve shall be with plain ends shall be suitable for direct welding on the pipes.

b) Non-Return Valve: The non-return valve shall be of sanitary design and all liquid contacting parts shall confirm to AISI 304. The valve sealing gasket shall be EPDM / Nitrile rubber material suitable for hot water sterilization temperature of 100 Deg. Celsius and hot acid and lye solution of 2% concentration at 85 Deg. Celsius. The non-return valve shall be with plain ends shall be suitable for direct welding on the pipes.

c) Unions: All the parts unless otherwise specified shall be made out of investment casting using AISI 304 material The union shall be complete with liner, male part, nut and sealing ring (neoprene food grade rubber gasket). The liner and male parts should be suitable for expansion joints. All the inside as well as outside surface of the union shall be with dairy finish.

d) Bend, Tee, Elbow: These fittings shall be made out of AISI 304 unless otherwise specified, process tube, TIG welded, annealed, de-scaled having outer surface mirror polished and inside pickled, manufactured as per ASTM A270. The thickness of the fittings made from the tube section should not be less than 1.6 mm up to 76 mm Dia and should not be less than 2.0 mm for above 76 mm dia. The wall thickness at any point shall not vary more than 12.5% over and under from the average wall thickness specified.

Bends and elbows shall be free from wrinkles. Tee shall have uniform flaring on the branch connection. The ovality on the open ends shall be within the permissible limit specified in the ASTM A270.

Manual Utility Valves

Capacity	: Suitable
Qty	: 1 Lot
Type	: Non- Sanitary
Make	: As per approved make list
Service	: Utility lines.
Working Pressure	: 5.0 bar (g)
Design Pressure	:8.0 bar (g)

Working Temp.	:1.5°C to 100°C
Class	: Non-IBR
Pressure Rating	:150 #
Body	:CI/Die cast Aluminum
Wetted Parts	:CI/ Die cast aluminum
Body Liner/Seat	: Nitrile rubber /AISI304
End Connections as required	: Valve shall be sandwich between GI flanges or weldable end
Test Pressure	:15 bar (g).

Actuated Utility Valves

Capacity	: Suitable
Qty	: 1 Lot
Actuator	: SOV (24V DC operated)
Feedback	: On/off (separate) through proximity/limit switches

SS 304 Fittings

Type	: SMS or quick opening tri-clover clamp type.
Thickness	: Thickness of fitting made from tube will not be less than 1.6 mm up to 76.2 mm dia. And will not be less than 2.0 mm for above 76.2 mm dia.
Unions	: Will be complete with liner, male nut, and gasket. Liner made of male parts will be suitable for expansion joints.
Pipe clamps	: Will be quick opening type

Supports required for pipes:

Size	: Square sections as required
Type	: Supported from walls, ceilings, and floors
Material	: AISI 304

SS Pneumatic mix proof and single Seat Valves (For CIP kitchen area and all past. diversion valves, make up valves etc.)

Qty	: 1 Lot

Type : Pneumatically operated sanitary valves of mix-proof double seat type with independent seat lifting facility for CIP

Application : The Mix proof and single Seat Valves shall be provided for all valve batteries to ensure mixing free simultaneous product and CIP operation and flexibility in operation.

Material : AISI 316

Gaskets : EPDM

Features : Housing should be ball shaped for the ideal flow characteristics to ensure 100% clean ability by CIP. Housing closed by cover plates should not create a sump or dead corners. The seals such as housing seals, stem seals and disc seals shall be flush mounted.

Position Sensing : separate on and off proximity switches for open and close feedback

Signaling : All the pneumatic valve shall have Asi bus connectivity SS Actuated Butterfly Valves (For CIP & past. make up valves)

Type : sanitary Pneumatic butterfly valve with control cap and 24 DC connectivity

Qty : 1 Lot

Note: Utility actuated valves shall be with 24V DC hard wired connectivity

9.0) Steam Generation & Distribution (2 x 1.5 TPH Boilers)

9.01) Gas/LDO Fired Boiler (2x1.15 TPH) with All standard Accessories, maintenance platform, LDO storage tank (2x10 KL), LDO day oil tanks, LDO ring main system, economizer, APH ,Electrical control panel, Chimney, RO plant with dosing system for boiler feed water etc.

Capacity : As per BOQ

Qty : As per BOQ

PARAMETERS	**TECHNICAL SPECIFICATION**
METEROLOGICAL DATA	
Ambient Temp.	46 °C. Max. 8 °C. Min.
Design Temp.	25 °C.
Relative Humidity	95% Max. & 26% Min.
Wind Velocity	179 km / Hr. Max.
STEAM PRODUCTION	
Capacity	As per BOQ at F & A 100°C at Steam Pr. of 10.55 kg/cm2 at actual operating conditions
Design Pressure	10.55 kg/cm2
Safety Valve Set Pressure	10 & 10.5 kg/cm2
Operating Pressure	9.0 kg/cm2
Quality	Saturated 98.5 % dryness
BOILER SPECIFICATION	

Make	As per Make list
Type	Dual Fuel (LDO – Primary Fuel & NG – Secondary Fuel) 3 Pass Wet Back design

Design Mode	IBR
Type of mounting	Skid mounted
Tubes Thickness in mm	3.25 mm minimum
Tube Diameter in mm	50.8 mm minimum
Effective length in mm	Pl. Indicate
Foot Print of Boiler in mtrs	Indicate
Material of Construction	SA 515/516 Gr 70 / IS 2002 Gr II
Boiler Drum	
Shell Plate	SA 515/516 Gr 70
Tubes	BS 3059 ERW
Manhole/Hand hole	SA 515/516 Gr 70
Pipes	SA 106 Gr B
Furnace	
Plates	SA 515 / 516- 70
Header/Pipe	SA 106 Gr B
Tubes	BS 3059 ERW 320
Excess O2	For NG 2% Max. & for LDO 4.0 to 4.5 % Max.
Efficiency of Boiler without heat recovery unit	Thermal η on NCV of NG/LDO 89%
Efficiency of Boiler with heat recovery unit	Thermal η on NCV of NG 93%; LDO 92%
Chimney Outlet temperature	Approx. 130°C To 140°C
BURNER	
Type	Step-less Modulating, Mono-bloc ECR
Make	Bidder to specify
Burner Nozzle	OEM

Turn Down	1:5 on NG & 1:4 on LDO.
Burner Modulation System	Step-less Modulation with O2 trimming (VFD based)
LP Gas train	VPS, Multiblock valve, etc. to be part of burner
DETAILS OF F.O. SYSTEM	
Qty. of LDO Pumps	As per OEM design (1W+1S)
Make of LDO Pumps	AS per OEM
Motor	Eff. Class-1
VFD	As per Make list
Duplex Filter	Required
Oil Solenoid Coil	Required
Ignition Transformer	Required
Oil Back Pressure Regulating Valve	Required
Oil Gun	Required
Ring Main System	As per OEM design with 1 W+1S pump
DETAILS OF BOILER FEED WATER SYSTEM	
Feed Water Temp. at the inlet of Boiler	50 to 60°C
pH	Pl. Indicate
Conductivity	Pl. Indicate

Hardness	Pl. Indicate
Oil content	Pl. Indicate
Oxygen	Pl. Indicate
TDS	Pl. Indicate
Boiler Feed Water Pumps	Required for supply of Feed water from Existing Main Feed Water tank to Boiler through Pressurized Economizer
Qty	Two (1 W + 1 S)
Type	Single Element control with by-pass arrangement
Make	GRUNDFOS / Equivalent
Motor	TEFC, High Efficiency, Eff. Class-1
Interconnecting Piping between Pumps & Feed Check Valves	To be Provided

VFD	AS per Make List
PRESSURIZED ECONOMIZER (IBR)	
Type	IBR approved Pressurized Heat Recovery Unit
Flue Gas Qty.	Pl. Indicate
Flue gas inlet Temp. °C	Approx. 250°C
Flue gas outlet Temp. °C	Approx. 130-140°C for N.G. and 180°C (Min.) for LDO
Feed water inlet Temp. °C	50-60°C Oxygen free
Feed water outlet Temp. °C	Pl. indicate
Pressure drops across economizer	Pl. Indicate
Drain Valve	Required
Vent valve	Required
Safety valve	Required
Inlet temperature indicator water side	Required
Outlet temperature indicator water side	Required
Inlet pressure indicator water side	Required
Outlet pressure indicator water side	Required
Bypass on Water Side with fittings with shut off valves	Required
Supply & Installation of interconnecting ducting from Boiler to Pressurized economizer & From economizer to chimney	Required
Bypass arrangement of pressurized economizer	Pl. indicate
UTILITY DATA	
Electric Power	
Voltage	415 V +/- 10 % AC.
Frequency	50 Hz+/- 3%
Phase	3 Phase, 4 wire
Control Power	
Voltage	230 V +/- 10 % AC.
Frequency	50 Hz+/- 3%
Phase	Single, 2 wire
Fuel	
Fuel oil	
Type	NG and LDO
Pressure	Gas Pressure ≤ 2 bar
Temperature	30°C
Specification	N.G.: NCV- 8500 Kcal/SCM; GCV- 9500 Kcal/SCM
	F.O.: NCV-9650 Kcal. /Kg; GCV-10,200 Kcal/kg

System: This shall be suitable for handling the fuel specified. Burner shall be mono-bloc type.
The burner and the boiler design shall be compatible with each other and it is recommended that both the burner and boiler manufacturer are the same.

The burner shall be of Monoblock construction and directly mounted on the furnace of the boiler. In case of burner construction, the burner shall have a hinged construction for easy maintenance ensuring reduced downtime.

The burner load regulation shall be electronic compound regulation consist of independent servo motor for air damper, an independent servo motor for oil regulation. Each motor shall be controlled through a central burner management system digitally. No Mechanical linkages should be provided to control air and fuel ratio.

Pressurized Economizer

Vendor shall offer Pressurized Economizer (IBR) complete with supporting structural; dampers (3 Nos including on Bypass); insulation & cladding. The Pressurized Economizer shall be designed for an inlet feed water temperature of 40 Deg C. Offered economizer shall be MS finned tube type, with design fuel as NG.

Day Oil Tank: The oil tank shall be with a capacity of 2000 lits. The Oil tank shall be manufactured as a horizontal rectangular tank with 6 mm thick plates. The Oil Tank shall be complete with all the necessary accessories like:

a. Level Gauge
b. Outflow Heater
c. Level Control System consisting of 3 level switches for high, low and extra low level of oil in the day tank.
d. Insulation & Cladding

MS Self Supported Chimney: Designed as per IS 6533 with suitable height. The chimney shall be designed for a boiler capacity of 2 X 1.5 TPH. The corrosion allowance to be considered shall be 1.5 mm and shall be complete with

(a) Aviation Lamps
(b) Lightening Arrestor
(c) Earthing Strips
(d) Inlet for ducting coming from boiler
(e) Ladder & Platforms at suitable heights
(f) Insulation & cladding of the Bottom 2 meters

Flue Gas Ducting: from boiler to Chimney complete with expansion bellows, insulation & cladding.

Accessories

a.	Oil firing equipment	Pressure jet, automatic, with necessary valves, fittings & mountings – 1 set
b.	Oil pump with drive motor	1 no.
c.	FD fan with drive motor	1 no.
d.	Electric pre-heater	1 no.
e.	Multistage feed pumps with motors	2 nos.

Mounting & Fittings

a.	Main steam stop valve	1 no.
b.	Safety valve	2 nos. (with each capable of 50% venting capacity)
c.	Feed check valve	2 nos.
d.	Auxiliary valve	1 no.
e.	Blowdown valve with Automatic Blowdown Control System	1 no.
f.	Isolating valve for water level controllers	2 nos.
g.	Isolating valve for pressure switches and pressure gauge	2 nos.
h.	Drain valve for water level controller	2 nos.
l.	Sight glass assembly	set

Instrumentation

a.	Water level controllers	2 nos.	for feed pump operation and low water level alarm
b.	Over-ride controller	1 no.	for lockout under extra low water level alarm
c.	Steam pressure gauge with cock	1 no.	For display of boiler steam pressure
d.	Water level gauge assembly	2 nos.	For display of water level in the boiler
c.	Switch gears, relays, connectors	1 set	For individual controls of equipment through control panel
d.	Audio / visual alarm	1 set	In case of unsafe operation for lockout under extreme conditions
e.	Pressure and temp gauge with thermostat	1 set	for burner operation
f.	Control panel	1 no.	For housing above instruments and switchgears
g.	Steam to fuel ratio monitoring system	1 no.	To monitor and display the boiler efficiency on-line, using necessary meters, instrumentation, and hardware.

Controls & Safeties

Oil temperature indicator	1 no.	Local cum panel mounted to indicate oil temperature
Pressure switch	2/3 nos.	For firing positions of burner
Photo resistant cell	1 no.	Flame failure and audio-visual alarm
Temperature controller	1 no.	To control oil temperatures in burner heater before nozzle with audio visual alarm and burner trip

Sequence controller	1 no.	To control sequence of firing, pre-purging etc.
Modulating mechanism	1 no.	Stepped / Three stage modulation
Low oil pressure switch	1 no.	To trip burner with audio visual alarm
Level controller	2 nos.	To regulate feed water pump operation and trip burner in case of very low level with audio visual alarm.

MCC Cum Control Panel

A MCC cum control panel, complete with main isolator switch, starters, auxiliary contactors, relays, fuses, rotary switches, indicating lamps, isolator, hooters with programmer and combustion safety relay. The panel should be completely pre wired and factory tested. It should be mounted on the boiler itself and shall not require any separate foundation.

Insulation & Cladding

The boiler should be completely insulated in the factory itself and there should not be any site work involved for insulation and electrical cabling. The cylindrical shell of boiler must be insulated with glass wool / Rock wool mattresses of desired thickness and should be housed in a box shaped CRCA covered frame giving the boiler a provides neat appearance and reducing heat loss due to the air gap between insulated shell and outer sheet metal cover. The top plate of the box should be designed to provide working platform for maintenance.

LDO Storage tanks

Capacity : As per BOQ

Qty : As per BOQ

Type : Vertical insulated storage tanks with bottom heat Tracing

MOC : MS

The tanks and accessories shall be installed as per relevant safety norm of fire safety department from GOI.

Bidder to consider following minimum accessories and pumps and unloading + transfer header for LDO storage tanks

1. LDO tanker Unloading pump (1W+1S)
2. LDO unloading hose (2 Nos)
3. Strainer (duplex) + Isolation valves
4. LDO transfer pumps (1W+1S) to Day storage tank
5. Control panel for all starter with automatic transfer to LDO storage tank Any other accessories required for complete system

9.02) Automatic PID based PRS with PT and I/P converter for 10.5 -3.5 Bar duty with isolation, bypass, and Steam trap

Capacity : As per BOQ

Qty : As per BOQ

Type : PID & PT based PRS

Pressure : 10.5 to 3.5 Bar

Accessories : Inlet & outlet isolation manual glandless type valve, Bypass valve, steam trap, safety valve and other accessories as per OEM

9.03) Steam pipes, valves & Fittings for complete plant (HP & LP) with insulation

Capacity : As per BOQ

Qty : As per BOQ

HP piping & its insulation shall be as IBR. For LP steam piping MS 'C' class pipes (ERW) IS 1239/3601/4736 shall be used. Insulation of glass wool (min 50 mm) with 22 Gauge aluminium cladding to be considered in the scope.

9.04) Condensate pipes, valves & Fittings for complete plant with insulation including min. 3 nos. of condensate transfer pumps

Capacity : As per BOQ

Qty : As per BOQ

MOC : MS "C" Class

There shall be complete condensate collection system from individual/group of consumption points in the plant to boiler feed tank
Following minimum area condensate to be collected through Automatic condensate pumping trap;

1. All Pasteurizer and heater in process hall – no condensate is allowed to be drained in process hall
2. Processing CIP kitchen – 3 circuits
3. Fermented CIP kitchen -2 circuits
6. Paneer milk heater

All condensate line shall be insulated inside and outside with hot insulation of min 50 mm insulation and 22 Gauge aluminium cladding.

10.0) Chilled Water Generation & Distribution (100 TR x 2 Comp.)

10.01) Reciprocating ammonia compressors with all standard accessories with VFD and Suitable rating motor with required instruments and controls

Qty: As per BOQ

Capacity : As per BOQ

The proposed system shall comprise of;

Compressor : Ammonia based screw compressor with economizer

Suction temp : -5 Deg. C

Condensing temp: +36 Deg. C

Condenser & Chiller: PHE type

Oil Cooling : Water Cooled

Duty : To generate chilled water at 0.5 Deg. C with 50% load on IBT and 50% load on PHE chiller The brief specification of the proposed system is follows;

Compressor

Capacity : As per BOQ

Type : Reciprocating compressor suitable for ammonia

RPM : As per OEM design

Accessories :

a) Suction & Discharge line stop valves
b) Suction & discharge line check valve
c) Suction scale trap with strainer
d) Instrumentation as per OEM design
e) other standard Accessories as per OEM desing

Ammonia receiver

Capacity : As per OEM design with 100% radiography

Qty : As per OEM design

Following but not limited to accessories to be considered for Ammonia receiver;

1. liquid inlet and outlet valves,
2. charging valve,
3. dual safety valve,
4. 2 nos. purge valve,
5. drain valve, pressure gauge,
6. liquid gauge glass indicator with valve.

The vessel shall be of IS:2002 / SA 516 and IS: 2002 Clause –I and all the welding joints are tested 100% radiographed.

Ammonia Accumulator

Capacity : As per Design

Qty : As per Design

Type : Horizontal LP accumulator

Size : Suitable for -5 Deg. C suction temp. application for IBT & PHE Chiller
The accumulator shall be complete with suction gas outlet of doom type with mist eliminator and valve, suction gas inlet valve, suitable liquid outlet valve to pumps including one no. as spare for future, oil drain connection with receiver of 50 Litres capacity complete with heating arrangement, gauge tapping with valves, mounting pads for two nos. level switch, dual safety valve, pressure gauge, manual fill connection with necessary valves, vapor vent connection from pumps complete with valves.

All mild steel structure for the accumulator shall be spray galvanized.

The accumulator comprising of the following accessories;
a) DANFOSS make Level Transmitter
b) DANFOSS make liquid level switch for high & low-level safety.
c) Frost free heavy-duty level glass.
d) DANFOSS make Pressure Regulating Valve

Ammonia circulation system

Capacity : Suitable

Qty : 1 W + 1 S pump Canned motor open type re-circulation system suitable for –5 °C SST complete with pump for ammonia re-circulation, 7.5 HP TEFC Squirrel Cage Induction type 4 pole motor suitable for operation on 400/440 V, 50 Cycles and accessories comprising suction strainer, suction and discharge valves, check valves. Pump will be supplied with 2 nos. pressure differential switch

Automatic air purge system

Qty : 1 Set

Multi point (6 Points) electronic Air purger operating on 220 Volts,
50 Hz. The purger includes gauge glass, one no. electronic purger controller, solenoid valve, thermostatic expansion valve, strainer, liquid seal trap and metering valve.

10.02) New power cum control panel for refrigeration system

Qty : As per BOQ

Capacity : As per BOQ

The proposed system shall include, but not limited to the following;

a. PLC Panel with required I/o & power supply module for sequential operation of Dairy refrigeration system and cold store refrigeration system

b. ES+OS industrial grade PC with 16 GB memory, 2 GB graphic memory, 512 GB SSD & ! TB HDD with I7 10th generation processor with 29" LED monitor

c. Original software with licenses for above operation

d. Connectivity with Main PLC system for data transfer

e. Table & Chair (2 nos.) for refrigeration control room

f. Other hardware for networking

g. Any other specific requirement for automatic operation

10.03) New IBT with all standard accessories

Capacity : To meet the peak load requirement of refrigeration load during morning & evening can reception

Type : outdoor IBT with PUF insulation

MOC : MS minimum 6 mm wall & 8 mm bottom and agitator plate with PUF insulation and corrosion resistance paint from inside

Compartment : As per OEM design

The tank shall be complete with necessary stiffening arrangements. The tank shall include a central baffle and guide end plates at all corners of the tank. The tank shall be complete with flanged outlet, return water connections, overflow, and make up water inlet with float valve, etc. The tank shall be painted as per standard specification.

Ice Accumulation Coil fabricated out of 32 mm Seamless SA 106, Sch. 40 pipe having a total length of suitable RMT**.** The coil shall be designed suitable for Over Feed System with necessary liquid inlet / outlet and gas inlet / outlet valves. THE COIL SHALL BE SPRAY GALVANIZED AFTER ITS FABRICATION.

For each compartment Liquid feed assemblies comprising of Strainer, Liquid Solenoid Valve, Metering Valve, Isolating Valve, valved By-pass, pump out connection, valved & plugged complete with Automatic Ice thickness switch. IBT insulation shall be done with 80 mm thick PUF panel. The brick wall shall be constructed around it is in purchaser's scope. Ladder required for approach and safety railing shall be considered in scope. Suitable dia. Belt driven Agitator with motor to be considered in the scope. IBT Cover suitable for In-door type made of Pre-Engineered Sandwiched Panels complete with 80-mm thick complete and the size shall be suit to ice Bank tank and it shall be supplied with 2 nos. SS collapsible handles

Chilled Water Circulation Pump

Capacity : To meet the peak load requirement

Qty : 2 W +1 & provision for future connection

Type : Vertical

MOC : SS 304 & casing of CI

Motor : TEFC, IE3 motor of suitable rating for operation with VFD and with SS protection cover

Starter : VFD driven

Accessories:
Fitter, NRV, Isolation valves, Suction & Discharge header, Magnetic flowmeter in discharge line, TT in inlet & outlet line, Pressure Transmitter etc.

NOTE: Supplier must submit the IBT coil calculation with the offer.

10.04) Evaporative Condenser with pumping system

Capacity : To meet the above compressor capacity with 20% safety

Type : Ammonia plate heat exchanger

MOC : SS 316

Water in Temp.: 32 Deg. C

Water out Temp.: 36 Deg. C

Ammonia Temp.: 40 Deg. C

Circulation pump

Capacity : As per BOQ

Qty : As per BOQ

Type :Vertical, Centrifugal

MOC : Casting Steel

10.05) PHE chiller for return line

Capacity : As per BOQ

Qty : As per BOQ

Duty : To pre-chill the water the pre-chiller will have refrigerant liquid inlet, vapour outlet, water inlet and water outlet connections. The pre-chiller shall be with laser welded cassettes along with Neoprene gasket etc.

Controls & Instruments for the above chiller comprising the following;

a) 1 No. Electronic Float Switch
b) 1 No. Liquid Line Solenoid Valve
c) 1 No. Digital Temperature indicator cum controller
d) Anti-freeze thermostat
e) Back pressure regulating valve

Capacity : to take 50% of load of IBT

Inlet / outlet temp of water: 16 / 10 Deg. C

10.06) Ammonia Pipes, valves & Fittings with puff insulation

Capacity : As per BOQ

Qty : As per BOQ

MOC : Heavy Duty MS “C” Class pipes

Insulation : PUF slab of suitable thickness as per pipeline size with aluminum cladding

10.07) Chilled Water pipes, valves & Fittings with puff Insulation

Capacity : As per BOQ

Qty : As per BOQ

MOC : GI “B” Class

Insulation : PUF slab of suitable thickness with aluminum cladding

10.08) First charge of ammonia & lubrication

Qty : As per BOQ

Capacity : As per BOQ

All type of oil required for first charge and Ammonia shall be considered in the scope

10.09) Safety Equipment for Refrigeration Plant

Qty : As per BOQ

Capacity : As per BOQ

The scope shall include the following.

a. Safety Shower
b. Oxygen Mask with cylinder
c. Ammonia suit (PPE)
d. Trolley mounted High speed Exhaust fan (3 phase) with starter
a. Any other safety equipment as per OEM

10.10) Ammonia Detection System

Qty : As per BOQ

Capacity : As per BOQ

The scope shall include sensors located at various location in the plant and shall generate alarm and safety and safe shutdown of the equipment as per standard safety procedure.

11.0) Compressed Air Generation & Distribution

11.01) Screw type Air compressor (Air cooled) with, Oil Filter, VFD driven with air duct for exhaust and all standard accessories

Quantity : As per BOQ

Capacity : As per BOQ

Type : Screw Type, Air- cooled design

Controls : Suitable for automatic operation with variable frequency drive & necessary instruments for energy saving

Accessories : Pre-filter, after cooler, VFD and control panel, ducts for hot air and fresh air, terminal filters, bird guard etc.

The compressor should have all controls for auto operation and pressure monitoring

Note: Bidder must ensure no oil carry over with air and for that, high quality filters must be used in outlet line and the design must be approved from client before procurement in the event of placement of the order.

11.02) Air Receiver with All standard Accessories including inlet/outlet valves, automatic drain valve, pressure gauge etc.

Quantity : As per BOQ

Capacity : As per BOQ

Material : Stainless-steel

Type : Vertical cylindrical

Mounting : Self-supporting

Accessories : Inlet & outlet nozzles, auto drain valves, pressure transmitter, pressure & temp gauge, safety valves, condensate drainpipe, Automatic timer-based drain valve etc.

11.03) Compressed Air SS Pipes, Valves & Fittings for complete plant

Quantity : 1 Lot

Complete air distribution shall be through SS 304 pipeline. From main line, a line should be tapped for particular sections and accessories considered are isolating valve, air filter regulator and distribution plate. From distribution plate, nylon tube should be provided to connect to the utility points. Instruments tubing more than 1 meters should be laid in protective flexible hose / conduit.

12.0) Electrical, HT, PCC, MCC & distribution

12.01) Two Pole Structure

Capacity : AS per BOQ

Qty : As per BOQ

Type : 2 Pole/4 Pole structure for HT incoming power

Accessories : All standard accessories as per WBSEB regulations

Paint : High temp. Aluminium paint

Earthing : As per Electricity Board standard

12.02) HT cable from Two pole structure to HT breaker & HT breaker to Transformer

Capacity : Suitable

Qty : 1 Lot

Type : HT XLPE, with aluminium Armored, Suitable for 33 KV HT Voltage
Rating : As per requirement

12.03) HT Panel with suitable 1 no of incomer and 1 no of outgoing feeder and one HT breaker (outdoor type at two pole structure with all standard Accessories and UV relay

Qty : As per BOQ

The system should l include:
- HT panel with CT/PT and controls
- VCB one no as incomer & outgoing
- Earth fault & under voltage relay

The brief specification of HT pane shall be as follows;

1. 11 KV, triple draw out type electrically operated vacuum circuit breaker, complete with all accessories. The spring charging motors shall be 240V AC.
2. Shunt trip coil for operating on 110V DC
3. Voltage relay similar to GEC make VAGM 22- 2 nos. for two phases
4. Set of relays similar to GEC make CDG-61 relay to provide combined protection for over current, short circuit & earth leakage complete with accessories overcurrent setting 50-200% earth fault setting 10-40%
5. TNC switch for emergency tripping
6. Indicating lamps on, off, trip circuit healthy with pushbutton, auto trip, spring charged & spares suitable for operation on AC supply
7. Three numbers single phase dry type cast resin insulated potential transformer accuracy class 1.0 with secondary HRC fuses for protection. Rating 33kV/110V, 100VA.
8. Wound type cast epoxy resin insulated high voltage current transformer as per IS: 2705 of suitable ratio, with double required burden (minimum 15VA) for metering & protection. The CTS shall also be suitable for withstanding the rated short circuit current. Class of accuracy for metering shall be 1.0 & for protection 10P10. Rating 400/5/5
9. Ammeter flush mounting type of frame size 144 sq. mm & scaled for rated voltage with selection switch

10. Voltmeter flush mounting type of frame size 144-sq. mm & scaled for rated voltage with selection switch
11. Adequate auxiliary contacts & wiring for interlocking circuits fault annunciations, indicators etc.
12. Provision for cable termination kits suitable for bottom entry of 3C X 240sq-mm XLPE cable
13. Window annunciator facia with alarm bell
14. Load manager which measures (current, voltage, kVA & PF) of Enercon/ Equivalent make. (model no EM 3380 or higher with communication)
15. Power factor transducer having 4-20mA output
16. Suitable kVA transducer having pulse & 4-20mA output
17. High speed tripping relay type equivalent to VAJH /3 GEC Alstom make

Breaker trolley and handle for operation to be included in the scope of supply

12.04) Oil Cooled Transformer (11 KV to 415V) with all standard Accessories

Capacity : As per BOQ

Qty : As per BOQ

Type : Oil type, Suitable for outdoor installation, air- cooled

Duty : 11 KV to 415 V

Instruments and controls:
Oil and winding temp. indicator and control, Buchholtz relays, on load tap changer etc.

Accessories : Air breather, conservator, explosion vent, radiator marshalling box etc.

Efficiency : Not less than 98 % at full load.

12.05) DG set with All standard Accessories & Synchronizing Panel

It is proposed to provide the standby power for carrying out essential operation in case of power failure. The DG set as per the quantity and capacity appearing in BOQ shall be considered with AMF system and synchronizing panel. The DG will be selected for continuous duty operation of in. 8 hours. The facility shall be self-contained, and it should be possible to hook up the power supply into the power control canter. The Supplier

should ensure that the DG supply is connected to the essential feeders provided on the PCC. The division on essential and non-essential load distribution on the PCC with isolation breaker will be the responsibility of the Supplier.

Type : Air cooled DG set in acoustic enclose complete with silencer and chimney

Construction : Standard packaged unit

Duty : 430 V ac

Capacity : As per BOQ

QTY : As per BOQ

Instrumentation & Control: Standard as per the IE rules
Rating : The capacity mentioned in the BOQ is KVA electrical

Note:

a. Chimney as per pollution control board norms to be considered in the scope
b. Control panel with suitable rating switchgear to be considered
c. Diesel charging system to be included in the scope of supply

12.06) PCC with two incomers

Type : Suitable for indoor installation with incomer from 1 transformer and 1 from DG

Qty : As per BOQ

Construction : Modular compartmentalized construction and split into two sections with motorized bus coupler

Feeders : Incoming feeders with motorized circuit breakers (with ETU), outgoing feeders up to 800 Amps. with MCCB protection and above 800 Amps. with motorized circuit breakers. Various feeders are as mentioned above

Instruments and controls
: Digital Ammeters & voltmeters for individual feeders. Energy meters wherever required. All controls shall be built- in type. Rigid mechanical and electrical interlocking wherever required

All the ACB & MCCB in PCC shall have Digital MFM with communication facility and all data to be transferred to MIS system for report generation for individual feeders.

12.07) APFC panel with Active Harmonic Panel

REQUIRED QUANTITY : As per BOQ

RATING : Supplier to specify

The Brief Technical Descriptions of major items to be supplied shall be as follows;

1. Load Details

Load Voltage : 3 Phase, 415 V

Load Power : As per Peak load

Type of Connected Load : Linear + Non-Linear inductive type

Load Power Factor :0.85 Lagging

2. Technical Details of APFC Panel

Rated voltage : 415volts

TSC panel rating : Supplier to specify

System Frequency : 50Hz, +/-1Hz

Number of steps : Five (min)

Reactor in series with capacitor: As per design to limit the inrush current

Incoming Switchgear : ACB- suitable rating

kVAR of each branch : Supplier to specify

TSC branch connection: Internal Delta

Ampere rating for selection of AHF shall meet harmonic suppression as per full load.

Overload rating

Current : 20% of the designed value

Voltage : 10% continuous, 15% for 30minutes with 50% duty cycle

Switching device : Thyristor

Control of switching : Auto / Manual override

Tuning : Tuned to avoid the harmonic current to enter in.

Panel Temp. : 50° Maximum

Insulation : 2.5kV rms for one minute

First level protection : HRC fuse

Second level protection: ACB- suitable rating

Type of conductors : Copper

Type of bus bar : Aluminium electrolytic grade

Type of inductor : Gapped Iron Core

Type of Capacitor : Metalized polypropylene (MPP) self-healing type

Fuse : HRC

Controller : Supplier to specify

Protection CT : xxx/1Amp.

Protection PT : 415/8.6Volts

Measurement PT : XXXX / 110 volt (11 kV side)

Measurement CT : XXX / 1amp, 11 kV side, burden 5VA (max)

Cooling : Forced Air

Discharge device on Capacitor:

Residual voltage : 50 volts

Time : 3 minutes

Panel : CRCA with powder coating, with Siemens GRAY colour shade (RAL7032)

Dimensions of panel : Supplier to specify

3. Capacitor Details

Rated voltage : 415

Rated frequency : 50

Dielectric : Polypropylene

Phase : Single

Container : Aluminium

Mounting arrangement : Stud type

Maximum over voltage : 1.2 times

Maximum over current : 1.3 times

Capacitance tolerance : +10%

Maximum ambient temp .: 55Deg

Internal connection : Single phase

Discharge devices : Resistor

Capacitor type : MPP dielectric

Watt losses per unit : <0.2watts / kvar

Unit Kvar Capacity : 10

Protection class : IP – 43

Protection against over voltages & transients: Yes

Protection against harmonics, Stringent harmonic duty

Capacitor : Heavy duty

Capacitor bushing details : Pin type connector

Terminal detail : Two stud at top of the capacitor.

Tests on capacitor**:**

Following tests shall be carried out for selected capacitor;

Routine tests as per IS 2834 / IS 13585.

Visual inspection

Sealing Test

Test for Output & Capacitance

Insulation resistance test.

Voltage test between Terminals.

Voltage Test between terminals & containers.

Test for efficiency of discharge device

Measurement of Tangent of dielectric loss angle (Tan delta)

Type Test

Thermal stability test.

Tan delta & capacitor loss test

Capacitance discharge test.

12.08) MCCs for complete plant

Type : Suitable for indoor installation with a provision for expansion.

Qty : 1 Lot

Feeders : Incoming feeders from both the sections of power control center to MCC for essential loads. All outgoing feeders shall have isolation facility, fuse, contactor, overload relay with, necessary operating controls etc. All feeders above 10 HP shall have Star Delta starter with ammeters.

12.09) Chilled water based Air Conditioning system for MCC room to maintain 26 Deg. C Temp.

Capacity : As per BOQ
Qty : As per BOQ

This shall be a standalone duct able Air conditioning system to maintain 26 Deg. C temp in the MCC room

12.10) Power & Control cables for complete plant

Qty : 1 Lot

All LT power cables shall be weatherproof, PVC sheathed, steel armoured, PVC coated, aluminium conductor cables to be used for load more than 10 HP. For less than 10 HP load, Armoured CU Cable shall be used. Copper cable less than 2.5 shall not be used for power.

For separators and homogenizers & other special machine/equipment, type of cable to be used as per OEM recommendation only

Control Cables

Qty : 1 Lot

All control cables shall be PVC, copper armored cable of suitable rating. Less than 1.5 sq. mm cable shall not be used for power control cable. Please note that all control cable required is

armored type and Supplier strictly follow the same. Deviation shall not be entertained as it is a specific requirement of the purchaser.

12.11) Earthing (power and Electronic) for complete plant

Qty : 1 Lot

To provide earth pits and earthing cables to all sections of the plant with a max. earth resistance of one ohm or as per the regulations of local Electrical Inspectorate.

The earth pits and earthing system of instrumentation, computers and controls shall not share the earthing system of electrical power equipment.

All earthing mains shall be galvanized. The earthing to the equipment will be with the help of PVC coated aluminium cable.

All earthing drawings are to be submitted (for insurance purpose as per safety norms)
Separate Earthing pit to be considered for automation and instrumentation system.

12.12) Perforated GI cable trays

Qty : 1 Lot

These shall be perforated type, heavy duty, inward bend shape, manufactured from mild steel conforming to IS-226 and hot dip galvanized as per IS-2629/BS-729 for laying of cables. Width of cable tray shall be as per the requirement. Height to be minimum 50 mm and thickness of plate shall be 1.5 mm up to 300 mm cable tray width. For cable trays having width more than 300 mm, height to be 75 mm and thickness of plate shall be 2.0 mm. Cable trays shall be of standard lengths of 2.5 M. Necessary accessories of cable trays such as coupler side plates for joining cable trays, bends, riser, inside riser, tee etc. shall also be supplied.

Cable trays shall be of GI perorated type of suitable width as required. Cable tray for automation network/ instrument/signal cables shall be separate from power & control cables.

Note: Supplier to consider top cover for cable trays.

12.13) RCP & JB for electrical system

Qty : 1 Lot

To be installed wherever necessary as per detailed engineering. All the JBs in process areas shall be of SS/Semi-transparent poly carbonate type, IP 67.

12.14) Mics electrical items - GI conduits, rubber mat etc.

Conduits

Quantity :1 Lot

For laying of cables under floor, GI class 'A' pipes shall be used. For laying cable in air whereas cable trays are not being used, GI ‘A' class pipe shall be used. Size of pipe shall depend upon the overall outer diameter of cable to be drawn through pipe. No pipe less than 40 mm dia. shall be used for this purpose.

In milk & milk product handling area conduit, in process / CIP / waterlogged area and wherever required, of SS-304 tubes, shall be used. Drop down conduit from cable tray to individual motor within the plant building in process area shall be of AISI 304. Outside process area & MCC room shall be GI.

Rubber mat

Qty : 1 Lot

To be supplied for complete electrical installation at PCC room as well as for All MCC.

Following safety and electrical items/equipment to be considered in the scope;

1. 33 kV operating rod
2. 33 kV suitable hand Gloves
3. Fire buckets with stand for fire safety in transformer/switch yard
4. Fire extinguisher (CO_2 base) for electrical HT substation, PCC room, MCC room, control room and other strategic area – 15 nos.

Electrical Gloves

Qty : 1 Lot

HT Operating Rod

Qty : 1 Lot

HT Operating Rod provide a safe way to operate a High Voltage Equipment

Fire Bucket

Capacity : As per BOQ

Qty : As per BOQ

Fire Buckets with stand for fire safety in Transformer, Switch Yard, and D.G. Set.

13.0) SS & MS structural Supports

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

All supports inside the plant/corridor & tanker bay shall also be of SS-304 box section (2.5 mm thk. minimum).

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 tanker reception and tanker dispatch area
- SS 304 Collapsible platform and railing for tanker reception, dispatch and CIP bay.
- SS304 structural supports for all product/ CIP/ Utility piping, cable trays/conduits etc. all production area, CIP area, Indoor plant corridor etc.
- Self-supported SS304 platforms for approach of all Indoor product tanks of milk, cream, CIP etc. with staircase and SS railing. 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.

MS (GI) structures for outdoor pipe bridge, silo / tank platforms etc.

- These shall be provided for fabricating platforms, outdoor pipe support on service bridges etc.
- These shall include ISMB, ISMC, MS box section, angles, flats, bars, MS plates, chequered plate, handrails 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 B 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 as covers, platform, partition etc.

Below mentioned areas are to be considered for GI/MS structural work:

Outdoor pipe bridges 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.

SS Dimple plate for platform shall be minimum 1.6 mm thick.

14.0) ETP (Mechanical Work)

Bidder to design the Aerobic and anaerobic combination type ETP for complete dairy effluent treatment. Complete design needs to be submitted for approval before commencing the work in the event of placement of order.

15.0) Erection & Commissioning

Qty : 1 Job

The scope of E & C includes unloading at site, unpacking, shifting, positioning, erection, testing and commissioning of all above items/equipment (from Sr. no 1 to 21) including the following;

A. The Supplier has to carry out the complete erection, testing and commissioning of the Equipment for Milk, Cream Processing & storage, pouch packing, Fat Handling, on turnkey basis.
B. The works shall be carried in the best workman like manner in conformity to the relevant codes of practices of BIS or international standards applicable for Dairy Process, mechanical and electrical installations.
C. While unloading the equipment, Erection, testing and commissioning of Milk processing and utility machinery all the safeties related to men, machinery and material shall be in the scope of the contractor hence every care has to be taken along with necessary insurance coverage till the handing over of the machineries in working conditions to the purchaser.
D. The erection works including the following.
   • shifting of equipment from the unloaded place, decorating, aligning, fixing to foundations, placing on foundation,
   • connecting to the pipelines of product and utilities and installation of piping.
   • Connecting to the electrical power Control Centre, MCC, Power cables, control cables with proper termination and providing of Communication cables, etc. and preparation of single line Diagram etc is part of this job.
   • Starting and commissioning and trail runs.
E. Supplier shall arrange and demonstrate the commissioning & performance trial runs of the entire plant as per the technical rated parameters offered in the technical proposals.
F. During Testing and trial period, necessary operating guidelines and practices should be explained to the operating personnel and shall be trained accordingly.
G. Training of the personnel of purchaser at different stages of assembling, installation and operations etc. should be provided. Service Engineer/key person shall stay for minimum 30 days for assistance and train the Milk Union personnel in running of the plant (after product trials are over).

H. The Statutory Obligations related to various equipment such as DG/Gas generating Set electrical including getting statutory approvals will be part of this job. AND it is the sole responsibility of the turnkey contractor/firm to ensure the said statutory approvals from electrical inspectorate /West Bengal State Electricity Board or any other bodies required to be taken, shall be obtained and produced while commissioning of the Plant. Fees for such approval shall be reimbursed by purchaser on submission of receipt.

Special Notes to Suppliers

1. The successful Supplier shall provide 2 sets of manuals test certificates & drawings.
2. If the manufacturers upgrade their technology or change existing technology, shall ensure to render service and supply spare parts for the existing /supplied, period of minimum 15 Years.
3. Any deviation in the technical specification has to be clearly mentioned and it is the decision of purchaser to accept OR reject.
4. The tender process consisting of Technical Bid and commercial bid.
5. The Prices should not be mentioned in the Technical Bid.
6. A tender, not complying with any one of the above conditions is liable to rejection. Incomplete proposal is liable to be rejected.
7. The tenderers are requested to go through the Terms and Conditions, detailed in this document, before filling out the tender.
8. The Suppliers shall quote in Indian Rupees. The prices are fixed for the contract period.
9. The Layout drawings are attached for reference. Supplier to submit all data mentioned in the "Drawing, data & documentation section" along with the offer failing to which bid shall be considered nonresponsive and shall be rejected without giving any reason thereof.

II. CIVIL WORKS

Bidder to consider civil work related to this Job as per followings:

- **Main plant building PEB Structure : 1470 Sq. Mtr.**
- **Utility Building Area PEB Structure : 294 Sq. Mtr.**
- **Civil Work for Office, Canteen& Store Area of FF : 441 Sq. Mtr.**
- **Electrical Installation : LS**
- **Borewell for water sourcing (2 Nos.) : LS**
- **Raw water Storage Tanks : 1.5 Lakh Litre**
- **Security Cabin & Toilet Block : LS**
- **Road @ 9 mtr. Wide : 130 rmtr.**
- **ETP (Civil Work) : Included**
- **Fire Fighting System : LS**
- **Other civil works related Like Hard Park for dispatch ,Structural and finishing work, Plumbing work , Drainage, Chimney Foundation , Floor Tiles , Wall Tiles,**
- **Domestic electrification work, ETP civil work , Foundation for Equipment ,Aluminium partitions, PVC doors and windows, Main Door Shutters, Road work ,Tanker reception and CIP , Underground tanks for water storage , Firefighting system as per govt. rules and regulations Etc.**

✓ ***Any other civil work deemed necessary as per project requirement are also included in Bidder's Scope.***

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Plants & machineries in-brief

Item Description	Makes
MILK & CREAM RECEPTION, PROCESSING	
SS MILK, CIP & HOT WATER PUMPS	ALFA LAVAL/ GEA/ APV/ FRISTAM / IDMC / ZEUTECH/ EQUIVALENT
PHE TYPE MILK CHILLER / PASTEURIZER	TETRA PAK/ ALFA LAVAL/ KELVION / IDMC / EQUIVALENT
PHE TYPE CREAM CHILLER / PASTEURIZER	ALFA LAVAL / TETRA PAK/ KELVION / IDMC / EQUIVALENT
PHE/THE TYPE WATER & CIP SOLUTION HEATER	TETRA PAK/ KELVION / ZONAM/ HRS /ALFA LAVAL /IDMC/ EQUIVALENT
MILK & CIP HOSES	SAINT GOBIN / BLAUDIECK / GECITECH / MTG
CIP RETURN PUMP (SELF PRIMING)	ALFA LAVAL /APV / GEA / FRISTAM /IDMC
TRI-PURPOSE CENTRIFUGE (SELF CLEANING) & BACTOFUDGE	GEA WESTFALIA / ALFA LAVAL/ TETRA PAK
EPS / PUF INSULATION MATERIALS	FRICK / ICEMAKE / BLUESTAR / BEARDSELL/ EQUIVALENT
SADDLES FOR COLD INSULATION	SUPERTHERM (LLOYD) / BEARDSELL/ EQUIVALENT
PPGI PUF PANEL	FRICK / ICEMAKE / BLUESTAR / BEARDSELL/ EQUIVALENT
RESIN BONDED MINERAL WOOL	LLOYD / UP TWIGA / ROCKWOOL / EQUIVALENT
COLD STORE DOORS & HATCH DOOR	METAFLEX / MIV / EQUIVALENT
MILK SILO AGITATOR (SIDE MOUNTED, SLOW SPEED)	STELZER / NORD / INOXPA/PRG/ EQUIVALENT
POUCH FILLING MACHINES	SAMARPAN / NICHROME / RMC
MILK HOMOGENIZER	NIRO - SOAVI / TETRAPAK /APV
POWDER BLENDER	FRISTAM / ALFA LAVAL / IDMC / ZEUTECH
INSTRUMENTATION, CONTROLS & AUTOMATION	
VFD	SIEMENS / SCHNEIDER / DANFOSS / Allan Bradly / EQUIVALENT
LEVEL TRANSMITTER & INDICATOR	E&H / EMERSON / ANDERSON NEGLE / EQUIVALENT
TEMPERATURE / PRESSURE TRANSMITTER	E&H / EMERSON / ANDERSON NEGLE
CONDUCTIVITY & PH TRANSMITTER	E&H / EMERSON / ANDERSON NEGLE
DENSITY TRANSMITTER	E&H / EMERSON / SIEMENS

RTD	ALTOP / GIC / RADIX
PID CONTROLLER	YOKOGAWA / JUMO / TATA HONEYWELL
FLOW SWITCH	DANFOSS / SWITZER / IFM, GMBH/ ANDERSON NEGLE
LEVEL SWITCH (FLOAT TYPE & VIBRATING FORK TYPE)	E & H, ANDERSON NEGLE , P & F
	E&H / EMERSON / SIEMENS / PUNE TECTROL (ONLY FOR FLOAT TYPE)/ ANDERSON NEGLE /SAPCON
VORTEX / MAGNETIC FLOW METER	E&H / EMERSON / SIEMENS / ANDERSON NEGLE
MASS FLOW METER	E&H / EMERSON / SIEMENS /YOKAGAWA
CONTROL VALVE	SAMSON /DEMBLA/ EQUIVALENT
PRESSURE SWITCH / TEMP. SWITCH / THERMOSTAT	DANFOSS / SWITZER / INDFOSS / EQUIVALENT
PRESSURE & TEMPERATURE GAUGE	GIC / WIKA / WAAREE / EQUIVALENT
DUAL TYPE PRESSURE / TEMP GAUGES	GIC / WIKA/ WAAREE/ EQUIVALENT
LOAD MANAGER / POWER / ENERGY MONITOR	ROCKWELL / SIEMENS / ABB / L&T / CONZERV / SCHNEIDER / EQUIVALENT
PC (PERSONAL COMPUTER)	COMPAQ/HEWLETT-PACKARD/IBM LENEVO/ ACER /DELL/ EQUIVALENT
PLC SYSTEM	SCHNEIDER /SIEMENS /ROCKWELL (ALLEN BRADLEY)
ELECTRICALS	
ELECTRIC MOTORS	SIEMENS / CROMPTON / ABB / EQUIVALENT
AIR CIRCUIT BREAKER	SCHNEIDER / SIEMENS/L&T/ EQUIVALENT
MCCB	SCHNEIDER / SIEMENS/L&T/ EQUIVALENT
CONTACTORS	SIEMENS / SCHNEIDER/L&T/ EQUIVALENT
STARTER OVERLOAD RELAYS	SIEMENS / SCHNEIDER/L&T/ EQUIVALENT
TIMERS ELECTRONIC	SIEMENS / SCHNEIDER/L&T/ EQUIVALENT
SWITCH FUSE UNITS	SIEMENS / SCHNEIDER/L&T/ EQUIVALENT
MCBS	SCHNEIDER / SIEMENS /L&T/HAVELLS/ EQUIVALENT
PUSH BUTTONS	TEKNIC / ABB / SCHNEIDER / GE / ESBEE
INDICATING LAMPS (LED)	TEKNIC / SCHNEIDER / EQUIVALENT
DIGITAL AMMETER & VOLTMETER	CONZERV / MECO / HPL SOCOMEC / RISHABH
ANALOG AMMETER & VOLTMETER	RISHABH / IMP / MECO / AE / EE
DIGITAL ENERGY METER	CONZERV/L&T / HPL SOCOMEC / SIEMENS
PVC CONDUIT & ACCESSORIES	PRECISION / CLIPSAL / P – PLAST / POLYCAB
POWER FACTOR METER	RISHABH / IMP / MECO / AE / CONZERV
CURRENT TRANSFORMER	KAPPA / MECO / AE / IMP / INDCOIL /BHARTI
LT POWER CABLES	POLYCAB / RPG ASIAN / HAVELL'S / KEI / EQUIVALENT
LT COPPER CONTROL CABLES	POLYCAB / RPG ASIAN / HAVELL'S / KEI / EQUIVALENT
SIGNAL & INSTRUMENT CABLE	POLYCAB / ICON /KEI/ HAVELL'S / EQUIVALENT

POWER CAPACITORS	EPCOS / SCHNEIDER / KHATAU JHANKAR / SIEMENS / UNISTAR / EQUIVALENT
APFC RELAY	SCHNEIDER /BELUKE / EPCOS / L&T / PHASITRON/ SIEMENS
CABLE TRAY	INDIANA / MEK / PILCO / ELCON / METALICA PRESSINGS / POWER CONTROLS / SILVER LINE / EQUIVALENT
ISOLATING SWITCHES	SIEMENS / L&T / ABB / SCHNEIDER / EQUIVALENT
HRC FUSES	L&T / SIEMENS / EE / C&S / BUSMANN / GE POWER
PLUG & SOCKET	LEGRAND / CLIPSAL/ SCHNEIDER / BCH / HENSEL
TERMINAL BLOCKS	WAGO / CONNECT WELL / ELMEX
ROTARY SELECTOR SWITCH	KAYCEE / SALZER / L&T / SIEMENS
CABLE GLANDS	COMMET / EX-PROTECTA / DOWELS / BRACKO
CABLE LUGS	DOWELS / COMMET
MECHANICAL INTERLOCK	L&T / SCHNEIDER / ABB /SIEMENS
ELECTRONIC SOFT STARTER	DANFOSS / L&T/ SIEMENS / ALLAN BRADLY / SCHNEIDER / ABB
SERVO VOLTAGE STABILIZER	EMERSON/SUVIK / HI-REL / ASABA/ KRYKARD
UPS	EMERSON-LIEBERT / HI-REL / APC / SUVIK / NUMERIC
SMF BATTERY	YUASA-ROCKET / FURUKAWA / EXIDE
HT VCB	Siemens /ABB / SCHNIEDER / EQUIVALENT
TRANSFORMER	VOLTAMP / ABB/ TRANSFORMER & RECTIFIER/ EQUIVALENT
DG SET	CUMMINS / KIRLOSKAR GREEN / CROMPTION GREAVES / EQUIVALENT
VALVES & PIPES (MS & GI)	
WATER VALVES (BUTTERFLY / BALL)	AUDCO / SAUNDERS / INTERVALVE / BDK / CRESCENT / FESTO / DELVAL / EQUIVALENT
WATER VALVES (DIAPHRAGM)	SAUNDERS / BDK / EQUIVALENT
NON-RETURN VALVE FOR WATER	AUDCO / INTERVALVE / BDK / LEADER
WATER FOOT VALVE	KIRLOSKAR / GG / LEADER
GI PIPES FOR WATER	TATA / JINDAL
MS PIPES FOR AIR, STEAM, CONDENSATE	TATA / JINDAL
NRV FOR AIR / OIL LINE	AUDCO / LEADER
SOLENOID VALVE FOR WATER LINE	DANFOSS / ROTEX / BURKERT / ASCO/FESTO
HOT WATER PIPE/ GLOBE VALVES	AUDCO / SPIRAX / ARMSTRONG, USA / BDK
SS PIPES & VALVES	
SS PIPES	RAJRATNA / RATNAMANI/ RENSA / EQUIVALENT
SS SEAT TYPE PNEUMATIC VALVES (MIX PROOF, TWO WAY & THREE WAY)	GEA TUCHENHAGEN / ALFA LAVAL/ APV/ TETRAPAK / IDMC / CIPRIANI

PNEUMATIC SS BUTTERFLY VALVES	GEA TUCHENHAGEN / ALFA LAVAL/ APV/ TETRAPAK / IDMC/ CIPRIANI
SS MANUAL SEAT & BUTTERFLY VALVES & FITTINGS	ALFA LAVAL / IDMC / EQUIVALENT
AIR COMPRESSORS & AIR LINE FITTINGS	
AIR COMPRESSOR (SCREW)	INGERSOL RAND /ATLAS COPCO / EQUIVALENT
REFRIGERATED AIR DRYER	INGERSOL RAND / KAISER/ ATLAS COPCO / EQUIVALENT
AIR LINES ACCESSORIES	FESTO / SMC / EQUIVALENT
AUTO DRAIN VALVE	ULTRA FILTER / ZANDER/HYDINT
WATER TREATMENT PLANT	
WATER RO PLANT/ SOFTENING	ION EXCHANGE / THERMAX / EQUIVALENT
HYDROFLOW SYSTEM	GRUNDFOS / MATHER & PLATT / EQUIVALENT
REFRIGERATION SYSTEM	
SCREW COMPRESSOR UNIT	MYCOM / YORK / GEA GRASSO / FRICK
EVAPORATIVE CONDENSER	STAR COOLER / THERMAX / FRICK/ EQUIVALENT
WATER PUMPS	KIRLOSKAR/BEACON / WILO / EQUIVALENT
AMMONIA EVAPORATOR AIR COOLER	BLUE STAR/STAR COOLER/EVAPCO / EQUIVALENT
AIR PURGER	FRICK /MANIK / EQUIVALENT
STEAM GENERATOR & OTHER COMPONENTS	
BOILER	THERMAX/ JNM / BALKRISHNA BOILER
STEAM VALVES	AUDCO / JNM/ SPIRAX / ARMSTRONG / BDK / EQUIVALENT
PRS	JNM/ THERMAX/ EQUIVALENT
LABORATORY EQUIPMENT	
SODIUM & POTASSIUM ANALYZER	THERMO SCIETIFIC /ORION / EQUIVALENT
ACIDOMETER	FOSS ELECTRIC / METROHM / EQUIVALENT
PH METER	FOSS ELECTRIC / METTLER / METROHM / EQUIVALENT
MILK SCANNER	FOSS ELECTRIC / PERTEN INSTRUMENT / EQUIVALENT
LAB FURNITURE	GOWARDHANDAS / GODREJ / EQUIVALENT
MISCELLANEOUS ITEMS	
GEARED MOTOR / GEAR BOX	PBL / POWER MASTER / ELECON / IC BAUER/ BON FIGOLIC / EURO DRIVES
HOT WATER-WATER MIXING BATTERY	ARMSTRONG/ SPIRAX/ JN MARSHALL / SWASTIK
STRUCTURAL STEEL	SAIL / TISCO / RINL / IISCO / ESSAR
ELECTRONIC WEIGH BRIDGE (PIT LESS)	METTLER TOLEDO / SARTORIUS / ESSAE
CRATE WASHER /CAN WASHER	VISHWKARMA / SWASTIK / EQUIVALENT
CRATE CONVEYING SYSTEM	VEGA / SWASTIK / OM ENGINEERS / EQUIVALENT
SS STRUCTURAL	TATA / JINDAL

Bidder to take approval from the purchaser in writing if any make is not mentioned in the above list.

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BATTERY LIMITS

Bidder will be responsible to undertake all the works involved in completing the project within the battery limits prescribed below.

STEAM:

Steam generation and Distribution including, PRV, HP & LP Piping, isolation valves, NRV, condensate trap, condensate piping from various equipment to boiler house, hot Insulation, cladding, support, and distribution up to all equipment shall be in the scope of supply.

POWER:

Power shall be made available at Two pole structure. Distribution thereafter including PCC panel, MCC, Power & Control cable (HT & LT), all equipment earthing, cable trays, SS/MS conduits, support, gland termination etc. shall be in the scope of this tender.

RAW WATER & SOFT WATER:

Raw water shall be made available in underground tank. Distribution thereafter including soft water generation, piping, valves, NRV, supports etc. shall be in the scope of this tender.

MILK:

Milk shall be provided by Purchaser at the outlet of tanker and can reception dock. Distribution thereafter including all pipes support, valves, NRV, insulation etc. shall be in the scope of this tender.

CIP CHEMICALS:

CIP chemical shall be made available at the outlet of concentrated lye/acid tanker. Distribution thereafter shall be in the scope of this tender.

COMPRESSED AIR:

Compressed Air shall be tapped from the nearest running header and distribution thereafter including SS pipes, supports, Header, flexible connection, instant fitting etc. shall be in the scope of this tender.

REFRIGERATION:

Generation and distribution of Chilled water including pumping, piping, cold insulation, support, cross over bridge etc. shall be in the scope of this tender.

AUTOMATION:

Plant Automation for Filling, Emptying, CIP (except flow plate for making and breaking route) of complete plant including hardware, software, communication and MIS report generation required is to be considered in the scope. CIP kitchen and pasteurizer, heater and chillers shall have complete operation in auto mode through central control room.

Civil Work:

All type of civil work required for processing and utility shall be in the scope of Bidder.

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BOQ FOR 50 KLPD DAIRY PROJECT AS MENTIONED ABOVE				
	Descrption/ Head	**Capacity**	**Qty**	**UOM**
1	**TANKER MILK RECEPATION & RAW MILK STORAGE**			
	Tanker milk recepation			
1.01	Incoming Can Conveyer (powered) with MS platform	Approx. 14 Meter	1	Set
1.02	Can Tipping Bar	Suitable	1	No.
1.03	Can Washer with incoming & Outgoing Conveyer with lid washer	Suitable	1	No.
1.04	Electronic Weigh Bowl with weigh scale	600 Kg	1	Nos.
1.05	Can Scrubber with Lid Scrubber	500 L	1	Nos.
1.06	SS dump Tank (Single Compartment)	500 L	1	Nos.
1.07	Pipe in Pipe filter for Milk	Suitable	1	Nos.
1.08	Raw Milk Transfer Pump for Can Reception	10 KLPH	1	No.
1.09	Raw Milk Chiller - Can reception	10 KLPH	1	No.
1.10	Can Reception Panel for Milk Unloading & CIP Operation	Suitable	1	Set
1.11	FDA Approved Tanker reception Hose (6 meter) with rubber rings for safety	76mm	1	No.
1.12	SS De-aeration Vessel	150 L	1	No.
1.13	Inline Filter (Pipe in Pipe)	15 KLPH	1	No.
1.14	Milk Transfer Pump (1+1 cold Standby)	15 KLPH	2	Nos.
1.15	Raw Milk Chiller for Tanker Milk	15 KLPH	1	No.
1.16	Burst Rinse system for tanker milk recovery	Suitable	1	Set
1.17	Dummy Manway for Tanker CIP with spray ball	Suitable	2	Nos.
1.18	Tanker CIP forward Hose	38.5 mm	2	Nos.
1.19	Tanker CIP Return Hose	63.5 mm	2	Nos.
1.20	Tanker CIP Return Pump	Suitable	1	No.
1.21	Electronical Weigh Bridge for tanker	50 MT	1	Set
1.22	Tanker Reception Panel for Milk Unloading & CIP Operation (Push Button type)	Suitable	1	Set
	Raw milk storage			
1.23	Raw Milk Silo	15 KL	2	Nos.
1.24	Raw Milk Silo inter connecting platform with railing & approach ladder in SS 304 construction	Suitable	1	Set
1.25	SS railing & ladder railing	Suitable	1	Set
1.26	Bird Cage for raw Milk Silo with openable door	Suitable	2	Nos.

1.27	Milk Transfer pump to Milk Past. (1W+1 Cold Standby)	10 KLPH	1	Nos.
1.28	Inter Silo cum Dispatch Pump	20 KLPH	1	No
1.29	CIP Return Pump for Raw Milk Silo	Suitable	1	No.
1.30	Flow Plates of Product & CIP for Raw Milk Silos	Suitable	1	Set
1.31	SS Pipes, Valves & Fitting for Raw Milk Reception Section	Suitable	1	Lot
2	**MILK & CREAM PROCESSING & STORAGE**			
	Milk & Cream Processing Section			
2.01	Milk Pasteurizer with all standard accessories. Fully automatic with all instruments and pneumatic valves for remote operation through central control room.	5 KLPH	1	Set
2.02	Tri-purpose Cream separator with all standard accessories & Hydro flow system for separator	5 KLPH	1	Set
2.03	Milk Homogenizer with All standard Accessories and hydraulic pressure regulating mechanism with suction & Discharge dampener, Suction pressure transmitter, PLC with OP, All safety instrument and controls	5 KLPH	1	Set
2.04	Seal Cooling system for homogenizer with tank, Chiller and circulation pump	Suitable	1	Set
2.05	Manual Hoist with I beam for separator bowl lifting	2 MT	1	Set
2.06	Pasteurizer Milk Storage Tank	15 KL	2	Nos.
2.07	CIP return pump for Past. Milk Storage tank	Suitable	1	No.
2.08	Milk Transfer Pump to HMST Line -1	20 KLPH	1	No.
2.09	Milk Transfer Pump to HMST Line -2	20 KLPH	1	No.
2.10	Milk Transfer to Curd/Lassi/Paneer Section	5 KLPH	2	No.
2.11	Inter Silo cum Dispatch cum re pasteurization Pump for Past Milk with VFD	30 KLPH	1	No.
2.12	Raw/Past Milk Dispatch Chiller	30 KLPH	1	No.
2.13	Flow Plate of Product & CIP for Past. Milk Silo	Suitable	1	Set
2.14	SS Pipes, valves & Fittings for complete section	Suitable	1	Lot
2.15	Raw Cream Storage tank	2 KL	1	No
2.16	Raw Cream transfer pump to cream pasteurizer	1.5 KLPH	1	No.
2.17	Cream pasteurizer with all standard accessories, Fully automatic with all instruments & valves for remote operation through central control room	1.5 KLPH	1	Set
2.18	Pasteurized Cream Storage Tank	2 KL	2	Nos.
2.19	Cream Transfer pump to Cream Dispatch/Raw Milk Silo/Milk Past balance tank	1.5 KLPH	1	No
2.20	CIP return pump for raw & past cream storage tank	Suitable	1	No
2.21	Flow Plate of Product & CIP for raw & past cream storage tanks	Suitable	1	Set
2.22	SS Pipes, valves & Fittings for complete section	Suitable	1	Lot
	Milk storage section			
2.23	Horizontal Milk Storage Tank for Pouch Milk	10 KL	3	Nos.
2.24	PHE for rechilling of Pouch Packing Milk in milk up line	10 KLPH	2	Nos.

2.25	Inline Filter (Pipe in Pipe) for HMST outgoing line	Suitable	2	Nos.
2.26	Flow plate of Product & CIP for HMST section	Suitable	1	Lot
2.27	CIP return pump for HMST Section	Suitable	1	Lot
2.28	SS Pipes, valves & Fittings for complete section	Suitable	1	Lot
3	**CURD & LASSI PROCESSING**			
	Curd & Yoghurt Processing			
3.01	SMST for curd/Paneer milk storage	5 KL	2	Nos.
3.02	Powder Blending System with Table mounted hopper and shear & booster pump with accessories	500 Kg/hr	1	Set
3.03	PHE with Circulation for SMST	5 KLPH	1	No.
3.04	Milk Transfer Pump to Curd Pasteurizer	2 KLPH	1	No.
3.05	Curd Pasteurizer	2 KLPH	1	Set
3.06	Curd Milk Homogenizer	2 KLPH	1	Set
3.07	Past. Curd Milk Storage tank	5 KL	2	Nos.
3.08	Milk Transfer Pump to Curd Milk Heater	3 KLPH	1	No.
3.09	CIP return Pump for SMST tanks & Past. Curd Milk Storage Tanks	Suitable	1	No.
3.10	Curd Milk heater (4-45 Deg°C) with all standard Accessories, instruments, pneumatic valves and automatic operation from the control room	3 KLPH	1	Set
3.11	Curd Inoculation cum Balance tank	1 KL	2	Nos.
3.12	Curd Setting tank	2 KL	3	No.
3.13	Sugar mixing system	500 Kg/hr	1	Set
3.14	Mixing tank for sugar, flavour & fruits	500 L	3	Nos.
3.15	Circulation pump with chiller	5 KLPH	1	No.
3.16	Lassi transfer pump to packing machine	Suitable	1	Set
4	**MILK, CURD, LASSI PACKING**			
4.01	Crate washer for Curd	1200 Crate/Hr	1	No
4.02	Manual two tier crate conveying system for empty & filled crate up to incubation room and cold store	Suitable	1	Set
4.03	Detergent based Crate washer with pre-cleaning, air drying attachment and crate twister	1200 Crate per hours	1	Set
4.04	Leakey Pouch cut open tank (500 L, SS 304 Insulated) with transfer pump and PHE type chiller with CIP facility	Suitable	1	Set
4.05	High Speed Packing Machines for Milk Packing	10000 PPH	2	Nos.
4.06	5/6 Liters FFS packing machine	720 PPH	1	No.
4.07	Curd FFS Packing Machine	5000 PPH	1	Nos.
4.08	Rotary Curd Cup Filling Machine with All standard Accessories, Outgoing conveyor & Inkjet Printer including change over parts for 200 & 400g & Filling nozzle for Lassi	2400 Cup /Hr	1	No.
4.09	SS trolley for cup curd packing	Suitable	20	Nos.
4.10	Curd Incubation Room with Electrical heating system	6 x 4.5 x 3.5 Meter	1	Set

4.11	Curd Blast room with insulation panel, Standalone freon based refrigeration system, 1 nos of manual sliding doors and other standard accessories. Product to be cooled from 45 Deg. C to 2 Deg. C in 2 hours	6x 6 x 3.5 Meter	1	Set
4.12	SS Pipes, valves & Fittings for complete section	Suitable	1	Lot
5	**Paneer Processing & Packing**			
5.01	Paneer milk Heater with all standard Accessories with regeneration section including all the instruments for automatic operation from the central control room (4-95-85 Deg C) with 10 Min holding coil	1 KLPH	1	Set
5.02	Paneer Vat (insulated) with CIP & Dosing nozzle rod	500 L	3	Set
5.03	Citric Acid Dosing tank (Insulated Jacketed) with agitator and temp. control valve and controller	1000 L	1	Set
5.04	SS working platform for paneer vat and dosing tanks	Suitable	1	Lot
5.05	Weigh collection trough	Suitable	1	No
5.06	Paneer hoops (in SS construction)	Suitable	50	Nos.
5.07	Pneumatic paneer press with 4 stations with all standard Accessories, pneumatic switches, FR unit, timers and whey collection tray	Suitable	1	Set
5.08	Paneer block cooling tank	2 KL	1	Nos.
5.09	Chilled Water circulation pump with filter and UV light treatment	5 KLPH	1	Nos.
5.10	Chiller for dipping tank	5 KLPH	1	Nos.
5.11	Pasteurized Chilled water storage tank	5 KL	1	no
5.12	Paneer block drying tunnel with high speed fan, SS enclosure and straight through conveyer	Suitable	1	Set
5.13	Paneer block cutting machine for 200/500/1000 g block	Suitable	1	Nos.
5.14	Double chambered vacuum packing machine	Suitable	1	No
5.15	Whey transfer pump to whey storage tank	2 KLPH	1	no
5.16	Raw Whey Storage tank (insulated)	3 KL	1	Nos.
5.17	Whey transfer pump to paneer milk heater and chiller	1 KLPH	1	No
5.18	Double section whey Chiller with cooling tower water section & Suitable Capacity cooling tower with circulation pumps	1 KLPH	1	No.
5.19	Chilled whey Storage tank	5 KL	1	No
5.20	Whey dispatch pump	10 KLPH	1	No.
5.21	control panel for local operation of paneer section	Suitable	1	Set
5.22	SS Pipes, valves & Fittings for complete section	Suitable	1	Lot
6	**RECONSSITUTION & RINSE MILK RECOVERY**			
6.01	Recon. Milk Preparation cum Storage Tank	5 KL	1	Nos.
6.02	Powder Blending System with Table mounted hopper and shear & booster pump with accessories	500 Kg/Hr	1	Set
6.03	PHE type Chiller for recon milk chilling in recirculation mode	5 KLPH	1	No.
6.04	Recon. Milk Transfer pump to Raw Milk silo, curd milk storage tank & past Balance Tank	5 KLPH	1	No.

6.05	CIP Return Pump for Recon. Tanks	Suitable	1	No.
6.06	Flow Plate of Product & CIP for Reconstitution Section	Suitable	1	Set
6.07	SS Pipes, Valves & Fitting for Reconstitution Section	Suitable	1	Set
6.08	Balance tank for rinse milk recovery system	500 L	1	No.
6.09	Milk circulation pump	5 KLPH	1	No.
6.10	Rinse Milk Chiller	5 KLPH	1	No.
6.11	Rinse Milk Storage tank	5 KL	1	No.
6.12	Rinse Milk Transfer Pump & Magnetic Flow Meter	10 KLPH	1	No.
6.13	Flow Plate for Product & CIP for rinse milk recovery system	Suitable	1	No.
6.14	SS Pipes, Valves & Fitting for complete section	Suitable	1	Lot
7	**AUTOMATIC CIP KITCHEN (3 CKT)**			
	Conc. Lye & Acid Storage			
7.01	Conc. Lye unloading pump	10 KLPH	1	No.
7.02	Conc. Acid unloading pump	10 KLPH	1	No.
7.03	Concentrated Lye Storage tank	5 KL	1	No.
7.04	Concentrated Acid Storage tank	5 KL	1	No.
7.05	Acid & Lye Dosing system for process & fermented CIP	Suitable	2	set
7.06	SS Platform for CIP Kitchen	Suitable	1	Lot
7.07	Pneumatic Valves for conc. Lye and acid transfer	Suitable	1	Lot
7.08	SS Pipes, valves & Fittings for complete section	Suitable	1	Lot
	Process CIP Kitchen			
7.09	Lye Tank	8 KL	1	No.
7.10	Acid Tank	8 KL	1	No.
7.11	Hot Water Tank	8 KL	1	No.
7.12	Recuperation Tank	8 KL	1	No.
7.13	Fresh Water tank	8 KL	1	No.
7.14	Sterilization tank	500 L	3	Nos.
7.15	Recirculation pump for lye & Acid	3 KLPH	2	Nos.
7.16	CIP forward pump	10 KLPH	3	Nos.
7.17	CIP Heater (THE)	15 KLPH	3	Nos.
7.18	Duplex filter for CIP return line	15 KLPH	3	Nos.
7.19	SS Platform for CIP Kitchen	Suitable	1	Lot
7.20	Flow Plate of CIP forward & Return Circuit	Suitable	1	Lot
7.21	SS Pipes, valves & Fittings for complete section	Suitable	1	Lot
	Fermented CIP Kitchen			
7.22	Lye Tank	3 KL	1	No.
7.23	Acid Tank	3 KL	1	No.
7.24	Hot Water Tank	3 KL	1	No.
7.25	Recuperation Tank	3 KL	1	No.
7.26	Sterilization tank	500 L	2	Nos.
7.27	Recirculation pump for lye & Acid	5 KLPH	2	Nos.
7.28	CIP forward pump	5 KLPH	2	Nos.

7.29	CIP Heater (THE)	10 KLPH	2	Nos.
7.30	Duplex filter for CIP return line	10 KLPH	2	Nos.
7.31	SS Platform for CIP Kitchen	Suitable	1	Lot
7.32	Flow Plate of CIP forward & Return Circuit	Suitable	1	Lot
7.33	SS Pipes, valves & Fittings for complete section	Suitable	1	Lot
8	**SS pipes, valves & Fittings**			
8.01	Control valves 2 way & 3 Way	Suitable	1	Lot
8.02	Manual gauges for temp, pressure etc	Suitable	1	Lot
8.03	SS pneumatic valves (2 way/3 Way / Butterfly) for complete plant	Suitable	1	Lot
9	**Steam generation & distribution (2x1.15 TPH)**			
9.01	Gas/LDO Fired Boiler (2x1.15 TPH) with All standard Accessories, maintenance platform, LDO storage tank (2x10 KL), LDO day oil tanks, LDO ring main system, economizer, APH ,Electrical control panel, Chimney, RO plant with dosing system for boiler feed water etc.	1.5 TPH	2	Set
9.02	Automatic PID based PRS with PT and I/P converter for 10.5 -3.5 Bar duty with islolation, bypass and Steam trap	Suitable	1	Set
9.03	Steam pipes, valves & Fittings for complete plant (HP & LP) with insulation	Suitable	1	Lot
9.04	Condenate pipes, valves & Fittings for complete plant with insulation including min. 3 nos. of condensate transfer pumps	suitable	1	Lot
10	**Chilled Water Generation & Distribution (100 TR x 2 Comp.)**			
10.1	Reciprocating Ammonia compressors with All Standard Accessories with VFD and suitable rating motor with required instruments and controlls	100 TR	2	Lot
10.2	New power cum control panel for refrigeration system	Suitable	1	No.
10.3	New IBT with all standard accessories	100 TR	1	Set
10.4	Evaporative Considenser with pumping system	Suitable	1	Nos.
10.5	PHE chiller for return line	Suitable	1	set
10.6	Ammonia Pipes, valves & Fittings with puff insulation	Suitable	1	Lot
10.7	Chilled Water pipes, valves & Fittings with puff Insulation	Suitable	1	Lot
10.8	First charge of ammonia & lubrication	Suitable	1	Lot
10.9	Safety Equipment for Refrigeration Plant	Suitable	1	Lot
10.10	Ammonia Detection System	Suitable	1	Set
11	**Comp. Air Generation & Distribution**			
11.1	Screw type Air compressor (Air cooled) with , Oil Filter, VFD driven with air duct for exhaust and all standard accessories	50 CFM	2	Set
11.2	Air Receiver with All standard Accessories including inlet/outlet valves, automatic drain valve, pressure gauge etc	Suitable for above	2	Nos.
11.3	Compressed Air SS pipes, valves & Fittings for complete plant	Suitable	1	Lot
12	**ELECTRICAL HT, PCC, MCC AND DISTRIBUSTION**			
12.1	Two Pole Structure	Suitable	1	Set
12.2	HT cable from Two pole structure to HT breaker & HT breaker to	Suitable	1	Lot

	Transformer			
12.3	HT Panel with suitable 1 no of incomer and 1 no of out going feeder and one HT breaker (outdoor type at two pole structure with all standard Accessories and UV relay	Suitable	1	set
12.4	Oil Cooled Transformer (11 KV to 415V) with all standard Accessories	1000 KVA	1	set
12.5	DG set with All standard Accessories & Synchronising Panel	500 KVA	1	set
12.6	PCC with two incomer	Suitable	1	Set
12.7	APFC panel with Active Harmonic Panel	Suitable	1	set
12.8	MCCs for complete plant	Suitable	1	Lot
12.9	Chilled Water based Air Conditioning system for MCC room to maintain 26 Deg. C Temp.	Suitable	1	set
12.10	Power & Control cables for complete plant	Suitable	1	Lot
12.11	Earthing (power and Electronic) for complete plant	Suitable	1	Lot
12.12	Perforated GI cable trays	Suitable	1	Lot
12.13	RCP & JB for electrical system	Suitable	1	Lot
12.14	Mics electrical items - GI conduits, rubber mat etc	Suitable	1	Lot
13	**SS & MS Structural Supports**	**Suitable**		
14	**ETP (Mechanical Work)**	**Suitable**		
15	**Erection & Commissioning**			
16	**Civil Work**			
16.01	Main Plant Building with civil, Finishing and plumbing work	1470	SQM	
16.02	Utility Building with civil, PEB, finishing and plumbing work	294	SQM	
16.03	Office, Canteen & Store area of FF	441	SQM	
16.04	Dispatch dock and hard park	150	SQM	
16.05	Internal Electrification	As per req		
16.06	Borewell for water sourcing (2 nos)	As per req		
16.07	Raw Water Storage tanks	1.5 Lakh Liters		
16.08	Security Cabin & toilet block	As per req		
16.09	Road @ 9 mtrs wide	130 rmt		
16.10	ETP (Civil Work)	As per req		
16.11	Fire Fighting System	As per req		
16.12	Any other work deemed necessary for complete system	As per req		

(Dr. Gouri Shankar Koner)
Managing Director
W.B.L.D.C. Ltd.

APPLICATION FORMAT
(FORM – I)

(To be furnished in the Company's Official Letter Head Pad with full Address with Contact No., Telephone No., FAX No., e-mail address, Website etc.)

To
Managing Director
West Bengal Livestock Development
Corporation Limited,
LB-2, Sector-III, Salt Lake City,
Kolkata – 700 106.

Sub: "*e* -Tender on **Establishment of a New Milk Processing & Milk Products Plant at Matigara Himul Campus, Darjeeling-734010, West Bengal on Turnkey Basis during the year 2024-2025".**

Ref: NIT No: WBARD/WBLDC/NIT-728e/2024-25 Date of Issue: 19/07/2024

Dear Sir,

With reference to your NIT under reference, I am/we are furnishing my/our rates tendered for as per your specification, terms & conditions.

Should this tender be accepted, the work shall be completed within stipulated period from the date of work order.

I/We further declare that I/we have inspected the site and are fully conversant with all aspects of the site and appraised the condition of the site in regards to the execution of this contract.

I / We understand that: -

a) Tender Inviting and Accepting Authority can amend the scope & value of the contract bid under this NIT.
b) Tender Inviting and Accepting Authority reserve the right to reject any tender without assigning any reason.

I/We also agree that the decision of the Managing Director, West Bengal Livestock Development Corporation Ltd. in all matters in respect of this tender will be final & binding on me.

Yours faithfully,

Date: Signature & office seal:

Name of the Firm:

Address with PIN:

DECLARATION BY THE TENDERER

(FORM-II)

(To be uploaded under Company letter head with full address, phone no., mail id etc., duly signed & sealed)

I/We have inspected the site of work and have made myself/ourselves fully acquainted with local conditions in and around the site of work. I /We have carefully gone through the Notice Inviting e-Tender and other tender documents mentioned therein along with the scope of work. I/We have also carefully gone through the 'Priced schedule of Probable Items and Quantities'.

I/We must have *a licensed electrical contractor (or executed MOU) with having supervisor SCC relevant parts, readily present at work site during the execution of electrical works after accepting the Award of Contract (AOC)*

My/Our tender is offered taking due consideration of all factors regarding the local site conditions stated in this Detailed Notice Inviting e-Tender to complete the proposed construction as per drawings referred to above in all respects.

I/We promise to abide by all the stipulations of the contract documents and to carry out and complete the work in due time as mentioned in Award of Contract to the full satisfaction of the Engineer-In-Charge, ***Otherwise necessary Clauses as per rules will be imposed on me/us .***

I/We also agree to procure tools and plants, at my/our own cost required for the work.

Signature & Seal of the Bidder
with Date

Certificate from Chartered Firm

(To be furnished in the Chartered Firm Official Letter Head Pad with full Address with Contact No., Telephone No., FAX No., e-mail address, Website etc.)

(FORM – III)

This is to certify that I/We have examined the audited Balance Sheet & P/L accounts and other records of M/S ..... having its official address at ..... It is also certified that Annual Turnover of the firm for the Financial years 2021-22, 2022-2023 & 2023-2024 are Rs.....lakh.,Rs.....lakh. & Rs.....lakh respectively (as per P/L accounts & Balance Sheet of the firm submitted)

Signature of the Chartered Firm with Registration No

Countersigned

Signature of the authorized signatory (bidder)

Affidavit Proforma

(On Non Judicial Paper worth Rs. 100/-)

(FORM – IV)

(Sworn before the Notary Public / Judicial Magistrate/Executive Magistrate on or after the date of publication of the Quotation Notice)

I, Sri/Smt. …… the Managing Director/Proprietor (etc.) of the Firm. ,…… (Name of the firm)

At (address)……..…

P.O… ……

P.S……Dist……

do hereby solemnly affirm and declare as follows:

1. That I have not ever been convicted of any offence making myself liable to be disqualified for any work of Govt. or Govt. undertaking Organization /Institution in the State of West Bengal or other State or States.

2. That no case is pending against me or against my firm in any criminal court of law in the State of West Bengal or other State or States .

3. That my firm is not debarred/blacklisted as a whole or part thereof at present by any Govt. or Govt. undertaking Organization / Institution in the State of West Bengal or other State or States of India.

4. That, I also declare that if any information subsequently found incorrect or false will it automatically render the quotation submitted by me cancelled and make me liable for penal/legal action as per law of the country.

5.That I do further affirm that the statements made by me in this quotation are true to the best of my knowledge and belief and all the documents attached are genuine & correct.

6. That I promise to abide by all the stipulations of the contract documents and to carry out and complete the work in due time as mentioned in Award of Contract to the full satisfaction of the Engineer-In-Charge, ***Otherwise necessary Clauses as per rules will be imposed on me/us***

Signature of the Deponent(s).

Name in Block letters :

Designation :

(FORM-V)

(To be furnished in the Official Letter Head of Firm/Bidder with full Address with Contact No., Telephone No., FAX No., e-mail address, Website etc.)

WORKING (CREDENTIAL)/ BID ACCEPTING DETAIL (Mandatory)

1. Name of Applicant:

2. List of similar type of work completed / ongoing:

Description of Work	Place & State	Contract No & date	Name of Address of employer	Value of contract (Rs. In Lakh)	Stipulated period of completion	Value of works remaining to be completed (Rs. Lakhs)*	Anticipated date of Completion
1	2	3	4	5	6	7	8

N.B : Suppression of any fact regarding work-in-hand will be liable for non-responsive of bid

Note :Copy of Work Order or Completion Certificate from the employer to be attached.

Signature of applicant including title and capacity in which applicant is made

CHECK LIST (FORM – VI)

Information about Bidders under Company Letter-Head (To be uploaded with the Technical Bid)

Sl.	Description	Particulars
1	Name of the Firm	
2	Registered Address with PIN, Phone No, Fax No. E-mail address etc. Sole owner or Partnership Firm/Company	
3	Name of the Person authorized to enter into & execute contractual agreement	
4	Earnest Money Transaction slip, whether uploaded, if not, Exemption Certificate to be uploaded	
5	Application Form as per FORM-I whether uploaded.	
6	Self-declaration as per FORM-II whether uploaded.	
7	Original PAN Card whether uploaded.	
8	Original Prof. Tax Clearance Cert./Paid Challan (valid up to 31/08/2024) whether uploaded	
9	Original GST registration Certificate whether uploaded.	
10	IT returns of **2022 – 2023 Financial year** whether uploaded.	
11	Trade License / Certificate of Incorporation valid up to 31/08/2024 whether uploaded	
12	Credential of similar nature of work whether uploaded.(FORM-V)	
13	P.F. & E.S.I. Registration Certificate / Declaration whether uploaded.	
14	Certificate from Chartered Firm in the official pad whether uploaded. (The agency / company should have minimum annual turnover of Rs. 50 Crore) (FORM-III)	
15	Audited balance sheet for the last 3 years whether uploaded.	
16	The Bidder shall not be under a Declaration of Ineligibility for corrupt or fraudulent practices or blacklisted with any of the Government Agency whether uploaded. (FORM-IV)	

Signature & Seal of the Bidder with Date

(BANK GUARANTEE SAMPLE FORMAT)

To,
W.B.L.D.C Ltd. LB-2, Sector-III
Salt Lake City
Kolkata- 700-106

Tender Ref. No: NIT No: WBARD/WBLDC/NIT-728e/2023- 24 dt.: 19/07/2024

At request of our Client _____ having its Registered Office at _____ (hereinafter called the supplier) who has accepted the tender, for "**e -Tender on Establishment of a New Milk Processing & Milk Products Plant at Matigara Himul Campus, Darjeeling-734010, West Bengal on Turnkey Basis during the year 2024-2025** " with reference to the Offer letter **(Memo No.: _____; Dated: _____)**. The supplier has requested us for a performance guarantee of **Rs. _____ (Rupees _____) only** (Including Tax, Insurance and Packing).

We _____ **BANK** having its branch office _____ situated at _____, hereby agree as follows:

In the event of the supplier failing to perform their obligations under the contract for any reason what-so-ever we shall pay without any demur a sum of **Rs._____ only**. Your receipts for the sum claimed accompanied by your statement that the contractor failed comply with contract terms notwithstanding any contestations by the supplier or any other party.

Unless a demand or claim is made in writing by you to us under this guarantee and reaches us on or before due date, all our obligations hereunder shall cease and we shall not entertain any claim after the due date _____.

In issuance of said Bank Guarantee our guarantee is unconditional and valid in your favor until _____ including the mailing period. We indemnify you against any loss or damage whatsoever and the same will be remitted as per your advices.

Notwithstanding anything contained hereinabove, our liability under this guarantee is restricted to _____ and will remain in full force up to _____. All your rights under the said guarantee shall be forfeited and we shall be relieved and discharged from all liabilities hereunder unless a written claim for payment under this guarantee is lodged on us within zero months from the date of expiry of the guarantee i.e. on or before _____, irrespective of whether or not the original guarantee is returned to us.

Notwithstanding anything contained under the said BG

1. Our liability under this Bank Guarantee shall not exceed Rs._____(Rupees _____) only.
2. This Bank Guarantee shall be valid up to _____ 2024.
3. We are liable to pay to guarantee amount or part thereof under this Bank Guarantee only if you serve upon us a written claim or demand on or before _____, 2024.

Place: _____

Date: _____

PROFORMA FOR AGREEMENT OF CONTRACTUAL CONTRACT

This Agreement is signed and executed on this …… day of……., 2024 At Kolkata.

BY AND BETWEEN

West Bengal Livestock Development Corporation Limited, A Company registered under the Companies Act, 1956 and having its registered office at LB-2, Sector-III, Salt Lake City, Kolkata – 700106 represented by its Managing Director unless his rights and obligation relating to the objects and purports of these presents are delegated, to any other officer(s) of WBLDCL hereinafter referred to as the **First Party** (which expression shall, unless excluded by or repugnant to the context, means and includes his successors, representatives, permitted assignees, liquidators and administrators) of the ***ONE PART*.**

A N D

……., a company registered under the Company's Act/a partnership firm/Proprietorship Firm (delete whichever is not applicable) having its Registered Office at …… represented by its …… unless his rights and obligation relating to the objects and purports of these presents are delegated, to any other officer(s) of…… hereinafter referred to as the **Second Party** (which expression shall, unless excluded by or repugnant to the context, means and includes his successors, representatives, permitted assignees, liquidators and administrators) of the ***OTHER PART*.**

WHEREAS the **First Party** is desirous that the work of **"e -Tender on Establishment of a New Milk Processing & Milk Products Plant at Matigara Himul Campus, Darjeeling-734010, West Bengal on Turnkey Basis during the year 2024-2025 "** wanted to execute the said work and for the purpose floated open Tender on line.

A N D

WHEREAS the **Second Party** offered his price against the said Tender and being eligible, his Tender having been accepted agreed to execute and complete the said work as detailed in the tender document along with bill of quantities and all other conditions.

Now, therefore, this agreement witnessed as follows:-

That the word and expression shall have same meanings as are respectively assigned to them in the general condition of the contract hereinafter referred to.

That the **Second Party** shall abide by all statutory obligations and payment statutory dues as are obligatory on the part of the **Second Party** and that any failure on his part if attracts any liability on the **First Party** the **Second Party** will, on intimation from the **First Party**, immediately compensate the same.

If any dispute or question arises any time between the parties about the rights and liabilities of each of them relating to the terms and conditions stated hereinabove shall unless and otherwise mutually resolved between the parties, the aggrieved party may refer the matter to the sole Arbitrator as may be appointed by the Govt. of West Bengal, ARD Department on reference from either Party for arbitration and the decision of the Arbitrator shall be final and binding on both the parties.

In witnesseth whereof:

The parties have set and subscribed their hands on this Agreement on the day, month and year first written.

Contractor	Managing Director. W.B.L.D.C.Ltd.
S e a l	*S e a l*
Witness and address: –	Witness and address: –
1.	1.
2.	2.