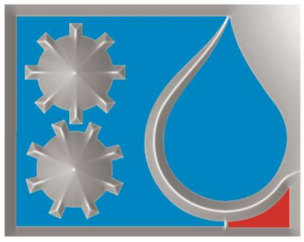


IDMC®
LIMITED

124-128, GIDC Estate, Vithal Udyognagar- 388121,
Anand District, Gujarat, India,
Tel: +91-2692-220521
Website: http://www.idmc.com

Tender Document

for
Design, Engineering, Manufacturing, Supply,
Installation, Testing, Commissioning & Acceptance of

Pack-A
Processing Line to manufacture
Frozen French Fries at a minimum capacity of 3000 kg/hr

Pack-B
Processing Line to manufacture
Potato Flakes at a minimum capacity of 1100 kg/hr

for
MDFVPL Project, Itola, Gujarat, India

INDEX

1. Invitation for Bid

Enquiry Reference no.: IDMC/ Sourcing & VD/ 2025-26/ Enquiry/ 348 dated 12.11.2025

IDMC Limited invites sealed bids from original equipment manufacturers (OEMs) for Design, Engineering, Manufacturing, Supply, Installation, Testing, Commissioning, acceptance of Processing Line to manufacture Frozen French Fries at a minimum capacity of 3000 kg/hr and Potato Flakes at a minimum capacity of 1100 kg/hr for MDFVPL Project, Itola, Gujarat, India as per details given below:

Description of Tender	Design, Engineering, Manufacturing, Supply, Installation, Testing, Commissioning & Acceptance of Pack-A Processing Line to manufacture Frozen French Fries at a minimum capacity of 3000 kg/hr (mention imported & indigenous item separately) Pack-B Processing Line to manufacture Potato Flakes at a minimum capacity of 1100 kg/hr (mention imported & indigenous item separately)
Qty	Pack-A : 1 Job Pack-B : 1 Job
Estimated Cost	Pack-A : INR 44.0 CRORE Pack-B : INR 36.0 CRORE
Completion period (For the complete plant (design, manufacturing, supply, installation, testing, and commissioning))	10 months from the date of the Letter of Intent (LOI)/Purchase Order (PO) whichever is earlier
Earnest Money Deposit (EMD)	Not applicable
Mode of Tender	a) The bid document will be available in the website at www.idmc.com (click procurement) OR https://www.ncdfiemarket.com/index.php/idmc and can be downloaded and used as tender document for uploading the offer. b) eProcurement at NCDFI eMarket portal, considering online open tender of IDMC with single stage two bid envelope system (Part I- Techno-commercial Bid and Part II- Price Bid) through www.idmc.com (click procurement) OR

	https://www.ncdfiemarket.com/index.php/idmc/ and can be downloaded and used as tender document for uploading the offer. The intending bidders are required to submit their offer electronically through NCDFI eMarket portal. No physical tender/email is acceptable.
Query/support related to online portal during submission of bid	Mr Sachin Chaudhary +91 99786 28169 Mr Parth Parikh +91 70435 31188
Warranty Period	12 months from the date of successful commissioning, product trial & acceptance of the plant
Date of uploading of enquiry on NCDFI eMarket portal	10.12.2025
Last date, time and place for receipt of bids/ offers	15.01.2026 (Up to 1700 hrs IST)
Bid submission currency	INR/ USD /EURO
Conversion Rate (USD / EURO to INR)	1 USD = 90 INR, 1 EURO = 105 INR (Reference date 10.12.2025)
EPCG (for information of bidders)	Imported items under EPCG

Note : The bidder may quote either both the Packs or Pack-A / Pack-B .

1.1. The bid document can be downloaded by registration from the link:
www.idmc.com (click procurement) OR
https://www.ncdfiemarket.com/index.php/idmc

1.2. Enquiry document:

Instructions to bidders, General conditions of contract, Special conditions of contract, Form of agreement, Acceptable forms of bank guarantees, Schedule of Requirement and technical specifications for all the items of works are indicated in this enquiry document.

1.3. Clarification on the bids:

The bidders may submit their queries / clarification if any through email by 31.12.2025 on email id – tenders_mech@idmc.com for consideration of the purchaser.

1.4. Opening of offers:

Bids will be opened by the tender opening committee of IDMC based on the offer received on the NCDFI Portal, bidders' presence is not required.

1.5. Offer validity:

The bid shall remain valid for a period of 120 (One hundred twenty) days from the date of bid closing.

1.6. Drawings:

Bidders to submit preliminary GA /dimensional drawing along with the offer.

1.7. Rights reserved by IDMC Limited:

IDMC may evaluate & consider bids both technical as well as financially beneficial to the project. It reserves the right to accept and or reject any or all the bids.

2. Instructions to bidders

(a)	Tender/Event Ref. No.:	IDMC/ Sourcing & VD/ 2025-26/ Enquiry/ 348 dated 12.11.2025
(b)	Transaction Fee Payment of transaction fee by NEFT/ RTGS in favor of IDMC Limited (refer clause No.-4 of Annexure-A)	Not Applicable
(c)	Incidental charges (in land) in case documents are to be sent by courier/post	Not Applicable
(d)	Event Start Date	10.12.2025
(e)	Event Close Date & time	15.01.2026, 17.00 Hours
(f)	Last Date and time for bid submission	15.01.2026, 17.00 Hours
(g)	Time and date of opening of bids	
	Part I – Techno-commercial bid	Bids will be opened by the tender opening committee of IDMC based on the offer received on the NCDFI Portal, bidders' presence is not required.
	Part II – Price bid	May be communicated later to responsive /technically qualified bidders who have accepted all techno commercial terms and conditions
(h)	Opening of bid	ONLINE at web portal (in presence of tender opening committee of IDMC)
(i)	Address for communication	IDMC Tender committee 124-128 GIDC Estate Vithal Udyognagar- 388121 Dist.- Anand (Gujarat) Tel: +91 2692 -220521 Email: tenders_mech@idmc.com
(j)	Time of completion	10 (Ten) Months for overall completion (from the date of notification of award of Contract (LOI)/ Purchase Order) whichever earlier
(k)	Amount of EMD	Not Applicable
(l)	Date and time for receipt of EMD. The EMD in original to be submitted to communication address as stated above in clause (i)	Not Applicable
(m)	Price Basis (Incoterm)	For Imported items - CFR- Indian Port (Mundra / Nhava-sheva) For Indigenous - FOR MDFVPL Project, Itola,

		Gujarat, India
(n)	Packing & forwarding	In Bidder scope
(o)	Freight	For Imported items - CFR- Indian Port (Mundra / Nhava-sheva) For Indigenous items - FOR MDFVPL Project, Itola, Gujarat, India
(p)	Transit Insurance (Warehouse to warehouse)	For Imported items - Purchaser Scope For Indigenous items - FOR MDFVPL Project, Itola, Gujarat, India (Unloading at project site in IDMC Scope)
(q)	All applicable custom clearance, duties & Taxes in India	In IDMC scope

2.1. Eligible bidders:

This invitation for bids is restricted to original equipment manufacturers / authorized agency appointed by OEM as per approved make mentioned in technical specifications. In case of authorization agency, manufacturer's authorization supporting document to be provided.

2.2. Cost of bidding:

The Bidder shall bear all costs associated with the preparation and submission of its bid, and IDMC Limited, also hereinafter based on the context referred to as "the Purchaser", will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

2.3. Bidders to check the contents of enquiry documents:

The Bidder is requested to carefully examine all instructions, conditions, forms, terms, specifications, and drawings in the bidding documents. Failure to comply with the requirements of bid submission will be at the bidder's own risk. Bids which are not substantially responsive to the requirements of the bidding document will be rejected.

2.4. Documents to be submitted along with the offer/ bid:

The offer to be submitted by the bidder/ vendor shall comprise the following:

a. The Form of bid duly filled and signed.

b. Bidders: self-attested copies of documents defining the constitution, place of Registration and principal place of business.

c. Details of experience and past performance of the bidder on the executed contracts of similar nature within the last 5 years. The bidder shall also provide details of similar machines provided in last five consecutive years to the following geographies:

   i. Globally (excluding Asia)
   ii. Asia (excluding India)
   iii. India

d. List of customers and their contact details for reference.

e. All details as specified in the section technical details as per the format provided.

f. The complete enquiry document with filled in offer, has to be submitted duly signed & stamped by the bidder/ vendor.

g. The bidder should furnish a brief write-up, backed with adequate data, explaining his available capability (both technical and commercial) for manufacturing and design, engineering, manufacturing, supply, installation, testing and commissioning of the required equipment within the specified time of completion, after meeting all their current commitments.

h. Service setup of the bidder in India (if any).

i. The bidder shall submit a detailed technical offer including the layout, GA drawings, Process Flow Diagram (showing flow, temperature, pressure, and other relevant parameters), product drawings, P&ID, equipment/instrument/electrical datasheets, automation architecture, detailed electrical panel and cable specifications, and a tentative schedule/Gantt chart (L1 schedule).

j. Additionally, the bidder shall provide a detailed list of all equipment with quantities proposed under import, the list of indigenous equipment with quantities, and a complete list of spare parts and special tools required for two years of continuous operation.

All pages of the offer documents shall be signed by person(s) duly authorized. Proof of authorization shall be in the form of a written Power of Attorney/ Authority letter which shall accompany the bid. All pages of the offer documents, where entries and amendments have been made, shall additionally be initiated by the person(s) signing the offer/ bid.

The complete offer/ bid shall be without alterations, interlineations, or erasures except those in accordance with instructions issued by IDMC Limited, or as necessary to correct errors made by the bidder in which case such corrections shall be initialed by the person(s) signing the offer. No overwriting shall be permitted.

2.5. Clarification of bidding documents:

As specified above at clause no. 1.3

2.6. Mode and manner of submission:

2.6.1. Submission of bid shall be through NCDFI eMarket portal only. No physical/email bids shall be accepted

2.7. Currency of offer & payment:

The prices shall be quoted by the bidder as under:

2.7.1. Bidders shall quote in USD / Euro / INR (as applicable). All payments will be made in the currency in which the PO/contract will be awarded.

The payment will be only through an authorized bank, subject to forex and other regulations, including withholding taxes, if any, in force. The bank charges within India shall be borne by the purchaser.

2.8. The price schedule:

Pack-A
Processing Line for Frozen French Fries Production

Sr. No	Technical Details Serial No.	Description	Quantity	UOM
		Raw Potato Preparation		
1	2.1.1.	De-stoner & washer	1	EA
2	2.1.2.	Inclined Belt Conveyor	1	EA
3	2.1.4.	Continuous Steam Peeler	1	EA
4	2.1.5.	Inclined Screw Conveyor	1	EA
5	2.1.6.	Dry Peel Removal / Brusher	1	EA
6	2.1.7.	Peel Waste Pump with Hopper	1	EA
7	2.1.8.	Washing Screw Conveyor	1	EA
8	2.1.9.	Reclaim Wheel Sieve / De-watering drum	1	EA
9	2.1.10.	Inspection Roller Conveyor	1	EA

10	2.1.11.	Transfer Conveyor	1	EA
11	2.1.12.	Inclined Screw Conveyor (for PEF)	1	EA
12	2.1.13.	Pulsed Electric Field (PEF) system	1	EA
		Cutting & Grading		
13	2.2.0.	Dividing Conveyor to Mechanical Cutter	1	EA
14	2.2.1.	Mechanical Cutting system	1	EA
15	2.2.2.	Hydro-Cutting System	1	EA
16	2.2.3.	Knife Sharpener	1	EA
17	2.2.4.	Sliver Remover	1	EA
18	2.2.5.	Length Grader	1	EA
19	2.2.6.	Optical Sorter	1	EA
20	2.2.7.	Reject Belt - Sorter	1	EA
21	2.2.8.	Accept Belt - Sorter	1	EA
22	2.2.9.	Incline Belt Conveyor to Blancher	1	EA
		Blanching & Dipping		
23	2.3.1.	Short Hold (SH) Blancher	1	EA
24	2.3.2.	Long Hold (LH) Blancher	1	EA
25	2.3.3.	DIP Screw Conveyor	1	EA
		Drying		
26	2.4.1.	Shaker (Infeed to dryer)	1	EA
27	2.4.2.	Dryer	1	EA
28	2.4.3.	Equilibrium Belt Conveyor	1	EA
		Frying		
29	2.5.1.	Vibratory Conveyor (Infeed to fryer)	1	EA
30	2.5.2.	Frying System	1	EA
31	2.5.3.	Oil Recovery System along with Oil Filtration System	1	EA
32	2.5.4.	Fresh Oil Storage Tank	1	EA
33	2.5.5.	Used reclaim Oil Tank	1	EA
34	2.5.6.	Buffer / Day Oil Storage Tank	1	EA
35	2.5.7.	Spreading & Defatting Shaker	1	EA
		Accessories /Auxiliary / Spars / Additional Equipments		
36	2.6.1.	Anti-foam Dosing system	1	EA
37	2.6.2.	Platforms, Frames, Supports, Stacks, Rails	1	EA
38	2.6.3.	Instruments/controls/accessories	1	EA
39	2.6.4.	Spare for 2-year operation	1	EA
		Electrical		
40	2.7.1.	Electrical Control Equipment	1	EA
		Installation, Testing, Commissioning, acceptance, Training & Service Cover		

41	2.8.1.	Supervision for Installation, Start-up assistance, Testing, Commissioning, acceptance & Training	1	Job
42	2.8.2.	Service Cover (continuous 5 working days in quarter applicable for one year (4 visits per annum). The no. of skilled technical engineer deployed for the service cover shall be decided by the bidder.	4	Job

Pack-B
Processing Line for Potato Flakes Production

Sr. No	Technical Details Serial No.	Description	Quantity	UOM
		Raw Potato Preparation		
43	3.1.1.	De-stoner & washer	1	EA
44	3.1.2.	Inclined Belt Conveyor	1	EA
45	3.1.4.	Continuous Steam Peeler	1	EA
46	3.1.5.	Inclined Screw Conveyor	1	EA
47	3.1.6.	Dry Peel Removal / Brusher	1	EA
48	3.1.7.	Peel Waste Pump with Hopper	1	EA
49	3.1.8.	Washing Screw Conveyor	1	EA
50	3.1.9.	Reclaim Wheel Sieve / De-watering drum	1	EA
51	3.1.10.	Inspection Roller Conveyor	1	EA
		Cutting		
52	3.2.1.	Mechanical Cutting system	1	EA
53	3.2.2.	Dosing Hopper	1	EA
		Blanching, Cooling & Cooking		
54	3.3.1.	Blancher	1	EA
55	3.3.2.	Cooler	1	EA
56	3.3.3.	By-Pass Flume Low Leach	1	EA
57	3.3.4.	Overflow Managing System	1	EA
58	3.3.5.	Rotary Valve (at inlet of cooker)	1	EA
59	3.3.6.	Cooker	1	EA
		Mashing		
60	3.4.1.	Ricer/Masher	1	EA
61	3.4.2.	Additives Station	1	EA
62	3.4.3.	Volumetric Dosing Screw	1	EA
63	3.4.4.	Mash Pump System	1	EA
64	3.4.5.	Piping of Mash Pump System	1	EA

		Drying		
65	3.5.1.	Drum Dryer	1	EA
66	3.5.2.	Vapour Hood & Platforms	1	EA
67	3.5.3.	Disposable Knife for the Drum Dryer	1	EA
		Milling		
68	3.6.1.	Air Transport	1	EA
69	3.6.2.	Piping for Air Transport	1	EA
70	3.6.3.	Mill Sifter	1	EA
71	3.6.4.	Discharge Screw Conveyor	1	EA
72	3.6.5.	Aero-mechanical Conveyor	1	EA
73	3.6.6.	Rotating Permanent Magnet	1	EA
74	3.6.7.	Dry Product Silo	1	EA
75	3.6.8.	Big-Bag Unloading Station	1	EA
76	3.6.9.	Collection Screw Conveyor for Big-Bag Unloading Station	1	EA
77	3.6.10.	Aero-mechanical Conveyor	1	EA
78	3.6.10B.	Metal Detection System	1	EA
79	3.6.10C.	Aero-mechanical Conveyor	1	EA
80	3.6.11.	Powder Mill Unit	1	EA
81	3.6.12.	Aero-mechanical Conveyor	1	EA
		Accessories /Auxiliary / Spars / Additional Equipments		
82	3.7.1.	Pump System for Potato waste from French Fries Line	1	EA
83	3.7.2.	Anti-foam Dosing system	1	EA
84	3.7.3.	Platforms, Frames, Supports, Stacks, Rails	1	EA
85	3.7.4.	Instruments/controls/accessories	1	EA
86	3.7.5.	Spare for 2-year operation	1	EA
		Electrical		
87	3.8.1.	Electrical Control Equipment	1	EA
		Installation, Testing, Commissioning, acceptance, Training & Service Cover		
88	3.9.1.	Supervision for Installation, Start-up assistance, Testing, Commissioning, acceptance & Training	1	Job
89	3.9.2.	Service Cover (continuous 5 working days in quarter applicable for one year (4 visits per annum). The no. of skilled technical engineer deployed for the service cover shall be decided by the bidder.	4	Job

2.8.1. The bidder shall quote the price in figures and words clearly specifying the currency. The said price shall be a comprehensive all-inclusive price for the design, engineering, manufacturing, supply, installation, testing, and commissioning including the obligations of any services and supplies as specified in the technical details or elsewhere in the bidding document.

2.8.2. The price will include the cost/ fee of any Technician/ Supervisor/ Expert to be deputed by the vendor at the site for Supervision of installation, testing, commissioning and handing over, or any other related activity.

2.8.3. Please mention imported & indigenous item separately.

Note: IDMC Limited shall provide local transportation from Hotel to the project site at Itola (Gujarat) only to facilitate officials of the successful bidder (applicable for Foreign bidders representative only) during the period of Supervision of installation, testing and commissioning.

2.9. Offer validity & extension of validity if required:

Bids submitted shall remain valid for acceptance for a period of 120 days from the date of bid closing.

2.10. Submitted offer to be complete in all respect:

The bidder shall submit an offer which complies fully with the requirements of the bidding documents, including the basic technical design as indicated in the specifications.

2.11. Date of submission of offer/ bid:

The offer must be received by IDMC Limited on or before the date and time of submission as stated in the Invitation for Enquiry/ Tender. IDMC Limited may, at its discretion, extend the deadline for the submission of offer/ bid by issuing necessary instructions on email to all registered bidders, in which case, all rights and obligations of IDMC Limited and the bidders previously subject to the original deadline shall thereafter be subject to the new deadline as extended.

2.12. Late bids:

Any offer/ bid received by IDMC Limited later than the deadline for the submission of offers/ bids as prescribed by IDMC Limited will be subject to rejection.

2.13. Opening of bids:

The bids will be opened, scrutinized, and evaluated as per the qualification, scope and specification mentioned in tender and award the contract accordingly.

After the opening of offers IDMC Limited shall evaluate and process the same for finalizing the issuance of the Purchase order. The process shall be kept confidential - not disclosed to bidders/ any vendor or other persons not officially concerned with such process.

2.14. Undue influence by the bidder:

Any action to influence the procurement process or contract execution for undue advantage will be improper and may result in the rejection of the bidder's bid/ offer.

2.15. Clarification on offers/ bids:

To assist in the evaluation of offers/ bids, IDMC Limited may request the bidders/ vendors for clarification of their bids, including breakdown of unit rates. The request for clarification and the response shall generally be in writing but no change in the price or substance of the bid shall be sought, offered or permitted. The Purchaser may, depending on the nature of the query, contact the concerned bidder on the telephone number provided in the bid document only for the purpose of understanding and/ or resolving the query. For this purpose, the bidder is requested to provide the name and contact details of its designated officer.

2.16. Correction of errors:

2.16.1. The offers will be checked by IDMC Limited for any arithmetic errors in computation and summation. Errors will be corrected as follows:

2.16.2. "Where there is a difference between rates in figures and in words, the rates that correspond to the amounts worked out by the bidders, shall be taken as correct. However, when the amount of an item is not worked out or it does not correspond with the rates written either in figures or words, then the rates quoted by the bidder in words shall be taken as correct. When the rates quoted by the bidder in figures and words tallies but the amount is not worked out correctly, the price quoted by the bidder shall be taken as correct and not the amount."

2.16.3. The amount stated in the form of bid will be adjusted by IDMC Limited in accordance with the above procedures for the correction of errors, and with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the quoted rates (Price) of bid then his bid shall be rejected.

2.16.4. IDMC Limited reserves the right to accept or reject any variation, deviation, or alternative offers.

2.17. IDMC Limited's right to accept any offer/ bid and to reject any or all offers/ bids:

As mentioned above in clause no. 1.7

2.18. Notification of award and issuance of Purchase order:

Prior to the expiry of the period of offer/ bid validity prescribed in the enquiry/ bid documents, IDMC Limited will notify the finalized bidder/ vendor here in after referred to as the "/ Successful bidder/ Bidder", in writing on acceptance of their offer/ bid and issue a Letter of Intent/ Award, followed by a detailed Purchase order mentioning all the required terms and conditions and (hereinafter and in the Conditions of the Contract referred to as the "Contract price").

2.19. License and permit for goods/ services:

No license or permit shall be provided by Purchaser/ Owner/ IDMC Limited for the exports of goods and services being provided by the Successful bidder against this enquiry or work order.

2.20. Amendment to the bidding document:

At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by amendment. The amendment will be notified in writing by mail to all registered Bidders.

2.21. Modification in the bid:

2.21.1. The Bidder may modify or withdraw its bid after the bid submission, provided that written notice of the modification or withdrawal is received by the Purchaser prior to the deadline prescribed for submission of bids.

2.21.2. No bid may be modified after the deadline for submission of bids.

2.22. Language of bid:

The Bid prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in the English language, provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the bid, the English translation shall govern.

2.23. Personal discussion:

If required, IDMC Limited may desire to hold personal discussions with shortlisted vendors. The discussions, if required, are likely to be held at IDMC Limited's office in Anand or through the Online Teams meeting. Date shall be intimated through e mail by designated person of IDMC.

3. General conditions of contract

3.1. Definitions and Interpretation:

3.1.1. In the Contract, as hereinafter defined, the following words and expressions shall have the meanings hereby assigned to them, except where the context otherwise requires.

3.1.2. OWNER/ PURCHASER/ IDMC shall mean IDMC Limited and shall include its successors and assignees, as well as its authorized representatives.

3.1.3. IDMCL shall mean IDMC Limited.

3.1.4. The bidder/ Vendor shall be the firm/party/individual who submits the offer/ bid against this enquiry.

3.1.5. Contractor/ Successful bidder/ Bidder shall mean the successful vendor/ bidder whose Offer/ Bid has been accepted by the Owner/ IDMC Limited and on whom a work order/ PO has been placed and shall include his heirs, legal representatives, and assignees.

3.1.6. Contract price/rate shall mean the prices/ rates of the accepted Offer/Bid

3.1.7. Contract shall mean the work order or Purchase order along-with articles of agreement, the conditions, the Annexure, the schedule of quantities, and/ or specifications attached herewith.

3.1.8. "Notice in writing" shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by courier/ registered to the last known address or the registered office of the addressee and shall be deemed to have been received when in the ordinary course of post, it would have been delivered.

3.1.9. Site shall mean the actual place where the machine being purchased will be installed and commissioned as specified in technical specifications.

3.1.10. Month shall mean from the beginning of a given date of a calendar month to the end of the preceding date of the next calendar month.

3.1.11. Week shall mean seven consecutive days.

3.1.12. Day shall mean a day from midnight to midnight.

3.1.13. Award shall mean the written acceptance of the Offer/ Bid by IDMC Limited/owner given to the successful bidder/ Vendor/ Bidder.

3.1.14. Constructional Plant shall mean all appliances or things of whatsoever nature required in or about the execution and maintenance of the Works but does not include the materials or other things required/intended to form or forming part of the Works.

3.1.15. Specifications shall mean the specification referred to in the Enquiry Document/ Bid Document and any modification thereof or addition thereto as may from time to time be furnished or approved in writing by IDMC Limited.

3.1.16. Drawings shall mean drawings referred to in the specifications and any modification of such drawings approved in writing by IDMC Limited and such other drawings as may from time to time be furnished or approved in writing by IDMC Limited.

3.1.17. Approved/ Approval shall mean approval in writing, including subsequent written confirmation of previous verbal or written approval.

3.1.18. I.S.S. shall mean Indian Standard Specifications as published by Bureau of Indian Standards, India.

3.1.19. Government shall mean the Government of India or the Government in state of Gujarat.

3.1.20. Enquiry document shall mean the Bid document.

3.1.21. Headings and marginal note: All headings of and notes to the clauses of these Conditions of Contract or of and to the Specifications or any other bid document are solely for the purpose of giving concise indication and not a summary of the contents thereof, and they shall never be deemed to be the part of or be used in the interpretation or construction thereof or of the Contract.

3.1.22. Singular and plural: In this Contract document unless otherwise stated specifically the singular shall include the plural and vice-versa wherever the context so requires.

3.1.23. Cost: The cost shall be deemed to include all the overhead costs whether on or off the site.

3.1.24. Purchaser: IDMC Limited.

3.1.25. Installation: Something (such as a piece of equipment) that is put together and made ready for use.

3.1.26. Testing, commissioning and handover : It is the process of assuring that all systems and components of an industrial plant are designed, installed, tested, operated, and maintained according to the operational requirements and the Purchase Order specifications of the owner or final client.

3.2. Application:

These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

3.3. Documents mutually explanatory:

Except if and to the extent otherwise provided by the Contract, the provisions of the General Conditions and Special Conditions of the Contract shall prevail over those of any other documents forming part of the Contract. Several documents forming the Contract are to be taken as mutually explanatory.

3.4. Program to be furnished:

3.4.1. The successful bidder shall, after the receipt of the PO, submit to the Purchaser a program showing the schedule of various activities weekly as well as monthly in which he proposes to carry out the supply, installation, testing and commissioning within the timelines agreed for inclusion in the contract.

3.4.2. If at any time it should appear to IDMC that the actual progress of the Works does not conform to the approved program, as referred above, the successful bidder shall produce, at the request of IDMC, a revised program showing the modifications to the approved program necessary to ensure completion of the Works within the time for completion as defined in the contract.

3.5. Standards:

The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

3.6. Use of contract documents and information:

3.6.1. The Bidder shall not, without the Purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Bidder in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

3.6.2. The Bidder shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in clause 3.6.1 except for purposes of performing the Contract.

3.7. Patent rights and royalties:

The Bidder shall indemnify IDMC Limited from and against all claims and proceedings for or on account of infringement of any patent rights, design trademark or name or other protected rights in respect of any constructional plant, machine work, or material and for in connection with the supply of the machine or any of them and from and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

3.8. Inspection and tests:

3.8.1. The Purchaser or its representative shall have the right to inspect and/ or test the Goods to confirm their conformity to the Contract. The technical specifications shall specify what inspections and tests the Purchaser requires.

3.8.2. The inspections and tests may be conducted on the premises of the Bidder, at point of delivery and/or at the Good's final destination. Where conducted on the premises of the Bidder, all reasonable facilities and assistance including access to drawings and production data-shall be furnished to the inspectors at no charge to the Purchaser. In case of any defects or deficiency notified by the Purchaser's inspection authority, the Bidder will rectify and make good the same without delay and not proceed with further processing of such item(s) of Goods without obtaining approval from the inspection authority.

3.8.3. Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject them and the Bidder shall either replace the rejected Goods or make all alterations necessary to meet specification requirements free of cost to the Purchaser.

3.8.4. The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at the destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested, and passed by the Purchaser or its representative prior to the Goods shipment from the country of origin.

3.9. Packing and marking:

3.9.1. The Bidder shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to temperature, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit. The Bidder will be responsible for internal damage if any, even if outwardly there is no damage to the package.

3.9.2. The packing, marking and documents within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract and, subject to Clause 3.18 and any subsequent instructions given by the Purchaser.

3.9.3. Each package shall be marked to indicate:

Name of the Bidder

Purchase Order number

Details of items in the package

Gross, net, and tare weights on the item

Name of the consignee Destination

Country of origin

3.9.4. The cost of the individual cases aggregating to the total machine cost shall have to be submitted to IDMC prior to dispatch. The Bidder will have to replace the respective item of the individual cases at the cost declared, in case of damage/loss etc. IDMC Limited shall not permit deviation from this clause. The Bidder finally executing the contract would be deemed to have accepted this clause.

3.10. Delivery and documents:

Upon shipment/ dispatch, the Bidder shall notify to the purchaser the full details of dispatch including purchaser order no., description of the goods, quantity, mode of transport, place of loading, date of dispatch, packing details with the individual costs etc. The Bidder will mail the following documents to the purchaser with a copy to the Insurance Company:

Original and five copies of:

The Bidder's invoice showing purchase order no. description of goods, quantity, unit price, total amount;

a. Delivery note/case-wise detailed packing list identifying contents of each package/ lorry Receipt/Bill of landing, individual case values (for replacement purposes, in case of damage) etc.

b. Manufacturer's/Bidder's warranty certificate;

c. Inspection Certificate issued by the nominated inspection agency, and the Bidder's Factory inspection report;

d. Certificate of origin;

e. Any other document evidencing payment of statutory levies;

f. The Bidder's certificate certifying that the defects pointed out during inspection have been rectified;

g. Certificate of no war/ war like materials is loaded in the consignment;

h. Age of vessel (Not more than 25 years)

Note: The nomenclature used for the item description in the invoice/s, packing list/s and delivery note/s etc. should be identical to that used in the purchase order. The dispatch particulars including name of transporter, LR/BL no. and date should also be mentioned in the invoices.

3.11. Insurance

Global bidders (Price basis shall be applicable as per Incoterm mentioned in clause no. 2 (m) - Instructions to bidders)

3.12. Transportation:

3.12.1. For Imported Goods : As per incoterms mentioned above.

3.12.2. For local goods (Indigenous items) : Transportation and insurance upto the site shall be in the scope of bidder.

3.13. Incidental services:

As specified in the Special Conditions of Contract, the Bidder will be required to provide any or all of the following services:

a. The bidder shall provide all the details/load for safe unloading of materials at project site.

b. Furnishing list of tools and tackles required for assembly and/or maintenance of the supplied goods; Any special tools required for assembly and installation shall be provided by the bidder

c. Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods; and manuals covering the operation and maintenance of automation software and control systems. The soft copy of manuals shall also be provided.

d. Performance or supervision or maintenance and/or repair of the supplied Goods, for a period agreed by the parties, provided that this service shall not relieve the Bidder of any warranty obligations under this Contract; and

e. Conduct 15 working days onsite /offsite training during installation and commissioning as per the requirement of the purchaser.

3.14. Spare parts: - Applicable as per technical specifications

Bidder shall also provide costing & breakup quantity of spares.

3.15. Warranty:

3.15.1. The Bidder warrants that the Goods and equipment, supplied, installed, and commissioned under the Contract are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Bidder further warrants that the Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except insofar as the design or material is required by the Purchaser's Specifications) or from any act or omission of the Bidder, that may develop

under normal use of the supplied Goods in the conditions obtaining in the country of final destination. The Bidder also guarantees that the Goods supplied shall perform satisfactorily as per the signed/rated/-installed capacity as provided for in the Contract.

3.15.2. The warranty period is 12 months after the date of successful commissioning, product trial & acceptance, and completion certificate duly signed by both parties or handover of the plant.

3.15.3. The Purchaser shall promptly notify the Bidder in writing of any claims arising under this warranty.

3.15.4. Upon receipt of such notice, the Bidder shall promptly respond and resolve the issue maximum within 7 days from the date of notice by way of repair or replace the defective Goods or parts thereof, without costs to the Purchaser.

3.15.5. If the Bidder, having been notified, fails to remedy the defect(s) within a reasonable period mentioned in clause no 3.16.3, the Purchaser may proceed to take such remedial action as may be necessary, at the Bidder's risk and expense and without prejudice to any other rights which the Purchaser may have against the Bidder under the Contract.

3.16. Payment:

Payment for supply component:

3.16.1. 20% advance against submission of equivalent security in the form of Bank guarantee from a reputed bank with banker confirmation and shall valid till receipt of last consignment at purchaser site in acceptable condition.

3.16.2. 70% shall be payable through letter of credit (on B/L date- 90 days Interest Free Credit- usance period) on presentation of clean set of board shipping documents along with insurance details. LC to be opened 1 month prior to scheduled ex-work delivery date.

3.16.3. The balance 10% shall be payable through letter of credit in 30 days after final acceptance of satisfactory performance of the complete plant for uninterrupted running of 15 days continuously, on completion of other contracted services including training and acceptance by the purchaser in writing, within the scope of this contract and on submission of an equivalent amount of performance bank guarantee (PBG) valid for a period of 12 months from the date of successful commissioning, product trial & acceptance by the purchaser.

Payment for Supervision for Installation, Start-up assistance, Testing, Commissioning, acceptance & Training:

3.16.4. 90% of the contract price against successful installation and commissioning shall be paid in 30 days on actual completion of installation/erection and approval by the purchaser (against detailed break up cost to be furnished by the Bidder in advance and accepted by the Purchaser)

3.16.5. On final acceptance:
The balance 10% shall be paid on continuous satisfactory running of the complete plant/equipment for one month, on completion of other contracted services and accepted by the purchaser's representative, within the scope of this contract.

Payment for Service Cover:

3.16.6. 100 % shall be paid in 15 days against submission of visit report accepted by the purchaser's representative, within the scope of this contract.

Note:

1) All bank charges within India to the Buyer account and outside India to the beneficiary/ Vendor account. L/ C confirmation charges (if any) to beneficiary/ Vendor account. L/ C shall be processed only after receipt of order acknowledgement and/ or Pro-forma invoice from Beneficiary/ Vendor with required details.

2) All bank guarantees should be issued by a Nationalized/ class- I Indian/ Foreign Bank in the format provided in the bid.

3.16.7. The Bidder's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and Services performed, and by shipping documents, submitted pursuant to Clause 3.10, and fulfillment of other obligations stipulated in the Contract.

3.16.8. All payments under this contract shall be made in the currency in which the bid price was quoted.

3.17. Change orders:

3.17.1. The Purchaser may, at any time, by a written order given to the Bidder make changes within the general scope of the Contract in any one or more of the following:

a. Drawings, designs, or specifications, where Goods to be furnished under the Contract is to be specifically manufactured for the Purchaser:

b. The method of shipment or packing;

c. The Services to be provided by the Bidder.

3.17.2. If any such change causes a substantial increase or decrease in the cost of, or the time required for, the Bidder's performance of any part of the work under the Contract, whether changed or not changed by the order, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Bidder for adjustment under this clause must be asserted within sixty (60) days from the date of the Bidder's receipt of the Purchaser's change order.

3.18. Contract amendment:

Subject to Clause 3.17, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

3.19. Assignment:

The Bidder shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

3.20. Liquidated damages:

If the Bidder fails to deliver any or all the goods or perform the services within the times period (s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the contract prices, as liquidated damages, a sum equivalent to:

(1) 0.5% of the full contract value for every completed week (week comprising of 7 days including holidays and any incomplete week shall be ignored for the calculations of liquidated damages) of delay in the supplies/commissioning.

(2) The total amount so deducted shall not exceed 5% of the Contract value. Once the maximum is reached, the Purchaser may consider termination of the contract pursuant to Force Majeure.

Any incremental taxes and levies on account of delay in performance of the Contract by the Bidder shall be to the Bidder's account.

3.21. Termination for default:

The contract can be terminated on the following grounds:

3.21.1. Bidders default:

3.21.1.1. If the Bidder shall assign the Contract, without the consent in writing of the Purchaser first obtained, or if in the opinion of the Purchaser, the Bidder:

a. Has abandoned the Contract, or

b. Without reasonable excuse has failed to commence the Works or has suspended the progress of the works for twenty-eight days after receiving from the purchaser written notice to proceed, or Despite previous warnings by the Purchaser, in writing, is not executing the works in accordance with the Contract or neglecting to carry out his obligations under the contract.

3.21.1.2. Consequent to such termination of Contract, the Purchaser shall also be entitled to recover the advance paid, if any, to the Bidder along with interest @ 18% per annum compounded quarterly on the last day of March, June, September and December on the advance paid for the entire period for which the advance was retained by the Bidder.

3.21.2. Default of the Purchaser

3.21.2.1. In the event of the Purchaser:

a. Becoming bankrupt or (being a company) going into liquidation other than for the purpose of a scheme of reconstruction or amalgamation, or

b. Being unable to continue to meet his contractual obligations for unforeseen reasons due to economic dislocation.

3.21.2.2. Nothing in this clause contained shall prejudice the right of the Bidder to exercise, either in lieu of or in addition to the rights and remedies in this Clause specified any other rights or remedies to which the Bidder may be entitled.

3.22. Force majeure:

3.22.1. Notwithstanding the provisions of Clauses 3.20, 3.21 the Bidder shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force majeure.

3.22.2. For purposes of this clause, "Force majeure" means an event beyond the control of the Bidder and not involving the Bidder's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

3.22.3. If a Force Majeure situation arises, the Bidder shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Bidder shall continue to perform its obligations under the Contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by the Force majeure event.

3.23. Inspection of goods during manufacturing at Bidder works/ operations:

The Purchaser and any person authorized by him shall have the right to inspect the physical progress at the site of the successful bidder, after providing reasonable and not less than three days' notice.

3.24. Time for completion shall mean the completion of performance of contract:

As given in clause 4.3 in the special conditions of contract.

3.25. Certification of completion of works:

The successful bidder shall obtain a certificate of completion from IDMC Limited at the time of complete plant hand over for the commercial production after successful commissioning and performance trial of the supplied plant and machinery and fulfilment of other obligations stipulated in the contract.

3.26. Resolution of disputes:

3.26.1. The Purchaser and the Bidder shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the Bidder have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms as specified in the special conditions of contract. These mechanisms may include but are not restricted to, conciliation mediated by a third party, adjudication in an agreed national or international forum, and/or international arbitration. The mechanism shall be specified in the Special conditions of the contract.

Applicable law:

The Contract shall be interpreted in accordance with the laws of the Union of India.

3.27. Notices:

3.27.1. Any notice given by one party to the other pursuant to the Contract shall be sent in writing to the address specified for that purpose in the Special Conditions of Contract.

3.27.2. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

3.28. Right to use defective goods:

If after delivery, acceptance and installation and within the warranty period, the operation or use of the Goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such Goods until rectifications of defects, errors, or omissions by repair or by partial or complete replacement are made without interfering with the Purchasers' operation.

3.29. Jurisdiction:

This invitation for bids is issued by IDMC Limited and on behalf of its head office situated at Anand (Gujarat). For the settlement of any dispute arising out of the contract against this bid, only the Courts at Anand, Gujarat, India shall have jurisdiction.

4. Special conditions of contract

4.1. General:

The following Special conditions of Contract shall supplement the General conditions of Contract, given in chapter 3. Wherever there is a conflict, the provisions herein shall prevail over those in the General conditions of Contract.

4.2. Taxes:

For Global bidders

The offer rates being as per price basis (Incoterm) mentioned in Instruction to Bidder. All the taxes and duties applicable from the port including customs duty etc. will be paid by the Purchaser. Foreign exchange rates as public customs the Reserve Bank of India on the bid closure date will be considered. All payments will be made in the currency in which the Purchase order will be placed and will be only through authorized bank, subject to forex and other regulations, including withholding taxes if any, in force and payment terms agreed.

4.3. Time of completion (Pack A and Pack B):

The expected total time of completion of the Design, Engineering, Manufacturing, Supply, Installation, Testing, Commissioning of Processing Line to manufacture Frozen French Fries at a minimum capacity of 3000 kg/hr and Potato Flakes at a minimum capacity of 1100 kg/hr is a period of 10 (Ten) months from the issue of the purchase order to successful commissioning and handover to purchaser.

4.4. Drawings/ specification:

The bidder shall furnish a standard Plant layout drawing along with the bid.

4.5. Safety regulations & compliance:

The successful bidder has to follow all the safety requirements during the supervision of erection, testing and commissioning as per the standard safety laws, compliances and as per the guideline of IDMC.

4.6. Office space at site:

IDMC Limited shall provide office space at the site location to the personnel of the Bidder during erection and commissioning period.

4.7. Supervision of installation, start up, commissioning and trial runs:

As per attached technical specifications.

4.8. Rating:

As per attached technical specifications

4.9. Instruction Manual:

As per attached technical specifications

4.10. Resolution of Disputes (Clause 3.26 of General Conditions of Contract):

In the event of any dispute in the interpretation of the terms of the order/contract or difference of opinion between the parties on any point in the order/contract arising out of or in connection with the agreement accepted order/contract or with regard to the performance of any obligation hereunder by either party, the parties hereto shall use their best efforts to settle such disputes or difference of opinion amicably by mutual negotiations. In case no agreement is reached, either party may forthwith give to the other, a notice in writing of the existence of such question, dispute, or difference of opinion, and the same shall be referred to the adjudication of a sole arbitrator to be appointed by IDMC whose decision in the matter shall be final and binding on the parties.

The arbitration proceedings shall be governed under the provisions of the Indian Arbitration and Conciliation act, 1996, and the rules there under or any statutory modifications thereof for the time being in force. In the order/contract, the venue of such Arbitration shall be Anand, Gujarat and the Courts of Anand alone shall have jurisdiction regarding any matter arising out of the order/contract.

4.11. Rights reserved by IDMC Limited:

IDMC Limited at its sole discretion and without assigning any reason thereof reserves the right to accept and/ or reject any or all the bids. Further it shall be the prerogative of IDMC Limited to revise/ modify the qualifying criteria specified in the invitation to bid without assigning any reasons whatsoever.

4.12. Limitation of Liability:

Notwithstanding anything to the contrary herein, Bidders' s entire liability for claim, whether based on contract, warranty (except warranty of title), tort

(including negligence), strict liability, or otherwise for any loss arising out of its performance or failure to perform this contract shall:

(A) not exceed the contract price of the equivalent supplied plant and machinery hereunder which was the cause of such claim:

(B) in no case extend to direct, indirect special incidental, or consequential damages, of any nature or kind, including, without limitation, lost profits, lost production, lost revenues, or lost business opportunities; and

(C) termination upon expiration of the warranty period.

5. Form of Bid

Enquiry Reference No	:	IDMC/ Sourcing & VD/ 2025-26/ Enquiry/ 348 dated 12.11.2025
Name and address of Purchaser	:	IDMC Limited, 124-128, GIDC Estate, Vithal Udyognagar- 388121, Anand District, Gujarat, India, Tel: +91-2692-220521

Gentlemen:

Having examined the Conditions of Contract, Technical Specifications and the Drawings included in or referred to in the Bidding Documents including Addenda Nos. (Insert Numbers), the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver Goods and Services including installation and commissioning as detailed in the price bid, in conformity with technical specifications and drawings (except to the extent of deviation statement furnished in our bid) and the Conditions of Contract as mentioned in or referred to in the said Bidding Document for the sum as may be ascertained in accordance with the Bid Prices and made part of this bid and the said conditions.

Our acceptance to all the conditions of the Bidding Document in this bid form shall persist over any other terms and conditions, if any, given in our bid.

We undertake, if our bid is accepted, to commence and complete delivery of all the goods and Services including installation and commissioning as specified in the Schedule of Quantities of the Bid Document, from the date of receipt of your Purchase Order.

If our bid is accepted, we will obtain the bank guarantees as per the conditions of the Contract for the due performance of the Contract.

We agree to abide by this bid for the period of 120 days from the date fixed for bid opening as per the Instruction to Bidders and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and your Purchase Order/notification of award, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this _____ day of _____ 2025.

_____
Signature

_____
(In the Capacity of)
Duly authorized to sign bid for and on behalf of

(Name & Address of Bidder): _____
_____

Name of Witness: _____

Signature: _____ Address: _____

BIDDING TERMS DEVIATION STATEMENT FORM

The following are the particulars of deviations from the requirements of the bidding conditions/ terms:

CLAUSE	DEVIATION	REMARKS (INCLUDING JUSTIFICATION)

The terms and conditions prescribed in the bidding document shall prevail over those of any other document forming a part of our bid, except only to the extent of deviations furnished in this statement.

Dated: Signature and Seal of Bidder
Place:

Note :-

Where there is no deviation, the statement should be returned duly signed with an endorsement indicating “NO DEVIATIONS”.

TECHNICAL DEVIATION STATEMENT FORM

The following are the particulars of deviations from the requirements of the bidding conditions/ terms:

CLAUSE	DEVIATION	REMARKS (INCLUDING JUSTIFICATION)

All the bidders to submit their bids as per the scope of supply mentioned in the technical specifications in totality and no any deviation shall be considered in the scope of supply.

The terms and conditions prescribed in the bidding document shall prevail over those of any other document forming a part of our bid, except only to the extent of deviations furnished in this statement.

Dated: Signature and Seal of Bidder
Place:

Note :-

Where there is no deviation, the statement should be returned duly signed with an endorsement indicating “NO DEVIATIONS”.

6. Acceptable forms of Bank Guarantees

Bank Guarantee to secure performance

Currency: INR / EURO / USD / ETC..	Amount in figures		
Amount in words			
Date of execution		Date up to when in force/ Date of expiry	
Date of Claim/ Demand (up to 45 days beyond the date of expiry)			
Name and address of beneficiary	IDMC Limited, Plot no. 124-128, GIDC Estate, Vithal Udyognagar, District Anand, Gujarat -388121		
Name and address of the vendor and/ or service provider (i.e. purchaser of the bank guarantee from the bank)			

THIS deed of guarantee made on this_____day of_____, between _____(name of the bank issuing this guarantee), herein after called 'the bank', on the first part and_____ (hereinafter referred to as 'vendor and/ or service provider in relation to IDMC Limited' and 'purchaser in relation to the bank' respectively) on the second part.

WHEREAS, the purchaser of the bank guarantee has been engaged by IDMC Limited as a vendor and/ or service provider for_____(e.g. design, manufacture, and supply of equipment or installation/ testing/ commissioning/ job work/ preventive maintenance/ break-down maintenance/ consulting or advising services as envisaged in the purchase order(s)/ contract(s)_____dated _____) which is required to be performed in pursuance of the said purchase order(s)/ contract(s);

WHEREAS, the vendor and/ or service provider is required to submit this bank guarantee for a sum of Rs._____(Rupees_____only) as security for fulfilling its obligation to secure performance of the____(description of goods and/ or services) under the said purchase order(s)/ contract(s).

AND WHEREAS, at the request of the vendor and/ or service provider, the bank has agreed to guarantee the refund of the said amount in case the aforesaid goods and/ or services do not perform to the satisfaction of IDMC Limited as per the terms and conditions of the said purchase order(s)/ contract(s).

NOW THIS DEED OF GUARANTEE DOES WITNESSETH AS UNDER:

1. That in consideration of IDMC Limited having awarded the said purchase order(s)/ contract(s), the bank does hereby irrevocably guarantee and indemnify that if the vendor and/ or service provider has supplied and/ or provided___ _____(description of goods and/ or services), which is not to the satisfaction of IDMC Limited, as per the details, terms and conditions contained in the said purchase order(s)/ contract(s), *supra*, the Bank shall, without demur, repay and indemnify IDMC Limited within seven (7) working days as the bank may be called upon to pay subject to a ceiling of Rs._____(Rupees_____);

2. We,___(name of the bank), further agree that this performance guarantee will remain in full force and effect up to_____by which duration IDMC

   Limited believes it may be reasonable to certify that the defect liability period has been successfully completed as per the details contained in the purchase order(s)/ contract(s),supra.

3. That the bank shall not question any of the details, terms and conditions contained in the said purchase order(s)/ contract(s), *supra*, including but not limited to the amount of consideration agreed upon between IDMC Limited and the vendor and/ or service provider for the purposes of determining its acceptance of liabilities under this bank guarantee and forthwith accept the demand of IDMC Limited to determine this bank guarantee.

4. That at the written request of either IDMC Limited or the vendor and/ or service provider, the bank shall renew this bank guarantee before it's date of expiry.

5. The Bank agrees that the amount hereby guaranteed shall be immediately due and payable to IDMC upon serving the bank with a notice before the date of expiry or date of claim/ demand, whichever is earlier. The claim can be lodged by IDMC Limited up to 45 days beyond the date of expiry or extended date of expiry.

6. This Bank Guarantee shall be subject to the law as applicable in India.

7. "In the event of invocation, the details to be sent to the branch address with branch email id _____ Marking a copy to our back-office email id _____."

8. Notwithstanding anything stated herein before:

   (i) The Bank's liability under this guarantee is restricted to Rs. _____/-(Rupees_____only);

(ii) This guarantee shall remain in force till_____and;

(iii) The Bank is liable to pay the guaranteed amount or any part thereof under this bank guarantee only if IDMC Limited serves upon the Bank a written claim/ demand on or before_____(Date of Claim/ Demand) including 45 days of grace period from the dateof expiry.

IN WITNESS WHEREOF, the bank has signed on this_____day of_____,2025.

Signature of Bank Manager

Bank Guarantee for advance payment

Currency: INR / EURO / USD / ETC..	Amount in figures		
Amount in words			
Date of execution		Date up to when in force/ Date of expiry	
Date of Claim/ Demand (up to 45 days beyond the date of expiry)			
Name and address of beneficiary	IDMC Limited, Plot no. 124-128, GIDC Estate, Vithal Udyognagar, District Anand, Gujarat -388121		
Name and address of the vendor and/ or service provider (i.e. purchaser of the bank guarantee from the bank)			

THIS deed of guarantee made on this_____ day of_____,between _____(name of the bank issuing this guarantee), herein after called 'the bank', on the first part and_____ (hereinafter referred to as 'vendor and/ or service provider in relation to IDMC Limited' and 'purchaser in relation to the bank' respectively) on the second part.

WHEREAS, the purchaser of the bank guarantee has been engaged by IDMC Limited as a vendor and/ or service provider for_____(e.g. design, manufacture and supply of equipment or installation/ testing/ commissioning/ job work/ preventive maintenance/ break-down maintenance/ consulting or advising services as envisaged in purchase order(s)/ contract(s)_____ dated _____) which is required to be supplied/ provided latest by _____(dd/mm/yyyy) in pursuance of the said purchase order(s)/ contract(s)

WHEREAS, IDMC Limited is required to pay the vendor and/ or service provider a sum of Rs. _____ (Rupees_____only) against submission of this bank guarantee towards part value of_____(description of goods and/ or services) ordered to be manufactured/ supplied/ provided under the said purchase order(s)/ contract(s);

AND WHEREAS, at the request of the vendor and/ or service provider, the bank has agreed to guarantee the refund of the said amount, in case the aforesaid goods and/ or services do not deliver to the satisfaction of IDMC Limited as per the terms and

conditions of the said purchase order(s)/ contract(s).

NOW THIS DEED OF GUARANTEE DOES WITNESSETH AS UNDER:

1. That in consideration of IDMC Limited having agreed to pay an advance of Rs. _____ (Rupees_____) to the vendor, the bank does hereby irrevocably guarantee and indemnify that if the vendor and/ or service provider fails to supply/provide to IDMC Limited the goods and/ or services as per the details, terms, and conditions contained in the said purchase order(s)/ contract(s), *supra*, the Bank shall, without demur, repay and indemnify IDMC Limited within seven (7) working days all such advances paid by IDMC Limited to the vendor and/ or service provider as the bank may be called upon to pay subject to a ceiling of Rs._____(Rupees_____);

2. That the guarantee furnished herein shall be realized and discharged the moment the vendor and/ or service provider supplies/ provides the equipment to the satisfaction of IDMC Limited, as per the details, terms and conditions contained in the said purchase order(s)/ contract(s);

3. That the bank shall not question any of the details, terms and conditions contained in the said purchase order(s)/ contract(s), *supra*, including but not limited to the amount of consideration agreed upon between IDMC Limited and the vendor and/ or service provider for the purposes of determining its acceptance of liabilities under this bank guarantee and forthwith accept the demand of IDMC Limited to determine this bank guarantee.

4. That at the written request of either IDMC Limited or the vendor and/ or service provider, the bank shall renew this bank guarantee before it's date of expiry.

5. That the Bank agrees that the amount hereby guaranteed shall be immediately due and payable to IDMC on serving the bank with a notice before the date of expiry or date of claim/ demand, whichever is earlier. The claim can be lodged by IDMC limited up to 45 days beyond the date of expiry or extended date of expiry.

6. This Bank Guarantee shall be subject to the law as applicable in India.

7. "In the event of invocation, the details to be sent to the branch address with branch email id _____ Marking a copy to our back-office email id _____."

8. Notwithstanding anything stated herein before:

   a. The Bank's liability under this guarantee is restricted to Rs. _____/-(Rupees_____only);

b. This guarantee shall remain in force till_____and;

c. The Bank is liable to pay the guaranteed amount or any part thereof under this bank guarantee only if IDMC Limited serves upon the Bank a written claim/ demand on or before_____(Date of Claim/ Demand) including 45 days of grace period from dateof expiry.

IN WITNESS WHEREOF, the bank has signed on this_____day of_____, 2025.

Signature of Bank Manager

7. Schedule Of Requirement

Design, Engineering, Manufacturing, Supply, Installation, Testing, Commissioning & Acceptance of

Pack-A
Processing Line to manufacture
Frozen French Fries at a minimum capacity of 3000 kg/hr

Pack-B
Processing Line to manufacture
Potato Flakes at a minimum capacity of 1100 kg/hr

Schedule of Requirement:

Pack. No	Description	Quantity	Completion Period
Pack-A	Design, Engineering, Manufacturing, Supply, Installation, Testing, Commissioning & Acceptance of the potato processing lines, including all allied equipment, electrical systems, automation, structural works, and comprehensive services such as Project Engineering & Management, Training, and Service Cover, **specifically designed to manufacture Frozen French Fries at a minimum capacity of 3000 kg/hr as per the technical specifications & preliminary layout enclosed** on single source responsibility basis at MDFVPL Project, Itola, Gujarat, India	1 Job	**10 Months**
Pack-B	Design, Engineering, Manufacturing, Supply, Installation, Testing Commissioning & Acceptance of the potato processing lines, including all allied equipment, electrical systems, automation, structural works, and comprehensive services such as Project Engineering & Management, Training, and Service Cover, **specifically designed to manufacture Potato Flakes at a minimum capacity of 1100 kg/hr as per the technical specifications &** preliminary layout enclosed on single source responsibility basis basis at MDFVPL Project, Itola, Gujarat, India	1 Job	

Note: Bidders must quote their prices for each item as mentioned in the broad schedule of quantity.

Schedule of Quantity:

The processing line shall be supplied completely with all standard mountings, accessories, and tools necessary for safe and efficient operation, fully complying with the latest applicable codes and statutory regulations. The processing line shall include all components specified herein.

It shall be the sole responsibility of the successful bidder to supply any components or items not explicitly mentioned in this specification or in their offer, if such components are required for compliance with statutory or regulatory provisions and process smooth operation. These additional components/items shall be deemed included within the bidder's scope of work, and no additional cost shall be entertained for the same.

The bidder shall, however, clearly identify in their offer any components or items not listed in this specification but considered necessary for safe, reliable, and efficient operation in accordance with the latest regulations. Prices for such additional components/items, if applicable, shall be furnished separately on an item-wise basis

The general technical specifications of the major components and the ancillary items described in the technical section and the equipment, its capacities and quantity proposed by the Purchaser is furnished in the design requirement and schedule of quantities are for the guidance of the supplier only. However, the Bidder has to get themselves familiarized/acquainted about the nature and the quantum of work involved and submit their offer without deviation in the basic configuration of the plant.

Bidder must agree to undertake the complete work and there is no exclusion whatsoever of any PART. It shall be understood that any minor work, which may not have been explicitly detailed but is necessary for the proper functioning of individual equipment or the plant as a whole, is included in the scope of work without any additional cost.

Pack-A
Processing Line for Frozen French Fries Production

Sr. No	Technical Details Serial No.	Description	Quantity	UOM
		Raw Potato Preparation		
1	2.1.1.	De-stoner & washer	1	EA
2	2.1.2.	Inclined Belt Conveyor	1	EA
3	2.1.4.	Continuous Steam Peeler	1	EA
4	2.1.5.	Inclined Screw Conveyor	1	EA
5	2.1.6.	Dry Peel Removal / Brusher	1	EA
6	2.1.7.	Peel Waste Pump with Hopper	1	EA
7	2.1.8.	Washing Screw Conveyor	1	EA
8	2.1.9.	Reclaim Wheel Sieve / De-watering drum	1	EA
9	2.1.10.	Inspection Roller Conveyor	1	EA
10	2.1.11.	Transfer Conveyor	1	EA
11	2.1.12.	Inclined Screw Conveyor (for PEF)	1	EA
12	2.1.13.	Pulsed Electric Field (PEF) system	1	EA
		Cutting & Grading		
13	2.2.0.	Dividing Conveyor to Mechanical Cutter	1	EA
14	2.2.1.	Mechanical Cutting system	1	EA
15	2.2.2.	Hydro-Cutting System	1	EA
16	2.2.3.	Knife Sharpener	1	EA
17	2.2.4.	Sliver Remover	1	EA
18	2.2.5.	Length Grader	1	EA
19	2.2.6.	Optical Sorter	1	EA
20	2.2.7.	Reject Belt - Sorter	1	EA
21	2.2.8.	Accept Belt - Sorter	1	EA
22	2.2.9.	Incline Belt Conveyor to Blancher	1	EA
		Blanching & Dipping		
23	2.3.1.	Short Hold (SH) Blancher	1	EA
24	2.3.2.	Long Hold (LH) Blancher	1	EA
25	2.3.3.	DIP Screw Conveyor	1	EA
		Drying		
26	2.4.1.	Shaker (Infeed to dryer)	1	EA
27	2.4.2.	Dryer	1	EA
28	2.4.3.	Equilibrium Belt Conveyor	1	EA
		Frying		
29	2.5.1.	Vibratory Conveyor (Infeed to fryer)	1	EA
30	2.5.2.	Frying System	1	EA

31	2.5.3.	Oil Recovery System along with Oil Filtration System	1	EA
32	2.5.4.	Fresh Oil Storage Tank	1	EA
33	2.5.5.	Used reclaim Oil Tank	1	EA
34	2.5.6.	Buffer / Day Oil Storage Tank	1	EA
35	2.5.7.	Spreading & Defatting Shaker	1	EA
		Accessories /Auxiliary / Spars / Additional Equipments		
36	2.6.1.	Anti-foam Dosing system	1	EA
37	2.6.2.	Platforms, Frames, Supports, Stacks, Rails	1	EA
38	2.6.3.	Instruments/controls/accessories	1	EA
39	2.6.4.	Spare for 2-year operation	1	EA
		Electrical		
40	2.7.1.	Electrical Control Equipment	1	EA
		Installation, Testing, Commissioning, acceptance, Training & Service Cover		
41	2.8.1.	Supervision for Installation, Start-up assistance, Testing, Commissioning, acceptance & Training	1	Job
42	2.8.2.	Service Cover (continuous 5 working days in quarter applicable for one year (4 visits per annum). The no. of skilled technical engineer deployed for the service cover shall be decided by the bidder.	4	Job

Note: The above-mentioned Quantities are tentative and subject to confirmation during the detailed process review and may be vary from the final scope.

Pack-B
Processing Line for Potato Flakes Production

Sr. No	Technical Details Serial No.	Description	Quantity	UOM
		Raw Potato Preparation		
43	3.1.1.	De-stoner & washer	1	EA
44	3.1.2.	Inclined Belt Conveyor	1	EA
45	3.1.4.	Continuous Steam Peeler	1	EA
46	3.1.5.	Inclined Screw Conveyor	1	EA
47	3.1.6.	Dry Peel Removal / Brusher	1	EA
48	3.1.7.	Peel Waste Pump with Hopper	1	EA
49	3.1.8.	Washing Screw Conveyor	1	EA
50	3.1.9.	Reclaim Wheel Sieve / De-watering drum	1	EA
51	3.1.10.	Inspection Roller Conveyor	1	EA
		Cutting		
52	3.2.1.	Mechanical Cutting system	1	EA
53	3.2.2.	Dosing Hopper	1	EA
		Blanching, Cooling & Cooking		
54	3.3.1.	Blancher	1	EA
55	3.3.2.	Cooler	1	EA
56	3.3.3.	By-Pass Flume Low Leach	1	EA
57	3.3.4.	Overflow Managing System	1	EA
58	3.3.5.	Rotary Valve (at inlet of cooker)	1	EA
59	3.3.6.	Cooker	1	EA
		Mashing		
60	3.4.1.	Ricer/Masher	1	EA
61	3.4.2.	Additives Station	1	EA
62	3.4.3.	Volumetric Dosing Screw	1	EA
63	3.4.4.	Mash Pump System	1	EA
64	3.4.5.	Piping of Mash Pump System	1	EA
		Drying		
65	3.5.1.	Drum Dryer	1	EA
66	3.5.2.	Vapour Hood & Platforms	1	EA
67	3.5.3.	Disposable Knife for the Drum Dryer	1	EA
		Milling		
68	3.6.1.	Air Transport	1	EA
69	3.6.2.	Piping for Air Transport	1	EA
70	3.6.3.	Mill Sifter	1	EA
71	3.6.4.	Discharge Screw Conveyor	1	EA
72	3.6.5.	Aero-mechanical Conveyor	1	EA

73	3.6.6.	Rotating Permanent Magnet	1	EA
74	3.6.7.	Dry Product Silo	1	EA
75	3.6.8.	Big-Bag Unloading Station	1	EA
76	3.6.9.	Collection Screw Conveyor for Big-Bag Unloading Station	1	EA
77	3.6.10.	Aero-mechanical Conveyor	1	EA
78	3.6.10B.	Metal Detection System	1	EA
79	3.6.10C.	Aero-mechanical Conveyor	1	EA
80	3.6.11.	Powder Mill Unit	1	EA
81	3.6.12.	Aero-mechanical Conveyor	1	EA
		Accessories /Auxiliary / Spars / Additional Equipments		
82	3.7.1.	Pump System for Potato waste from French Fries Line	1	EA
83	3.7.2.	Anti-foam Dosing system	1	EA
84	3.7.3.	Platforms, Frames, Supports, Stacks, Rails	1	EA
85	3.7.4.	Instruments/controls/accessories	1	EA
86	3.7.5.	Spare for 2-year operation	1	EA
		Electrical		
87	3.8.1.	Electrical Control Equipment	1	EA
		Installation, Testing, Commissioning, acceptance, Training & Service Cover		
88	3.9.1.	Supervision for Installation, Start-up assistance, Testing, Commissioning, acceptance & Training	1	Job
89	3.9.2.	Service Cover (continuous 5 working days in quarter applicable for one year (4 visits per annum). The no. of skilled technical engineer deployed for the service cover shall be decided by the bidder.	4	Job

Note: The above-mentioned Quantities are tentative and subject to confirmation during the detailed process review and may be vary from the final scope.

8. Technical Specifications

Design, Engineering, Manufacturing, Supply, Installation, Testing, Commissioning & Acceptance of

Pack-A
Processing Line to manufacture
Frozen French Fries at a minimum capacity of 3000 kg/hr

Pack-B
Processing Line to manufacture
Potato Flakes at a minimum capacity of 1100 kg/hr

CONTENTS

A. INTRODUCTION

IDMC Limited is setting up a "potato processing plant capable of producing both frozen French fries and potato flakes" on behalf of the MDFVPL (Mother Dairy Fruit & Vegetable Private Limited) for their Itola, Gujarat.

This potato processing plant is designed to produce frozen French fries & Potato Flakes beginning with common raw potato reception, progressing through two dedicated lines of processing, packing, storage & dispatch.

B. PROJECT SITE DETAILS

Site Location : MDFVPL Project, Itola
State : Gujarat, India
Nearest Airport : Ahmedabad and Vadodara
Operation : 24 Hrs

	Summer	Monsoon	Winter
Ambient Dry Bulb Temperature in Deg.C	44.2	35.8	8.1
Ambient Wet Bulb Temperature in Deg.C	29.2	28.7	5.1

Tropicalization - All equipment / system / sub-system / instruments/ control system should be fully tropicalized in view of the hot and humid weather conditions prevailing at this site.

C. SCOPE OF WORK

It shall be understood that this is a complete job on single source responsibility basis. The scope of this contract shall include, but not limited to designing, manufacturing, supply, installation, testing and commissioning the complete System and allied equipment.

Schedule of major items and components of the proposed plant are broadly described under technical specification.

Any items not explicitly mentioned in the specifications/scope of the work but required for completion of supply, proper functioning and satisfactory performance of the system is included in the scope of work and shall be provided by the bidder without any extra claim.

The scope of work specifically includes the following:

- The scope of work shall be on a turnkey basis, covering design, supply, supervision for installation, testing, and commissioning of all related equipment, piping, electrical systems, instrumentation, automation, and structural works.
- The bidder must undertake the job in its entirety without exclusions. Any minor works not explicitly detailed but necessary for the proper functioning of the processing line, or for achieving high-quality and efficient production, shall be deemed included at no additional cost.
- The bidder shall plan and execute the design, layout, selection of technology, and methodology of plant execution with full knowledge of efficient processing and packaging operations.
- Process flow diagrams, time schedules, mass flow diagrams, P&IDs, operating parameters, equipment details, and layouts shall be submitted by the bidder based on the offered system.
- The bidder shall furnish the complete requirement of utilities such as raw water, RO water, chilled water, hot water, steam, refrigerant, compressed air, oil and electrical power.
- The raw product shall be provided by the purchaser.
- General specifications of major components and ancillary items are described in the technical section. Capacities and quantities provided by the purchaser are indicative for comparison.
- It shall be assumed that the bidder is fully familiar with the nature of the product and the scope of work, and therefore shall not deviate from the basic design, functional requirements, or configuration of the plant
- The bidder shall be responsible for the proper positioning of the system and associated equipment on foundations, as well as all connections for piping, electrical systems, and earthing.

- Bidder shall clearly specific the Consumables to be arranged by the purchaser. Product, water, and power will be made available at the battery limit by the purchaser.
- The final packed product shall meet all applicable Indian food safety and quality standards.
- **All equipment shall be designed, engineered, supplied, and installed in accordance with prevailing international standards, including EHEDG or 3A sanitary Standards/USDA /FDA for smooth exporting of products and in compliance with ISO, HACCP, GMP, FSMS, and statutory Indian food and industrial safety regulations.**
- All Process equipment which have direct Food Contact after washing of the potato shall be fabricated in stainless steel AISI 304/316 as per process & design requirement unless otherwise specified.
- The bidder shall ensure satisfactory performance and provide after-sales service and support for all bought-out items.
- The bidder shall impart comprehensive training to plant personnel on the operation and maintenance of the equipment.
- After commissioning, the bidder shall submit Access to PLC program, Detailed BOQ and consumable list, dead load, Normal Load and catastrophic load, as-built P&IDs, equipment layout drawings, SOPs for operation and maintenance, safety instructions, and Do's & Don'ts.
- The bidder shall submit a detailed preventive maintenance schedule and complete operating manuals at least two weeks before the start of commissioning.
- The bidder shall submit the "layout, GA Drawings, Process Flow Diagram (with flow, temperature and other parameters), product drawing, P & ID, Equipment/ instrument/electrical Data sheet, Automation architecture, details of electrical panel and cable, and a tentative schedule/Gantt chart/ L1 Schedule and a comprehensive list of all spare parts and special tools required for two years of continuous functioning" at the time of submitting offer.
- The manuals shall include:
    - Procedures for system start-up, commissioning, normal operation, and emergency operation.
    - Troubleshooting charts indicating operational issues, possible causes, and corrective actions.
    - As-built equipment drawings, electrical schematics, control wiring diagrams, and executed P&IDs.
- Manuals and drawings are to be supplied as follows:
    - 1 Sets of drawings and manuals in hard copy
    - 1 Sets of drawings and manuals in Pen Drive (softcopy - PDF)
    - 1 Sets of drawings in Pen Drive (softcopy - AutoCAD Format)

D. DESIGN REQUIREMENT

1. **Raw Potato Receiving, Grading, Raw Cold Store - Purchaser Scope:**

   Plant receives the Raw Potatoes in truck from villages or cold store based on need. The initial collection will be done in a Bulk Hopper, followed by a Dirt Eliminator, which eliminates dirt from the potatoes. After Grading, the potatoes will move to a Bunker that serves as bulk storage for the graded product. From there, conveyors will transport the potatoes to the next stages for processing.

Pack-A

2. **Processing Line for Frozen French Fries Production:**

   The process line begins with Raw Potato Preparation, where whole unpeeled potatoes are de-stoned and washed to remove heavy impurities and floaters. This is followed by steam peeling, dry peel removal, and washing, after which the clean, peeled potatoes are transported to the Cutting & Grading section through an inspection conveyor (for inspection & manual trimming of defective or oversized potatoes).

   The Hydro-Cutting System cuts the peeled potatoes into specific sizes using high-pressure water jets. The Sliver Remover eliminates undesirable slivers, while Length Graders separate potato strips based on their length into different grading levels by removing too short pieces (nubbins). The Optical Sorter detects and removes defective or undesirable pieces based on visual characteristics and accepted pieces will be transported to the Blanching & Dipping section.

   The 'Blanching and Dipping' stage involves a two-step blanching process to ensure rapid enzyme inactivation, improved texture, and sugar reduction: first using a Short Hold (SH) Blancher to melt cell walls and initiate starch gelatinization, and second, using a Long Hold (LH) for prolonged sugar leaching and quality improvement. After that potato strips are transported through a DIP system equipped with dosing hoppers for additives like SAPP and Dextrose.

   The 'drying' stage begins with a Shaker that spreads and dewaters the wet French fry strips before they enter the Dryer, which uses a counter flow concept where the air opposes the product direction to ensure even drying across the full width of the product bed by evaporating water across two modules to minimize the rate of hydrolytic fat breakdown. After that the strips are transported via an Equilibrium Belt to allow for moisture balancing before the frying process.

   Before entering the fryer, the potato strips pass through a vibratory conveyor, which evenly spreads them to ensure uniform distribution across the full width of the fryer infeed. The strips are then submerged and conveyed through the fryer's

hot oil bath on a continuous internal transport system. This continuous frying process, also known as par-frying, is a crucial step in producing frozen French fries. Its main objectives are to remove surface moisture, develop a crisp texture, partially cook the product, inactivate the remaining enzymes, and enhance colour for the desired appearance and quality. The Fryer involves frying oil cleaning system. Immediately upon exiting the fryer, the product is passed over a defatting shaker to remove excessive surface oil and move to Freezing Section.

Pack-B

3. **Processing Line for Potato Flakes:**

The process line begins with Raw Potato Preparation, where whole unpeeled potatoes are de-stoned and washed to remove heavy impurities and floaters. This is followed by steam peeling, dry peel removal, and washing, after which the clean, peeled potatoes are transported to the Cutting & inspection section.

The Mechanical-Cutting System steplessly slice the peeled potatoes into a uniform size suitable for subsequent cooking and transports the freshly cut slices to the dosing hopper which acts as a buffer and regulates the flow of potato slices into the blancher

Blancher (serves the function of Pre-cooking) providing initial heat treatment to deactivate enzymes and remove free starch, followed by the Cooler, which rapidly chills the blanched slices, potentially prepared for chilled water circulation with a by-pass flume to the cooker which minimizes leaching, and concludes with the Cooker, which receives material sealed by a Rotary Valve, to fully cook the slices and completely gelatinize the starch, making them soft and ready for mashing.

The Ricer/Masher involves pushing the cooked potato material through small holes or screens, to separate the cooked cells gently to preserve cellular integrity, creating a mealy texture, which is then prepared for drying by incorporating necessary additive substances and ingredients via an Additives Station & Volumetric Dosing Screw. The high-viscosity product is precisely transported by a Mash Pump System to the dryer.

The Drum Dryer evaporates moisture from the potato mash, by applying it on outer surface of the heated, rotating cylinder, often utilizing applicator rolls to spread the mash into a thin layer. This process forms a continuous dried sheet that is scraped off by a specialized knife and broken into flakes by a pre-breaker screw. The Wind shifter then separates light flakes from heavier waste. After separation, the desired light flakes are conveyed to Milling and Sifting section.

The Milling and Sifting section employs Air Transport using a vacuum system to pneumatically convey dried potato flakes from the dryer's pre-breaker discharge to

a hopper (equipped with a fan and dust filter unit) for air separation, after which the flakes are dosed into the Mill Sifter, which controls the final particle size to achieve desired quality separation, '***optionally utilizes the Powder Mill Unit and its bypass system to reduce flakes into high bulk density powder while the adjacent Big-Bag unloading station allows a separate input for emptying bulk bags***', and then employs the Aero-mechanical Conveyor for gentle, vertical transport to the Dry Product Silo for storage prior to packaging.

4. **Freezing, Packing, F.G. Storage (Frozen French Fries) - Purchaser Scope:**

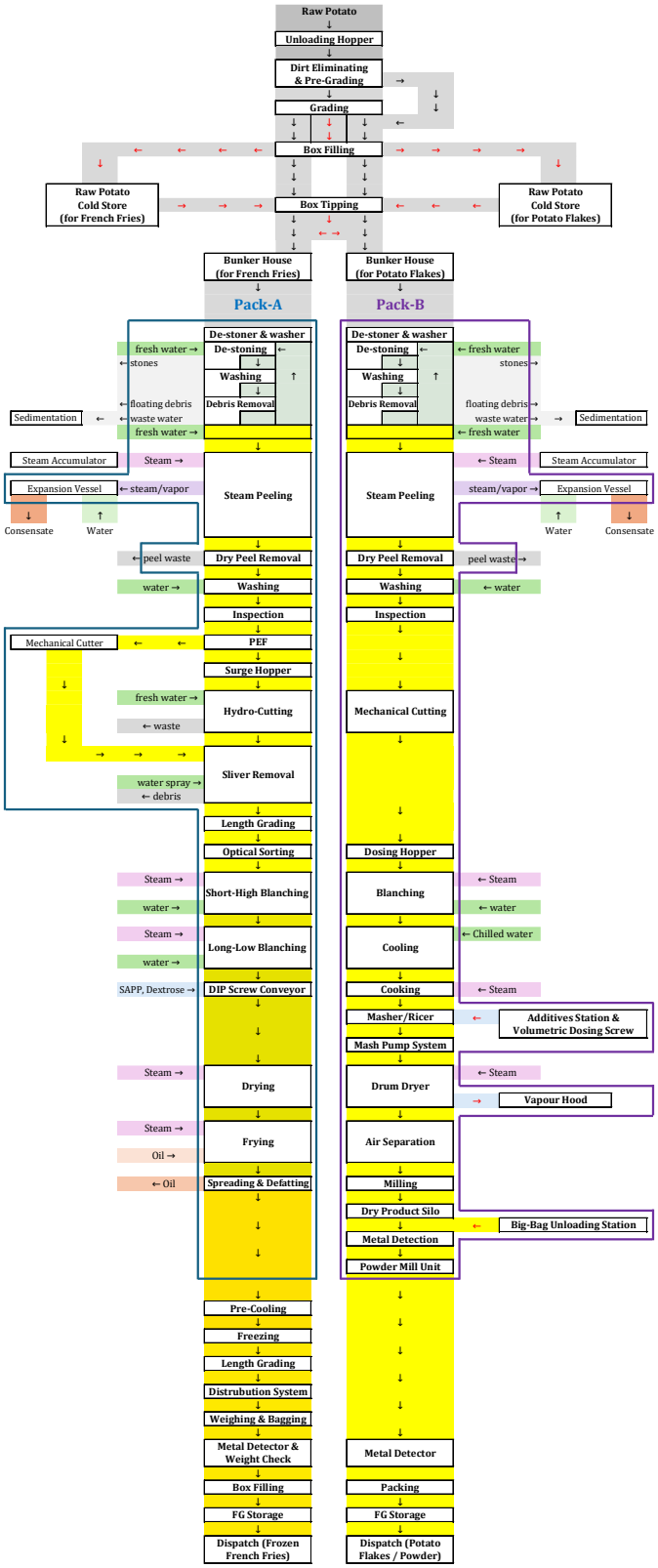
   Par-fried potato strips are fed into 'Fluidized-Bed IQF System' passed sequentially through the precooler & freezer to rapidly achieve an equilibrated core product temperature of minus 18 Deg.C.

   The distribution/inspection phase involves sorting product using a Length Grader, managing product flow via a Reversible Conveyor for potential recycling of under-processed material, precisely feeding the packaging line using Distribution Shakers and ScaleFeed Shakers, conducting final quality assurance checks using a Metal Detector + Weigh Check system.

   The Weighing & Bagging stage utilizes multi-head weighers and continuous motion vertical form-fill-seal (VFFS) baggers to accurately measure and package French Fries. The packed pouch are collect on Round Table and then put in the Bins and stored in the Racks of Deep Freeze Storage under controlled temperature conditions before shipment.

5. **Packing, F.G. Storage (Potato Flakes) - Purchaser Scope:**

   Finished flakes are packed into bags ranging from 5 to 25 kg using the Bag Filling Machine or in bulk using the Big Bag Filling Station, which can fill up to 1000 kg. The filled bags are then palletized and stored in the warehouse under controlled humidity.


Raw Potato
Unloading Hopper
Dirt Eliminating & Pre-Grading
Grading
Box Filling
Raw Potato Cold Store (for French Fries)
Box Tipping
Raw Potato Cold Store (for Potato Flakes)
Bunker House (for French Fries)
Bunker House (for Potato Flakes)
Pack-A
Pack-B
De-stoner & washer
De-stoning
Washing
Debris Removal
fresh water →
← stones
← floating debris
← waste water
fresh water →
Sedimentation
Steam Accumulator
Steam →
Expansion Vessel
← steam/vapor
Consensate
Water
Steam Peeling
← peel waste
Dry Peel Removal
water →
Washing
Inspection
Mechanical Cutter
PEF
Surge Hopper
fresh water →
← waste
Hydro-Cutting
Sliver Removal
water spray →
← debris
Length Grading
Optical Sorting
Steam →
Short-High Blanching
water →
Steam →
Long-Low Blanching
water →
SAPP, Dextrose →
DIP Screw Conveyor
Steam →
Drying
Steam →
Frying
Oil →
← Oil
Spreading & Defatting
Pre-Cooling
Freezing
Length Grading
Distrubution System
Weighing & Bagging
Metal Detector & Weight Check
Box Filling
FG Storage
Dispatch (Frozen French Fries)
← fresh water
stones →
floating debris →
waste water →
Sedimentation
← fresh water
← Steam
Steam Accumulator
steam/vapor →
Expansion Vessel
Water
Consensate
peel waste →
← water
Mechanical Cutting
Dosing Hopper
← Steam
Blanching
← water
← Chilled water
Cooling
Cooking
← Steam
Masher/Ricer
Additives Station & Volumetric Dosing Screw
Mash Pump System
← Steam
Drum Dryer
Vapour Hood
Air Separation
Milling
Dry Product Silo
Big-Bag Unloading Station
Metal Detection
Powder Mill Unit
Metal Detector
Packing
FG Storage
Dispatch (Potato Flakes / Powder)

Pack-A
Processing Line to manufacture
Frozen French Fries at a minimum capacity of 3000 kg/hr

Details of Equipments:

2. **Processing Line for Frozen French Fries Production:**

Product Specification:

- *Raw Material:*
  - Graded FF Variety potatoes, >20% solid content, 55-120 mm diameter.

- *Loss Targets:*
  - Peeling Loss <8% (max 10%),
  - Cutting Loss <3% (max 5%),
  - Sliver Loss <3% (max 5%),
  - Nubbin Loss <4% (max 6%).

- *Drying Targets:*
  - Minimum 15% moisture removal (including 3% surface water)

- *Frying Targets:*
  - Minimum 3600 kg/hr incoming,
  - minimum 3100 kg/hr out,
  - minimum 25% evaporation,
  - minimum 29% finished solids,
  - maximum 6% oil pickup,
  - maximum 65% moisture content subject to DS+FAT in End Product

- *Freezing Target* (on basis of 7x7 cut size & 270 kgs/m^3):
  - Capacity 4500 kg/hr, product temperature minus18 deg C (equilibrated)

- *Product Output:*
  - Frozen French Fries at a minimum capacity of 3000 kg/h (Classic Fries, Straight Cut, 7x7 mm cut size)

2.1. **Raw Potato Preparation:**

2.1.1. **De-stoner & washer:**

Whole unpeeled potatoes shall be de-stoned and washed to remove heavy impurities and floaters. Functionally, it operates for destoning, soil removal, and washing.

The destoning system employs turbulent spiral water motion, causing heavier particles such as stones to settle into a stone collection chamber, which are then removed via a motor and gearbox driven discharge belt.

Lighter floating debris is carried away by a raking system positioned after the washing drum.

Internally, the unit features two rotary drum screens with paddles for product conveyance, each powered by electric gear motors, and spray bars in the second drum for washing. It also includes water collection tanks with overflow outlets, flush drains, cleaning hatches, and a static filter. The entire system is enclosed by a hood with side-opening lids, equipped with safety sensors for inspection and maintenance.

Utility control is automated using pneumatic ball valves for the fresh water (first fill) and recycled water lines, and for spray water line, all housed within a central stainless-steel cabinet fitted with a air preparation/service unit.

Capacity: Minimum 10000 kgs/hr (Product)

Type: Drum Type, preferably not round

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.1.2. **Inclined Belt Conveyor:**

Transports whole unpeeled potatoes, typically upwards, using a cleated rubber belt (food grade only) to prevent slippage. It shall be designed to handle Whole Unpeeled Potatoes, serves to transport the product, typically upwards, immediately after the de-stoning and washing phase, adjusting its length to align with the input height of the steam peeler.

The transport mechanism relies on a cleated rubber belt (food grade only) PU belt with flights (lifters), ensuring the prevention of slippage during the upward movement. It is powered by a direct drive system using a motor and gearbox.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.1.3.

2.1.4. **Continuous Steam Peeler:**

The Steam Peeler unit shall be of 350 litre capacity, engineered for precise and low loss peeling performance. The system operates using short bursts of high-pressure steam, with adjustable steam exposure times typically ranging from 5 to 18 seconds.

The core of the unit is a carbon steel pressure vessel supported by a heavy-duty AISI 304 stainless steel frame with adjustable feet. Product weighing is handled through a robust weigh hopper equipped with three load cells and a revolving discharge door driven by an gear motor. The vessel door is pneumatically operated by two actuators (aluminum, high temperature rated) for reliable sealing and performance.

Steam control is executed through high-speed slide gate valves, one for steam inlet and one for steam exhaust, both constructed in zinc-coated carbon steel and equipped with pneumatic actuators, solenoids, and proximity switches for accurate timing and detection.

Exhaust steam is routed through carbon steel duct to an SS304 Exhaust (Expansion) Vessel, supported by a SS304 Pipe + Fan system providing a 3000 m^3/hr air volume.

The process is fully automated via an integrated control system includes PLC and a HMI, offering intuitive control of batch load, capacity, and steam cycle parameters. The main control components, including frequency inverters for hopper and vessel drives, are housed in control cabinet. Operator Panel shall be of stainless-steel.

Feature: Exhaust (Expansion) Vessel shall be include.

Quantity: 1 EA

2.1.5. **Inclined Screw Conveyor:**

Transports whole peeled potatoes further processing using a screw mechanism. It shall be designed to handle Whole peeled Potatoes, serves to transport the product, immediately after the peeling phase, adjusting its length to align with the input height of the dry peel removal.

The transport mechanism screw mechanism, including supporting structures and an input hopper, ensuring the robust, contained, and potentially elevated transport. It is powered by a direct drive system using a motor and gearbox.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.1.6. **Dry Peel Removal / Brusher:**

The Dry Peel Remover is a vertical brushing system which shall be hygienic designed to mechanically remove loose skin and dry peel from potatoes through gentle downward conveying by gravity while rotating nylon brushes perform the peeling action.

The unit features brushes optimized for high peel efficiency, minimal product loss, and ease of maintenance. The dry peel waste, collected during brushing, is discharged via a chute to the peel waste hopper for further handling.

Operational control shall be centralized in a stainless-steel cabinet that integrates air preparation /service unit, a pneumatic ball valve for cleaning water supply (actuated by a solenoid valve), and a position feedback system featuring an analog measuring ruler for precise monitoring of brush position and operation.

Quantity: 1 EA

2.1.7. **Peel Waste Pump with Hopper:**

The Peel Waste Pump System shall be designed to receive and discard potato peel waste, immediately following the Dry Peel Remover. Peel waste separated mechanically by the vertical nylon brushes is directed via a chute to the stainless-steel collection hopper of the pump system.

The unit employs a Progressive Pump, driven by a direct-drive motor and gearbox, ensuring smooth and continuous transfer of the peel slurry. The system includes a stainless-steel hopper for peel waste collection and is equipped with pneumatically operated valves, including a solenoid, for control.

Quantity: 1 EA

2.1.8. **Washing Screw Conveyor:**

The Washing Screw Conveyor is specified as a single unit dedicated to washing and transporting whole peeled potatoes to ensure they are clean

before moving to the subsequent processing stages, such as the Reclaim Wheel Sieve or De-watering drum.

The equipment is typically of the Screw Type, featuring a direct drive consisting of a motor and gearbox, supporting structure, input hopper, overflow, and a spray-bar.

The system also incorporates controls and utility connections for water management, specifically requiring a central stainless steel cabinet with a air preparation/service unit, a pneumatic ball valve for the initial fresh water filling, and a pneumatic ball valve for the fresh water spraying supply.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.1.9. **Reclaim Wheel Sieve / De-watering drum:**

Rotating Drum Type unit responsible for collecting and separating water and debris from the washing screw conveyor system. Functionally, the reclaim wheel guides washing water caught in a hopper to separate fine particles. The system includes a dedicated pump for water recirculation, ensuring the majority of the water is returned to the washer.

The solid debris collected by the internal screw is transported to the peel waste pump or a waste bin via a screw conveyor. It include a sieve equipped with spraying nozzles, level measurement using an analog pressure sensor and an automatic pneumatic ball valve for draining.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.1.10. **Inspection Roller Conveyor:**

The Inspection Roller Conveyor, intended for the manual inspection of whole peeled potatoes, is primarily to enable manual trimming of defective (Unpeeled portions, bruises, or blackspots, etc.) or oversized potatoes, providing discharge chutes for this purpose. Sun- or wind-burned potatoes and those with serious defects are diverted from the processing lines.

This conveyor shall be Roller Type mechanism, the use of UHMW Side components and incorporating Chutes to Bins for the collection of manually removed rejects, includes a direct drive motor and gearbox.

Capacity: Minimum 10000 kgs/hr (Product)

Feature: Shall be suitable to accommodate 12 labours for inspection

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.1.11. **Transfer Conveyor:**

Transport whole peeled potatoes towards the cutting stage, features a PU Belt, is equipped with UHMW Side guides, and includes Chutes to Bins

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

Note : The inclusion of this item is subject to 'exclusion of PEF' confirmation during the detailed process review and may be excluded from the final scope.

2.1.12. **Inclined Screw Conveyor (for PEF):**

Transports whole peeled potatoes further processing using a screw mechanism. It shall be designed to handle Whole peeled Potatoes, serves to transport the product, immediately after the Inspection Roller Conveyor, adjusting its length to align with the input height of the PEF.

The transport mechanism screw mechanism, including supporting structures and an input hopper, ensuring the robust, contained, and potentially elevated transport. It is powered by a direct drive system using a motor and gearbox

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Feature: Surge Hopper shall be include.

Quantity: 1 EA

Note : The inclusion of this item is subject to confirmation during the detailed process review and may be excluded from the final scope.

2.1.13. **Pulsed Electric Field (PEF) system:**

The Pulsed Electric Field (PEF) System is an industrial-scale continuous treatment unit positioned before the cutting stage. PEF use electric pulse to perforate the cell walls of Potato. This enables the movement of water and other compounds in/out of the cells. PEF treatment softens the potato tissue, minimizing breakage and feathering during cutting, resulting in more uniform fries and higher yields. The treatment requires less cutting force resulting in a smoother cut.

Technically, the system employs a solid-state pulse generator capable of delivering rectangular, unipolar pulse waves at frequencies up to 500 Hz, with a voltage of up to 24 kV and a power output of approximately 18 kW.

The treatment chamber is equipped with titanium electrodes spaced 160 mm apart, housed within a stainless steel (AISI 304) enclosure rated to IP65 for durability and hygiene. The treatment tank has a capacity of about 1500 litres depending on working level, accommodating the continuous product flow. Product conveyance is achieved via a belt with flights, ensuring uniform exposure during treatment.

The system's operations are fully automated through a PLC with a touchscreen HMI, enabling precise control and monitoring of critical parameters such as peak voltage, current, temperature, and conductivity. Built-in safety and interlock circuits, automatic water level control, and floating product handling ensure reliable, safe operation. The unit also includes a Cut Control Module, ensuring consistent cutting performance in downstream processes

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

Note : The inclusion of this item is subject to confirmation during the detailed process review and may be excluded from the final scope.

2.2. Cutting & Grading:

2.2.0 Dividing Conveyor to Mechanical Cutter:

Its function is to transfer product to the subsequent mechanical cutter.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

Note : The inclusion of this item is subject to confirmation during the detailed process review and may be excluded from the final scope.

2.2.1. Mechanical Cutting system:

The mechanical cutting system's primary function is to slice washed and peeled potatoes into uniform strips at high speed. These industrial machines are designed for precision and can be adjusted to create various cuts, such as straight, crinkle-cut, or shoestring fries, with a smooth surface finish.

The accuracy of the cut is critical, as it ensures all strips cook evenly during the frying process, which helps to prevent the formation of acrylamide and reduces waste. This system also include blades, movable support frame, and input and output chutes designed to connect from the dividing belt conveyor and discharge product to the infeed of the pump tank

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

Note : The inclusion of this item is subject to confirmation during the detailed process review and may be excluded from the final scope.

2.2.2. Hydro-Cutting System:

The Hydro-Cutting System is designed to cut whole peeled potatoes into precise sizes (7x7 mm, 9x9 mm, 11x11 mm) using high-pressure water jets.

The process begins at the Pump Tank/Feeding Chute, which prevents blockage and cavitation, feeding the potatoes to an 8-inch Stainless Steel Centrifugal Pump. This pump propels the product-water mixture through Acceleration Piping equipped with a Flowmeter to control velocity and ensure optimal cutting performance with minimal blockage.

A Centre Box System houses the Acceleration Tube and Fin-Aligner (or Reducing Tube) to center the product before cutting. The flow shall orient the potatoes along the long axis during cutting to maximize the yield of desirable long French fry cuts. The Switchbox enables quick vertical change-over of Knife Blocks, made of plastic with stainless steel flanges and fitted with high-quality segmented knives, without interrupting product flow. This design facilitates easy cleaning and maintenance, minimizes fiber accumulation, and ensures consistent cut quality.

After cutting, a Decelerator slows the product stream before it is spread onto a Dewatering Belt/System, which separates the cut strips from the water. The return water is directed to a Water Balance and Settle Tank, designed to collect starch and fine particles and provide a connection point for a Starch Recovery Unit.

The tank includes a floater-controlled automatic valve for level regulation and may feature an anti-foam dosing system and a vortex tank with overflow and pneumatic butterfly valve.

System operation is fully automated via a PLC and pneumatic controls, with a pneumatic knife gate valve integrated to prevent water backflow during knife block changes.

For standard square cuts, the system shall include 18 Knife Blocks (final sizes to be confirmed during the engineering stage), constructed of high-grade plastic with stainless steel flanges and ergonomic grips for safe, hygienic handling.

The Switchbox mechanism allows operators to replace knife blocks vertically without stopping the product pump. Regular knife block changes are carried out to remove accumulated fibers from knife corners during production, thereby preventing shattering and maintaining clean, uniform cuts.

Capacity: Minimum 10000 kgs/hr (Product)

Feature: Provision to connect Mechanical Cutting and Starch Recovery Unit shall be include.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.2.3. **Knife Sharpener:**
For sharpening of Knives for Hydro-Cutting System.

Quantity: 1 EA

2.2.4. **Sliver Remover:**

The Sliver Remover is designed to remove undesirable slivers from the raw cut potato strips.

This unit is specified as a Roller Type (SS). The equipment operates using seven special shaped stainless-steel rollers with flat surfaces; these rollers are cladded with a special coating to create the necessary friction for product transport, and they sort out smaller products via the adjustable openings between them. The distance between the rollers can be adjusted step-less even during production using a pendulum mechanism.

To maintain cleanliness and maximize sorting efficiency, the Sliver Remover includes a spraying bar mounted above the product bed to apply a small amount of water to remove free starch, thereby raising the discharge of the small pieces, and it also utilizes profiled plastic side guiding to prevent sticking.

The machine is driven by an electric gear motor, sometimes involving an indirect chain and sprockets system.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.2.5. **Length Grader:**

The Length Grader is designed to separate raw potato strips based on length into 3 different grading levels primarily by removing too short pieces (nubbins).

This equipment operates using a shaker type of mechanism with exchangeable decks, functioning as an indirectly driven vibratory conveyor powered by either electromagnetic means or two out-of-balance motors requiring a frequency inverter.

The physical configuration includes a flat receiving deck, a closed pan bottom to collect graded product, and two screen layers, with the first level featuring exchangeable perforated screens. The unit's construction utilizes a rigidized product surface, a support frame made of closed tubing, and features include active monitoring.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.2.6. **Optical Sorter:**

The Optical Sorter is technologically designed to examine and sort wet French fry strips, removing defects or undesirable pieces based on visual characteristics.

Key mechanical and imaging improvements contributing to its operational efficiency include an improved mechanical frame, LED lighting, and improved fast air valves.

The sorter features a camera configuration using 6 IRGB cameras coupled with IR transmission (IR Tr cam) in a special 5/6 setup, enabling it to see five out of the six visible sides of the product. The effectiveness of the sorting process is bolstered by this IR transmission technology, which works to eliminate dirtiness on the belt, reduce shadow effects next to the product, and achieve optimal position recognition. Furthermore, specialized lenses are used to ensure a detailed and sharp image, irrespective of the french fry's location.

The sorting decisions are executed using software based on artificial intelligence (AI) for user-friendly programming through images, offering 2-Way sorting, while the use of bullet valves helps reduce false rejects to a minimum.

Required minimum operational metrics include a capacity of minimum 6000 kg/hr of wet French fry strips, a minimum belt width of 1200 mm, and the utilization of a unique high stroke shaker to guarantee better singulation of the product.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.2.7. **Reject Belt - Sorter:**

The Reject Belt is designed to transport rejected product, such as debris or imperfect fries, away from the main product stream. This unit s a PU Belt and includes features such as UHMW Side components and Chutes to Bins.

Capacity: Minimum 3000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.2.8. **Accept Belt - Sorter:**

The Accept Belt is designed to transport accepted product to next stage. This unit is a PU Belt and includes features such as UHMW Side components and Chutes to Bins.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Feature: There shall be suitable space for manual inspection too.

Quantity: 1 EA

2.2.9. **Incline Belt Conveyor to Blancher:**

Its function is to transport the product to next stage. This unit is a PU Belt and includes features such as UHMW Side components and Chutes to Bins.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.3. **Blanching & Dipping:**

2.3.1. **Short Hold (SH) Blancher:**

The Short Hold (SH) Blancher, designated as the short-high screw blancher, designed to achieve rapid enzyme inactivation, initiate starch

gelatinization, melt cell walls, and improve cell porosity for subsequent efficient frying, which is accomplished by gently immersing the cut product in a hot water bath. It maintains a short retention time of 2 to 5 minutes at a fill rate of 50%.

Key technical specifications include heating via a special steam injection system, managed by an automatic steam pressure control unit (Steam Control Valve for Temperature & Flow). The construction includes a fully insulated blancher body (except for the ferris wheel housing and stern plate).

Operational mechanisms include a radial water circulation system utilizing wedge wire screens to ensure temperature consistency and prevent product clumping, along with a gentle ferris wheel outfeed system for product discharge.

Crucially, the system features detailed automation controls, including an analog pressure sensor for level measurement, a proportional refreshing water supply system involving an analog flowmeter and valve positioner, and automatic drain valves (pneumatic ball valves) for draining both the blancher and the discharge screw.

Other essential components are the infeed flume, cleaning hatches, a dedicated water supply valve for lubrication of the slide bearing, and an automatic control purge valve specifically for removing floating debris

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.3.2. **Long Hold (LH) Blancher:**

The Long Hold (LH) Blancher, also referred to as the Screw blancher long-low, is designed for the gentle and energy-efficient pre-treatment of potato strips prior to frying.

Functionally, it is a Screw Type apparatus intended to heat-treat potato strips for a long duration (specifications range of 10 to 25 minutes @ 50% Filling Time) at a relatively low temperature.

This process is critical for the effective leaching of sugars to minimize acrylamide formation and ensure a bright, uniform yellow final product colour. The cut potato product is fully immersed in a hot water bath and gently conveyed by a screw mechanism, with heating facilitated by a special steam injection system requiring 4 bar (g) steam pressure.

The blancher design incorporates features such as a Steam Control Valve for Temperature & Flow, a high-volume axial water circulation system for uniform temperature, and wedge wire screens. Product discharge is typically handled by a separately driven ferris wheel outfeed system or a pump discharge system, minimizing damage and transferring the product via a Transfer Flume. It is equipped with drain valves featuring pneumatic actuators and cleaning hatches

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.3.3. **DIP Screw Conveyor:**

The DIP Screw Conveyor is to transport potato strips through a dipping solution immediately following blanching, serving to apply additives like SAPP and Dextrose, which are crucial for enhancing finished product brightness, preventing oxidation, and controlling the final colour.

The unit driven by an gear motor, include two dosing hoppers for SAPP and Dextrose, safety hatches, supports, and hinged covers that facilitate cleaning

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.4. **Drying:**

2.4.1. **Shaker (Infeed to dryer):**

The Shaker (Infeed to dryer) is two-fold: to dewater the product by removing surface water from the blanched fries, and to ensure an even spread over the full conveyor width to facilitate uniform feeding to the dryer.

This machine is designed to handle a minimum capacity of 6000 kg/hr of wet French fry strips). It is driven by an out-of-balance motor, features a rigidized product surface, and incorporates exchangeable wire mesh dewatering screens situated above a water collection pan.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.4.2. **Dryer:**

The dryer shall designed to reduce the moisture content by using a counter flow concept where the air opposes the product direction to ensure even drying across the full width of the product bed by evaporating water across two modules to minimize the rate of hydrolytic fat breakdown, meeting the minimum drying surface area of 19 m^2 requirement and a maximum water evaporation rate of 960 kg/hr. Heating shall be achieved using steam via heat exchangers to maintain a recirculation temperature. Product Flipping Arrangements for propre drying of the product is necessary.

For control, belt speeds are individually regulated, and air humidity within each section is managed via exhaust fans and air inlet valves to control the drying curve. The conveyor system, using stainless steel eye link belts or perforated stainless steel plates, is maintained by an automatic lubrication system for the chains.

Hygiene shall be prioritized with a fully insulated structure, sloped internal surfaces, a high-pressure water cleaning station at the infeed of each module, and an automated CIP system featuring Turbo disk nozzles positioned above the conveyor, behind the heat exchanger, and in the fan center.

Capacity: Minimum 6000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.4.3. **Equilibrium Belt Conveyor:**

The Equilibrium Belt conveyor is transporting French fry strips while allowing the product's internal moisture to reach equilibrium before it proceeds to frying. It include UHMW Side guards, Chutes to Bins, and a PU Belt, shall allow manual inspection.

Capacity: Minimum 6000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.5. **Frying:**

2.5.1. **Vibratory Conveyor (Infeed to fryer):**

The Vibratory Conveyor is to ensure an even spread over the full conveyor width to facilitate uniform feeding to the fryer. This machine is designed to handle a minimum capacity of 5000 kg/hr of French fry strips).

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.5.2. **Frying System:**

The strips are submerged and conveyed through the fryer's hot oil bath on a continuous internal transport system. This continuous frying process, also known as par-frying, is a crucial step in producing frozen French fries. Its main objectives are to remove surface moisture, develop a crisp texture, partially cook the product, inactivate the remaining enzymes, and enhance colour for the desired appearance and quality.

The Frying System shall be designed for zonal flow continuous frying of French fries, constructed primarily of SS304, the unit has an effective width of minimum 1000 mm, employs a low oil holding capacity in order to achieve low oil turnover ratio, achieved through laminar flow using multiple oil injections and discharges (3 Inlet & 3 Outlet), with the stainless steel transport belt supported on Teflon strips under the pan.

Crucial support equipment includes a Shell and tube type Heat Exchanger rated for a minimum of 1500 kW, utilizing thermo oil or steam for heating, and a main Oil Circulation Pump with a minimum capacity of 200 m^3/hr.

For continuous oil management, the system incorporates a full-flow filtration unit that filters the oil continuously screen, along with an automatic oil supplementation set and fast fill oil connection.

The fryer features an electro-mechanical lifting hood operated by electrically driven screw jacks and telescopic evacuation stacks with adjustable throttle valves; additionally, the system includes piping connection for a Fire Fighting System within the hood.

The CIP system is built-in for automatic cleaning of the hood and internal components, and below the pan, the belt return uses an oil

collection tray and waste auger to separate oil from waste particles for recycling.

Feature: **Provision to connect Future Coating System shall be include**.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.5.3. **Oil Recovery System along with Oil Filtration System:**

The Oil Recovery System (ORS) is designed to recover excess oil immediately behind the fryer. This system operates as a Belt Type with One Flip, handling product with a specified 7 X 7mm cut size.

The french fries are conveyed on an SS wire mesh belt, passing through a deoiling module where the product is exposed to two suction openings, separated by a small cascade that enables the product to tumble, ensuring maximum oil removal.

System also the conveyor assembly include the belt drive, drive sprockets, bearings, and a crumb discharge system employing scrapers on chains on the bottom. The air system utilizes a SS304 fan and stainless-steel ducting connected to a single cyclone. Separated crumbs are discharged via a rotary valve.

The recovered oil is collected in the Oil Return System, which features an isolated and electrically traced pump tank monitored by magnetic level switches, returning the oil via an pump. An oil flush system consisting of spraying bars shall be integrated within the system to prevent crumb buildup during operation.
Oil filtration unit to be added - generally employees spreading of oil on paper filter that removes crumbs and returns back the oil. Provision to add TPC binder in filtration system to be provided

Capacity: Minimum 5000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.5.4. **Fresh Oil Storage Tank:**

This tank is designed to hold the vegetable oil during cleaning and non-production time. It serves as the primary reservoir from which fresh oil can be introduced into the frying system via an automatic oil level control arrangement. It also includes heating element mounted in the bottom

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.5.5. **Used reclaim Oil Tank:**

This tank is used for oil recovered from the process, presumably for purification or controlled disposal/reuse

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.5.6. **Buffer / Day Oil Storage Tank:**

This tank ensures that sufficient frying oil is readily available to maintain continuous operation of the fryers, compensating for oil absorbed by the product (oil pickup) or minor process losses.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.5.7. **Spreading & Defatting Shaker:**

Spreading & Defatting Shaker will remove the excess surface oil from the fried potato strips and ensuring even spreading. The unit is direct driven by a gear motor and features a smooth product surface, along with straight in feed and straight discharge mechanisms. Key to its function are the exchangeable de-oiling /defatting screens, typically of the wire mesh type.

Capacity: Minimum 4500 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.6. Accessories /Auxiliary / Spars / Additional Equipments:

2.6.1. Anti-foam Dosing system:

This system is used to introduce anti-foam agents into the high-pressure water system, thereby controlling foam in the water circulation used for cutting and conveying the potato strips.

Quantity: 1 EA

2.6.2. Platforms, Frames, Supports, Stacks, Rails:

All structural elements including platform frames, support structures, handrails, and stairs shall be constructed from Stainless Steel 304 to ensure durability, corrosion resistance, and compliance with hygienic design standards required in food processing environments. The walking surfaces (gratings) shall be made of Anti-Skid SS for enhanced safety and ease of cleaning. The design shall incorporate box profile framing, safety railings on all four sides, and inclined stairs with handrails for safe operator access to elevated areas.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

2.6.3. Instruments/controls/accessories:

All required instruments/controls/accessories which are not mentioned above.

Quantity: 1 EA

2.6.4. Spare for 2-year operation:

The Bidder shall provide spares for two year's continuous operation of Machine.
Feature: 75 sets of spare knives for cutting block shall be include.

Quantity: 1 EA

2.7. Electrical:

2.7.1. Electrical Control Equipment:

The system shall be engineered as a fully automated plant, integrated through a PLC-based Control System with selectable operating modes.

The production line shall employ fully automatic process control across all stages; however, certain critical operations may include manual inspection as required for quality assurance.

The electrical section serves to power, control, and automate the continuous production process while ensuring stringent operational safety across the line.

The core function relies on a centralized Control Panel, include PLC, SCADA, and VFDs to provide comprehensive control and monitoring via Field HMIs, managing parameters such as steam time, batch load setting, and motor speeds throughout the various processing stages.

Electrical power distribution and regulation ensure that numerous machine drives (motor + gearbox) are frequency-controlled to manage material flow and processing speeds, particularly for equipment like the Steam Peeler vessel drives, screws, and conveyors.

Furthermore, the electrical scope includes the physical components necessary for distribution and isolation, such as Junction Boxes and Isolators and services covering.

- HMI
  - Size: 12”
  - Quantity: 5 Nos

- Engineering PC
  - I7 Processor with latest generation.
  - 512 GB SSD Drive
  - 1 TB Sata hard drive
  - 32 GB Ram
  - 32-inch Monitor
  - Quantity: 1 Nos

- Operator PC
  - I7 Processor with latest generation.
  - 512 GB SSD Drive
  - 1 TB Sata hard drive

- 32 GB Ram
- 32-inch Monitor
- Quantity: 1 Nos

- MIS Server PC
  - Xenon processor of latest generation.
  - Windows server 2016 or latest edition.
  - 1 TB hard drive
  - Raid 5 configuration
  - 32 GB Ram
  - 32-inch Monitor
  - Quantity: 1 Nos

- Junction Box
  - MOC: SS 304
  - Door Thickness: 2 mm
  - Body Thickness: 1.6 mm
  - Stiffener required to prevent warpage
  - Quantity: 1 Lot

- Isolator
  - MOC: SS 304
  - Start, Stop, Emergency button
  - Plug Socket
  - Quantity: 1 Lot

- VFD
  - Built in choke
  - EMC filter
  - Input choke with 3% impedance shall be provided in power feeding line to VFD.
  - Quantity: 1 Lot

- PLC
  - High end PLC with required hardware for integration with other OEM panel and Central plant Automation system
  - 30% Spare memory and 25% spare tag/Screens to be available after commissioning
  - PLC input output shall be designed in such a way that 15% spare PLC I/O remain available after commissioning.
  - PLC model shall be of latest configuration
  - Not in end-of-life phase by OEM
  - Quantity: 1 Nos

- PLC Panel

- Make: Rittal / Hoffman / European
- MS enclosure with Glass window
- Glass bidding shall be of V Groove type
- Quantity: 1 Lot

- PLC Remote I/O enclosure and process Area panels
  - It shall be dust and vermin proof.
  - Stiffener shall be provided to prevent warpage.
  - Door thickness shall be 2 mm for door
  - Minimum thickness 1.6 mm for body.
  - Mounting plate shall be of GI
  - Quantity: 1 Lot

- MCC (Motor Control Center).
  Electrical panels and bus duct shall be delivered in convenient shipping section by the manufacturers. The Bidder shall be responsible for final assembly and inter-connection of bus bars/ wiring. Foundation channel shall be grouted in the flooring by the Bidder. Switchgear shall be aligned and leveled on their base channels and bolted or tack welded to them as per the instructions of the Engineer-in-charge. The earth bus shall be made continuous throughout the length. Loosely supplied relays and instruments shall be mounted and connected on the switchgear. The contacts of the draw-out circuit breakers shall be checked for proper alignment and interchangeability.

  After erection the switchboard shall be inspected for dust and vermin proof ness. Any hole, which might allow dust or vermin etc. to enter the panel, shall be plugged suitably at no extra cost.

  If the instrument transformers are supplied separately, they shall be erected as per the direction of the Engineer-in-charge. The Bidder shall fix the cable glands after drilling the bottom/ top gland plates of all switchboards with suitable holes at no extra cost.

  Range of overload relays/timers etc. shall be checked with requirement of motor systems actually to be connected at site and if the same is under-sized/over-sized, it shall be brought to the notice of Engineer-in charge, who shall arrange procurement of correct rated components. However, the Bidder shall not charge anything extra for labor for such replacements.

The bus duct shall be suitably supported between switchgear and transformer. The opening in the wall where the duct enters the switchgear room shall be sealed to avoid rainwater entry. The foundation of the switchgear shall be raised suitably for minor adjustment to ensure proper alignment and connection of the bus duct at no extra cost. Expansion joints, flexible connection, etc. supplied by the manufacturer of the bus duct shall be properly connected.

The switchboard shall be fabricated using pressed and shaped cold rolled steel sections structure of adequate thickness. The sheet steel used for panels shall be min. 14 SWG sheet except that the partition plates, inter-panel barriers and cubicle doors may be made of 16 SWG. The switchboard shall consist of free-standing front and back open-able panels arranged to form a continuous line-up of uniform height. Cold rolled sheets shall be used for doors and front covers. Doors shall be hinged type and bus bars, and cable alleys covers shall be bolted type.

Switch Board shall be extensible at both ends by addition of vertical sections. Ends of the bus bars shall be suitably drilled for this purpose. Panels at extreme ends shall have openings, which shall be covered with plates screwed to the panel. The switchboard shall be provided with integral base frame. The panel base plate/cable gland plate shall be 2.5 mm thick. The switchboard shall conform to degree of protection not less than IP 42. Gaskets of durable material shall be provided for doors and other openings. Suitable hooks shall be provided for lifting the boards. These hooks when removed, shall not leave any opening on the board.

All hardware shall be corrosion resistant. All joints and connections shall be made by galvanized zinc passivated or cadmium-plated high tensile strength steel bolts, nuts and washers secured against loosening.

The maximum and minimum operating handle/push button height of any feeder shall not be more than 1900 mm or less than 300 mm with reference to panel bottom. IMCC shall be extendable to both sides. Total height of panel shall not exceed 2300 mm. Supporting arrangements for dressing of power and control cables in cable alleys also shall be provided. Maximum shipping length of MCC shall be as 2500 mm. Space heaters with toggle switches, fuses and thermostat shall be provided in each cable alley.

BUSBAR

Copper busbar with ampacity of 1.2 Amp per sq mm to be provided. Busbar design shall be able to accommodate 20% load for the future expansion. Aluminum earthing bus bare of size 50X6 shall be provided throughout the panel length

- Programming of Automation system
  - Quantity: 1 Job
- Integration with all other OEM Panels shall also include.

Quantity: 1 Job

2.8. **Installation, Testing, Commissioning, acceptance, Training & Service Cover:**

2.8.1. **Supervision for Installation, Start-up assistance, Testing, Commissioning, acceptance & Training:**

Design Qualification (DQ)

Design qualification (DQ) for the complete system with all its components, is to be prepared by bidder and submitted to purchaser for approval. DQ document should comprise of Detailed Design Calculations, Equipment GA drawing, instrumentation details and detailed P&ID etc. Design code for all fabricated items needs to be mentioned in the documents as per applicable standards.

Quality Assurance Plant (QAP) which includes material inspection, testing, Fabrication shall be submitted to purchaser for approval

Installation Qualification (IQ)

Installation Qualification shall include the following activities:

- Preparation of IQ protocol (which includes correct component selection, installation as per OEM, connection of all connected utilities, use of approved skilled manpower, approved quality consumables, compliance to BEP and statutory required) shall be done by Bidder and submitted for approval.
- After completion of installation, the successful Bidder shall check /verify whether installation of each and every

component of the plant is as per approved layout, P& ID drawings and as per order specifications.

- The scope also includes the successful Bidder shall tag mark / neatly
  type lettering Name of equipment, capacity, direction flow, etc on major component, piping. Lettering and location

Operational Qualification (OQ)

The successful Bidder shall submit OQ & PQ documents, after approval
of DQ & IQ documents, as per approved protocol.
OQ document should log/ record data during initial operations for the
following:

- Duty/ capacity range (with Max & min)
- Operating conditions (ambient /room condition)
- Inlet & outlet product flow conditions.
- Safety checks

Performance Qualification (PQ)

After the system has been stabilized, the successful bidder shall measure / record actual performance parameters for all quipment, as indicated in the OQ. PQ should conform to the intended system performance as per order/ design (with necessary calculations if any). The test readings in general shall be taken by the supplier in the presence of client & purchaser representative.

All report formats (protocol) and acceptance criteria should be approved by purchaser & client adequately in advance of starting test. All instruments should be calibrated and certificate copy should be attached with reports.

PROJECT MANAGEMENT

Time Schedule

The project execution shall be time-bound as per the mutually agreed time schedule which would not exceed date mentioned in 'DELIVERY & TIMELINE'

The Project Manager will provide the Purchaser's Project in charge with monthly progress reports which clearly indicate the actual Vs. planned

progress and the new likely completion dates of supply, erection, commissioning and performance trials.

The project staffing pattern shall be submitted with the offer and should include sufficient personnel to meet the execution time schedule.

Management Team

A competent execution team shall be deputed at site and shall be headed by a Project Manager who shall be adequately experienced in Project Management of such magnitude and type. The Project Manager shall avail of assistance from reputed experts in various fields who shall be directly responsible for satisfactory execution.

The Project Manager shall be responsible for overall implementation of the entire project, from commencement to the final takeover of the plant. Services of a Project Engineer shall be ensured for the day to day operations and co-ordination to ensure successful and satisfactory design, procurement, manufacture, inspection, erection, testing & commissioning of all the equipment/ facilities/ systems within the time-bound schedule.

The Project Manager and Project Engineer shall attend all technical and review meetings between various parties involved in the project and ensure implementation of all decisions taken in the meetings.

The Project Manager shall be responsible for detailed material accounting at site and management of the store maintained at site.

The Purchaser shall nominate a Project In-charge with whom the bidder shall generally communicate/co-ordinate.

The bidder has to fully authorize the Project Manager to take on-the-spot decision with regard to :

- Modification in layout and execution plan to suit local conditions.
- To purchase essential materials from local market to avoid delays.

For smooth execution of the project, a team of Project Manager and Key Personnel shall remain consistent throughout the execution period.

After satisfactory erection and testing, competent commissioning team shall be deputed to establish the performance parameters for a specific period.

Approvals

Bidder shall submit the technical documents and drawings within agreed time schedule. Approval on technical documentation (with or without specified amendments) shall be taken by Purchaser after submission. The amendments which are not in the original scope of work or due to changes in concept, shall be taken up by the bidder as per mutually agreed rates to be decided before execution, and shall be binding on the bidder.

Bidder shall obtain approval for purchase of specific makes of equipment whose makes are not mentioned in his offer. All the detailed design calculations regarding the selection of equipment sizes, System types, etc. shall be submitted to Purchaser for their specific observation and record.

Inspection

The Bidder shall submit the Inspection and Test Plan for complete system for Purchaser's approval. The purpose of this document is to provide guidelines and agreement on the Quality Control activities and inspection clearances of fabricated equipment, materials and bought out equipment being supplied by bidder.

The bidder shall invite Purchaser for inspection and preliminary testing as per approved Inspection and Test Plan. The inspection may be required at various stages of manufacture/assembly for some items. However, for imported items where the inspection has to be done abroad, the bidder shall do the inspection at his cost and submit the necessary test certificate.

Supervision for Installation:

It includes supervising the positioning, installation, interconnecting pipework of Equipments on foundation covering both mechanical and electrical, according to the agreed layout by the bidders qualified representative.

Start-up assistance, Testing, Commissioning, acceptance & Training:

The scope of this service includes supervising the testing, commissioning, acceptance and running product trials to confirm performance parameters, with the project goal set to commence product trials and service load trials.

Training

Training shall be undertaken by the bidder. The bidder would train all levels of staff of the client in operating the plant including managers, engineers, supervisors, operators and maintenance personnel.

Training would be given both at site and the manufacturer's works and a schedule should be proposed by the bidder, together with the content of training programme, their duration and venue.

Training should commence during the erection and commissioning period as follows:

- During erection
  Exposure to the working and construction of the various equipment comprising the various systems of the plant, including instrumentation and controls.

- During commissioning
  Exposure to and training on the operations and maintenance of the various equipment in the plant including the testing, calibration setting of instruments both local and panel mounted.

Familiarization with start up procedures, management operations, basic principles of controls, control during operation and adjustments, fault finding and including operation and maintenance on control system and maintenance of the plant

Training on safety aspects, service and machine guidelines, operator trouble shooting guidelines for operation and maintenance staff

2.8.2. **Service Cover: (4 Visits per annum)**

The Bidder representatives (technical and skilled engineer) shall attend the project for continuous five working days in each quarter throughout one year after commissioning, product trial and acceptance of the plant. These visits shall cover meetings, training, equipment adjustment, &

servicing. These visits shall not cover guarantee work, which shall be undertaken separately**.**

The objectives of service covers are intended to ensure that the efficiency of the plant is maintained at the optimum level and

- To help improve operating and maintenance procedures.
- To keep the plant adjusted for optimum energy efficiency, product quality and minimum product losses.
- To arrange for service visits by specialists to inspect, service and carry out reports.
- To carry-out and audit of plant operating efficiency at regular intervals.

Note : The no. of skilled technical engineer deployed for the service cover shall be decided by the bidder.and all expenses during service visit shall be borne by bidder.

APPROVED MAKES

The table below specifies the preferred approved makes of major equipment/ accessories. Where more than one makes are considered for an item OR no make is mentioned in the bid/order, bidder shall obtain prior written approval of Purchaser before commencing the manufacturing/placing an order on bidder as the case may be. However, as regards to the ultimate makes to be supplied to these projects, makes shall be finalized in consultation with the purchaser. **For equipment for which we had mentioned 'European' should be strictly 'Made in Europe' only.**

Technical Details Serial No.	Material Description	Preferred Make
Processing Line for Frozen French Fries Production		
	Raw Potato Preparation	
2.1.1.	De-stoner & washer	European : Kiremko / Tummers / TNA / FPS
2.1.2.	Inclined Belt Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.1.4.	Continuous Steam Peeler	European : Kiremko / Tummers / TNA / FPS
2.1.5.	Inclined Screw Conveyor	European : Kiremko / Tummers / TNA / FPS
2.1.6.	Dry Peel Removal / Brusher	European : Kiremko / Tummers / TNA / FPS
2.1.7.	Peel Waste Pump with Hopper	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.1.8.	Washing Screw Conveyor	European : Kiremko / Tummers / TNA / FPS
2.1.9.	Reclaim Wheel Sieve / De-watering drum	European : Kiremko / Tummers / TNA / FPS
2.1.10.	Inspection Roller Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.1.11.	Transfer Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.1.12.	Inclined Screw Conveyor (for PEF)	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.1.13.	Pulsed Electric Field (PEF) system	European : ELEA / Pulse Master / Heat & Control
	Cutting & Grading	

2.2.0.	Dividing Conveyor to Mechanical Cutter	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.2.1.	Mechanical Cutting system	European : Kiremko / Tummers / TNA / FPS
2.2.2.	Hydro-Cutting System	European : Kiremko / Tummers / TNA / FPS
2.2.3.	Knife Sharpener	European : Kiremko / Tummers / TNA / FPS
2.2.4.	Sliver Remover	European : Kiremko / Tummers / TNA / FPS
2.2.5.	Length Grader	European : Kiremko / Tummers / TNA / FPS
2.2.6.	Optical Sorter	European : Tomra / Optimum / Key
2.2.7.	Reject Belt - Sorter	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.2.8.	Accept Belt - Sorter	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.2.9.	Incline Belt Conveyor to Blancher	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
	Blanching & Dipping	
2.3.1.	Short Hold (SH) Blancher	European : Kiremko / Tummers / TNA / FPS
2.3.2.	Long Hold (LH) Blancher	European : Kiremko / Tummers / TNA / FPS
2.3.3.	DIP Screw Conveyor	European : Kiremko / Tummers / TNA / FPS
	Drying	
2.4.1.	Shaker (Infeed to dryer)	European : Kiremko / Tummers / TNA / FPS
2.4.2.	Dryer	European : Kiremko / Tummers / TNA / FPS
2.4.3.	Equilibrium Belt Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
	Frying	
2.5.1.	Vibratory Conveyor (Infeed to fryer)	European : Kiremko / Tummers / TNA / FPS
2.5.2.	Frying System	European : Kiremko / Tummers / TNA / FPS
2.5.3.	Oil Recovery System along with Oil Filtration System	European : FoodeQ / Kiremko / Heat & Control
2.5.4.	Fresh Oil Storage Tank	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.5.5.	Used reclaim Oil Tank	Indigenous :

		NSSPL/ Fabcon /Kiron-MSPL
2.5.6.	Buffer / Day Oil Storage Tank	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.5.7.	Spreading & Defatting Shaker	European : Kiremko / Tummers / TNA / FPS
	Accessories /Auxiliary / Spars / Additional Equipments	
2.6.1.	Anti-foam Dosing system	European : Kiremko / Tummers / TNA / FPS
2.6.2.	Platforms, Frames, Supports, Stacks, Rails	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
2.6.3.	Instruments/controls/accessories	European : Kiremko / Tummers / TNA / FPS
2.6.4.	Spare for 2-year operation	European : Kiremko / Tummers / TNA / FPS
	Electrical	
2.7.1.	**Electrical Control Equipment**	
	Computer	Dell/HP
	Network Printer	HP/Cannon
	PLC	Siemens/Rockwell
	HMI/SCADA	Siemens/Rockwell
	Variable Frequency Drive	Danfoss/Siemens/Rockwell/ABB
	MCB	Indigenous : L&K Imported: Schneider/Siemens/ ABB
	MCCB	Indigenous : L&K Imported: Schneider/Siemens/ ABB
	MPCB	Indigenous : L&K Imported: Schneider/Siemens/ ABB
	ACB	Indigenous : L&K Imported: Schneider/Siemens/ ABB
	Instrument	E&H/Emerson
	Panel Manufacturer	Indigenous : CPRI Approved Imported: CE/ European Approved
	Ethernet Switches Unmanaged	Phoenix/Rockwell/Siemens
	Ethernet Switches managed	Cisco/Siemens/ Rockwell/Phoenix
	LT armored cable	Indigenous : Lapp/RR/KEC/RPG

		Imported: CE/ European Approved
	LT Steel braided Power and control cable	Indigenous : Lapp/RR/KEC/RPG Imported: CE/ European Approved
	Instrument Cable - shielded steel braided FRLS ant rodent	Indigenous : Lapp/RR/KEC/RPG Imported: CE/ European Approved
	Instrument Cable -Non shielded steel braided FRLS ant rodent	Indigenous : Lapp/RR/KEC/RPG Imported: CE/ European Approved

Note: While execution, choice of make would be made from the preferred list. Makes and model shall be approved by the purchaser expeditiously.

Pack-B
Processing Line to manufacture
Potato Flakes at a minimum capacity of 1100 kg/hr

3. **Processing Line for Potato Flakes Production:**

Product Specification:

- *Raw Material:*
  - Solid Content: 18 to 23%
  - Input Rate to Washing: Approx. 6750 Kg/hr (+/- 5%)
  - Maximum Reducing Sugars: < 0.3%
  - Maximum Impurities: < 5.0%
  - Density: Approx. 650 kg/m³
  - Diameter Range: 40 to 100 mm (field crop, not pre-graded)

- *Loss Targets:*
  - Peeling Loss <8% (max 10%),
  - Mash Waste <5% (max 7%),

- *Product Output:*
  - Potato Flakes at a minimum capacity of 1100 kg/h (based on the assumption that the raw potato input possesses a minimum solid content of 21%).
  - Moisture Content: 7% (+/- 1%)
  - Bulk Density (Flakes): 180 - 230 kgs/m³
  - Bulk Density (Powder): up to 550 kgs/m³

3.1. **Raw Potato Preparation:**

3.1.1. **De-stoner & washer:**

Whole unpeeled potatoes shall be de-stoned and washed to remove heavy impurities and floaters. Functionally, it operates for destoning, soil removal, and washing.

The destoning system employs turbulent spiral water motion, causing heavier particles such as stones to settle into a stone collection chamber, which are then removed via a motor- and gearbox-driven discharge belt.

Lighter floating debris is carried away by a raking system positioned after the washing drum.

Internally, the unit features two rotary drum screens with paddles for product conveyance, each powered by electric gear motors, and spray bars in the second drum for washing. It also includes water collection tanks with overflow outlets, flush drains, cleaning hatches, and a static filter. The entire system is enclosed by a hood with side-opening lids, equipped with safety sensors for inspection and maintenance.

Utility control is automated using pneumatic ball valves for the fresh water (first fill) and recycled water lines, and for spray water line, all housed within a central stainless-steel cabinet fitted with a air preparation/service unit.

Capacity: Minimum 10000 kgs/hr (Product)

Type: Drum Type, preferably not round

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.1.2. **Inclined Belt Conveyor:**

Transports whole unpeeled potatoes, typically upwards, using a cleated rubber belt (food grade only) to prevent slippage. It shall be designed to handle Whole Unpeeled Potatoes, serves to transport the product, typically upwards, immediately after the de-stoning and washing phase, adjusting its length to align with the input height of the steam peeler.

The transport mechanism relies on a cleated rubber belt (food grade only) PU belt with flights (lifters), ensuring the prevention of slippage during the upward movement. It is powered by a direct drive system using a motor and gearbox.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.1.3.

3.1.4. **Continuous Steam Peeler:**

The Steam Peeler unit shall be of 350-litre capacity, engineered for precise and low-loss peeling performance. The system operates using short bursts of high-pressure steam, with adjustable steam exposure times typically ranging from 5 to 18 seconds.

The core of the unit is a carbon steel pressure vessel supported by a heavy-duty AISI 304 stainless steel frame with adjustable feet. Product weighing is handled through a robust weigh hopper equipped with three

load cells and a revolving discharge door driven by an gear motor. The vessel door is pneumatically operated by two actuators (aluminum, high temperature rated) for reliable sealing and performance.

Steam control is executed through high-speed slide gate valves, one for steam inlet and one for steam exhaust, both constructed in zinc-coated carbon steel and equipped with pneumatic actuators, solenoids, and proximity switches for accurate timing and detection.

Exhaust steam is routed through carbon steel duct to an SS304 Exhaust (Expansion) Vessel, supported by a SS304 Pipe + Fan system providing a 3000 m^3/hr air volume.

The process is fully automated via an integrated control system comprising PLC and a HMI, offering intuitive control of batch load, capacity, and steam cycle parameters. The main control components, including frequency inverters for hopper and vessel drives, are housed in control cabinet. Operator Panel shall be of stainless-steel.

Feature: Exhaust (Expansion) Vessel shall be include.

Quantity: 1 EA

3.1.5. **Inclined Screw Conveyor:**

Transports whole peeled potatoes further processing using a screw mechanism. It shall be designed to handle Whole peeled Potatoes, serves to transport the product, immediately after the peeling phase, adjusting its length to align with the input height of the dry peel removal.

The transport mechanism screw mechanism, including supporting structures and an input hopper, ensuring the robust, contained, and potentially elevated transport. It is powered by a direct drive system using a motor and gearbox.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.1.6. **Dry Peel Removal / Brusher:**

The Dry Peel Remover is a vertical brushing system which shall be hygienic designed to mechanically remove loose skin and dry peel from

potatoes through gentle downward conveying by gravity while rotating nylon brushes perform the peeling action.

The unit features brushes optimized for high peel efficiency, minimal product loss, and ease of maintenance. The dry peel waste, collected during brushing, is discharged via a chute to the peel waste hopper for further handling.

Operational control shall be centralized in a stainless-steel cabinet that integrates air preparation /service unit, a pneumatic ball valve for cleaning water supply (actuated by a solenoid valve), and a position feedback system featuring an analog measuring ruler for precise monitoring of brush position and operation.

Quantity: 1 EA

3.1.7. **Peel Waste Pump with Hopper:**

The Peel Waste Pump System shall be designed to receive and discard potato peel waste, immediately following the Dry Peel Remover. Peel waste separated mechanically by the vertical nylon brushes is directed via a chute to the stainless-steel collection hopper of the pump system.

The unit employs a Progressive Pump, driven by a direct-drive motor and gearbox, ensuring smooth and continuous transfer of the peel slurry. The system includes a stainless-steel hopper for peel waste collection and is equipped with pneumatically operated valves, including a solenoid, for control.

Quantity: 1 EA

3.1.8. **Washing Screw Conveyor:**

The Washing Screw Conveyor is specified as a single unit dedicated to washing and transporting whole peeled potatoes to ensure they are clean before moving to the subsequent processing stages, such as the Reclaim Wheel Sieve or De-watering drum.

The equipment is typically of the Screw Type, featuring a direct drive consisting of a motor and gearbox, supporting structure, input hopper, overflow, and a spray-bar.

The system also incorporates controls and utility connections for water management, specifically requiring a central stainless steel cabinet with a air preparation/service unit, a pneumatic ball valve for the initial fresh

water filling, and a pneumatic ball valve for the fresh water spraying supply.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.1.9. **Reclaim Wheel Sieve / De-watering drum:**

Rotating Drum Type unit responsible for collecting and separating water and debris from the washing screw conveyor system. Functionally, the reclaim wheel guides washing water caught in a hopper to separate fine particles; the system includes a dedicated pump for water recirculation, ensuring the majority of the water is returned to the washer.

The solid debris collected by the internal screw is transported to the peel waste pump or a waste bin via a screw conveyor. It include a sieve equipped with spraying nozzles, level measurement using an analog pressure sensor and an automatic pneumatic ball valve for draining.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.1.10. **Inspection Roller Conveyor:**

The Inspection Roller Conveyor, intended for the manual inspection of whole peeled potatoes, is primarily to enable manual trimming of defective or oversized potatoes, providing discharge chutes for this purpose.

This conveyor shall be Roller Type mechanism, the use of UHMW Side components and incorporating Chutes to Bins for the collection of manually removed rejects, includes a direct drive motor and gearbox.

Capacity: Minimum 10000 kgs/hr (Product)

Feature: Shall be suitable to accommodate 12 labours for inspection

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.2. **Cutting:**

3.2.1. **Mechanical Cutting system:**

The Mechanical-Cutting System steplessly slice the peeled potatoes into a uniform size suitable for subsequent cooking. It shall be a high-capacity system, rated at 1000 kg/h per 1 mm slice thickness, and ensures consistent performance with precise control over product quality.

A key technical feature of the system is the stepless adjustment of slice thickness during operation, allowing for continuous product flow without interruption. The slice thickness is specified minimum slice thickness of 10 mm.

The system includes a protection cover closed on both sides for operational safety and is engineered for easy access and maintenance. The complete unit comprises an infeed chute, a movable support structure with rails (lockable during operation), and an inclined screw conveyor for smooth transfer of sliced product to the next processing stage.

Capacity: Minimum 10000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.2.2. **Dosing Hopper:**

Dosing Hopper which acts as a buffer and regulates the flow of potato slices into the blancher. Key technical components that define this unit include its core structure: hopper with screw execution. It holds a volume capacity of 1500 litres and utilizes a Discharge Screw for conveying the product.

Crucial functional and drive elements include Level Control, typically managed by sensors, to ensure an equal flow to the blancher hopper. Furthermore, the Dosing Hopper features a specialized drive system: a direct drive comprising a motor + gearbox.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.3. **Blanching, Cooling & Cooking:**

3.3.1. **Blancher:**

Blancher (serves the function of Pre-cooking) providing initial heat treatment to deactivate enzymes and remove free starch. Key operational parameters mandate a retention time a maximum of 25 minutes with operating at a 50% filling level.

The unit features direct drives (motor + gearbox) for both the conveying screw and the pump system, and is supplied complete with a discharge screw to the cooler and an overflow.

Control instrumentation includes a Steam Control Valve for temperature and flow regulation, an Analog pressure sensor utilized for level measurement, and a proportional system for refreshing water supply featuring a Pneumatic ball valve, a Valve positioner, and an Analog flowmeter.

Further technical details of the automated system include a dedicated Central stainless-steel cabinet with a air preparation/service unit for controls, and provisions for lubrication of the slide bearing via a Pneumatic ball valve and a Manual operated ball valve.

Additionally, the unit incorporates an automatic drain system for the blancher and the discharge screw, consisting of Pneumatic ball valves, and features an automatic control purge valve for managing floating debris

Capacity: Minimum 5000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.3.2. **Cooler:**

The Cooler functions to rapidly cool the blanched potato slices. Key operational parameters mandate a retention time a maximum of 25 minutes with operating at a 50% filling level. The conveying screw's speed is frequency controlled by a direct drive motor and gearbox.

Technically, the cooler is designed to be prepared for the circulation of Chilled Water, which includes preparations for applying a heat exchanger through both in- and external connections along with a

necessary circulation pump. It comes equipped with a discharge screw directed towards the "by-pass low leach flume system to cooker", featuring a flow diverter, control valve, and overflow.

Control mechanisms for the cooler include a central cabinet with a air preparation/service unit, level measurement using an analog pressure sensor, and dedicated pneumatic ball valves for controlling proportional refreshing water supply, fresh water supply and automatic drain

Capacity: Minimum 5000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.3.3. **By-Pass Flume Low Leach:**

Fluming uses water flow to carry potatoes & serve the simultaneous function of transporting potatoes and providing preliminary washing, minimizing the loss or extraction of soluble components, particularly starch and sugars. It Includes SS304 Impeller Pump, by-pass provision for "Blancher + Cooler".

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.3.4. **Overflow Managing System:**

The Overflow Managing System functions primarily to manage the movement and moisture content of potato pieces by dewatering them before they enter the final cooking process.

This unit consists of a stainless-steel tank, with Level Control for pump protection. The system incorporates an SS304 Impeller Pump, and its stainless-steel piping transports the collected overflow material from the pump back to the washing screw conveyor

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.3.5. **Rotary Valve (at inlet of cooker):**

A rotary valve functions as a pressure lock or steam seal to introduce potatoes continuously into the pressurized chamber. This containment prevents the cooking medium (steam) from escaping to the atmosphere.

By preventing steam loss, the rotary valve helps increase the energy efficiency of the process. The valve also helps to control the rate at which the material is fed into the cooker, ensuring the continuous nature of the process. The Rotary valve is driven by a direct drive system including a motor plus gearbox.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.3.6. **Cooker:**

Cooker is for fully cook the slices and completely gelatinize the starch, making them soft and ready for mashing. Key operational parameters mandate a retention time a maximum of 66 minutes with operating at a 50% filling level.

This Screw-Type Cooker, with frequency-controlled variable speed driven by a motor and gearbox assembly for precise process control. The system incorporates a steam manifold, an automatic steam control valve for accurate temperature and flow regulation, and provisions for condensate discharge.

Additionally, the upper steam injection lines can be isolated when the cooker operates at half capacity, providing operational flexibility and energy savings. It shall be Design for hygienic operation, reliability, and energy efficiency.

Capacity: Minimum 5000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.4. **Mashing:**

3.4.1. **Ricer/Masher:**

The Ricer/Masher involves pushing the cooked potato material through small holes or screens, to separate the cooked cells gently to preserve cellular integrity, creating a mealy texture.

This Screw-Type Ricer operates through a direct drive system consisting of a motor and gearbox assembly, ensuring reliable torque transmission and low maintenance.

Capacity: Minimum 5000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.4.2. **Additives Station:**

The Additives Station prepares and dose necessary addictive substances and ingredients into the mash. It include '500-litre heated jacketed preparation/mixing tank' equipped with quick mixing gear, and a separate heated dosing/storage tank, equipped with gentle mixing gear. It also includes transfer pump and a dosing pump, Heater & Temperature gauge.

Capacity: Minimum 5000 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.4.3. **Volumetric Dosing Screw:**

The Volumetric Dosing Screw is for Precisely meter and feed the additive to mashed pump system. The machine consists of a lockable funnel into which the product is fed.

Located beneath the funnel are a spiral coil and a dosing screw; the spiral coil's function is to ensure a constant and even filling of the dosing screw. The dosing screw itself accurately doses the product into mashed pump system.

Stainless steel piping is then used to transport the product to the mash pump tank, where it is thoroughly mixed with the mash. The equipment also includes a support frame

Provision for CIP - circulation line and pump of adequate capacity to be included

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.4.4. **Mash Pump System:**

Mash Pump System is for transport the high-viscosity mashed potato product to the dryer. The system is designed to overcome the mash's inability to flow into the pump under gravity.

It includes Lobe Pump type utilizing volumetric dosing, a stainless-steel Dosing Hopper. one transport screw (auger) located at the bottom to actively push the puree into the Lobe Pump unit. It also includes a level sensor within the tank that signals the control unit to regulate the mash pump speed based on whether the mash level is too high or too low.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.4.5. **Piping of Mash Pump System:**

The Piping of Mashing Pump System is an Allied/Accessories item, is essential for transporting the mashed potato product. It also includes the necessary support structures.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.5. **Drying:**

3.5.1. **Drum Dryer:**

The Drum Dryer evaporates moisture from the potato mash, by applying it on outer surface of the heated, rotating cylinder, often utilizing applicator rolls to spread the mash into a thin layer.

This process forms a continuous dried sheet that is scraped off by a specialized knife and broken into flakes by a pre-breaker screw. The Windshifter then separates light flakes from heavier waste. After separation, the desired light flakes are conveyed to a bunker via a vacuum-air system. Dense Phase conveying system recommended. Product conveying air- minimum EU(5+7) grade filtration

The system requires saturated steam at <10 bar operating pressure. The main drying cylinder shall be single-piece casted with cast iron / SS 304. The design shall preferably be Lamellar type. The product contact surface is precision-ground, while the internal surface is turned, ensuring consistent heat transfer.

Mash application is achieved using individually driven SS304 applicator rollers, comprising rolls, with continuously adjustable gaps. Each roller is powered by motor and gearbox assemblies operating with food-grade oil. Mash distribution is facilitated by a ribbon-type left/right screw auger, equipped with adjustable and replaceable sealing strips against the drum surface. The applicator roll seal system, constructed from PTFE and stainless steel, minimizes product leakage during operation.

The dry product sheet is removed from the drum surface by a scraping system (preferably Auto-Trax), featuring the Knife System. This includes large pneumatic cylinders for circular motion during cleaning and smaller cylinders for knife replacement.

The main cylinder is driven by direct-drive unit, mounted on a Stainless Steel 304 frame with an integrated pre-breaker skid, which includes a pre-breaker screw with crocodile flights for initial flake size reduction. The discharge system features a Windshifter for efficient separation of light flakes from heavier waste particles.

Capacity: Minimum 1100 kgs/hr Output (Product)

Quantity: 1 EA

3.5.2. **Vapour Hood & Platforms:**

The Vapour Hood is for capturing and exhausting the large volume of water vapour generated during the drying process. The Vapour Hood system shall manage a Fan Volume of 66000 m^3/hr.

The complete assembly includes stainless steel vapour hoods equipped with stacks dto extend above the roof, along with stainless beam supports necessary for the vapour hood itself and for the preflakes and

waste screw conveyors associated with the drum dryer section. Vapour hood should have provision for dismantling – shall support easy cleaning

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.5.3. **Disposable Knife for the Drum Dryer:**

The 'Disposable Knife for the Drum Dryer' shall be designed for the continuous scraping of the potato sheet from the cylinder of the drum dryer. This tool is a thin and disposable material, which necessitates its replacement once it becomes blunt, rather than being sharpened.

Feature: This Set shall include 102 Pieces of scraping knives.

Quantity: 1 EA (includes 102 pieces)

3.6. **Milling:**

3.6.1. **Air Transport:**

Air Transport using a vacuum system to pneumatically convey dried potato flakes from the dryer's pre-breaker discharge to a hopper (equipped with a fan and dust filter unit) for air separation. Dense Phase conveying system recommended. Product conveying air- minimum EU(5+7) grade filtration

The flakes are separated from the air, and the air is released into the environment via the filters. The separated flakes then fall to the bottom of the hopper, where the discharge system controls the dosing of the material to the mill sifter.

Capacity: Minimum 1100 kgs/hr Output (Product)

Quantity: 1 EA

3.6.2. **Piping for Air Transport:**

The Piping of Air Transport System is an Allied/Accessories item, is essential for pneumatically convey dried potato flakes. It also includes the necessary support structures.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.3. **Mill Sifter:**

Mill Sifter controls the final particle size to achieve desired quality separation. To meet density and packaging goals, flakes are broken to smaller sizes. This breaking is achieved using a mill.

The subsequent sifting operation separates the milled material to achieve the desired particle size distribution. It shall have a screen **perforation size of 6 mm**; The Mill Sifter itself employs a direct drive system consisting of a motor and gearbox.

Capacity: Minimum 1100 kgs/hr Output (Product)

Quantity: 1 EA

3.6.4. **Discharge Screw Conveyor:**

The Discharge Screw Conveyor transfers the sized potato flakes to the subsequent handling stage. It consists of a stainless-steel screw with a robust support structure, designed for efficient and uniform discharge. The conveyor is driven by a direct-drive system comprising a motor and gearbox.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.5. **Aero-mechanical Conveyor:**

The Aero-mechanical Conveyor situated immediately before the Dry Product Silo is designed for the vertical transport of finished potato flakes and incorporates Flo-Disc Technology for Gentle Handling. This unit have approximate discharge height, which must be 7000 mm, and the unit must include its own support structure

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.6. **Rotating Permanent Magnet:**

The Rotating Permanent Magnet is to capture and remove any potential ferrous metal contaminants from the finished product before it is packaged.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.7. **Dry Product Silo:**

The Dry Product Silo for the storage of finished potato flakes before they proceed to the packaging stage. It shall be cylindrical with conical bottom or conical silo (shall be easy to maintain hygienic design and eliminates corners), provides a storage volume of 15,000 litres and is equipped internally with an infeed and discharge screw as well as a necessary support structure, a level sensor to monitor the product level, ensuring consistent flow, and features a direct drive motor and gearbox.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.8. **Big-Bag Unloading Station:**

Big-Bag unloading station allows a separate input for emptying bulk bags'. The Big-Bag Unloading Station is designed to handle a Maximum Big-Bag Weight of 1000 kgs.

This unit features a Vibrating Unit mounted on a robust frame, utilizing an unbalance unit and dampers to ensure a smooth flow of product during unloading.

For placement, the station includes a hoist and a height-adjustable frame, allowing easy positioning of the Big-Bag using a forklift.

Quantity: 1 EA

3.6.9. **Collection Screw Conveyor for Big-Bag Unloading Station:**

Screw Type Conveyor to transport the unloaded flakes to next stage.

Capacity: Minimum 1100 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.10. **Aero-mechanical Conveyor:**

The Aero-mechanical Conveyor situated immediately before the Powder Mill is designed for the vertical transport of finished potato flakes and incorporates Flo-Disc Technology for Gentle Handling.
This unit have approximate discharge height, which must be 7000 mm, and the unit must include its own support structure

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.10B. **Metal Detection System:**

The Metal Detection System is technologically designed to detect metal.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.10C. **Aero-mechanical Conveyor**:

The Aero-mechanical Conveyor is designed for the vertical transport of material and incorporates Flo-Disc Technology for Gentle Handling.
This unit have suitable discharge height, and the unit must include its own support structure

Capacity: Minimum 1100 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.11. **Powder Mill Unit:**

The Powder Mill Unit is to reduce standard potato flakes into fine powder form, achieving a bulk density of up to 550 kg/m³ through a outlet sieve.

The Powder Mill shall be ATEX (Explosion-Proof) and suitable for installation in hazardous areas, addressing the risks associated with

high rotational speeds and metal contact. The system includes dosing sluices to prevent open connection between the flake feed and powder discharge.

An explosion relief panel mounted on the chimney of the integrated filter unit, designed to safely vent explosion pressure to the atmosphere while simultaneously sending a shutdown signal to the dosing sluices. A reinforced filter collection hopper, built from extra-thick sheet material with ribbed reinforcement to withstand potential pressure forces. An air intake pipe engineered for resistance to pressure waves.

The unit also integrates a fan and dust filter assembly for continuous dust extraction and powder recovery during high-speed milling. It also include a rotating magnet for removal of ferrous metals, a non-ferrous metal detector to ensure product purity.

For process flexibility, the system shall be equipped with a by-pass valve/system enabling direct transfer of standard potato flakes to the packaging section when powder production is not required.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.6.12. **Aero-mechanical Conveyor:**

The Aero-mechanical Conveyor is designed for the vertical transport of material and incorporates Flo-Disc Technology for Gentle Handling. This unit have approximate discharge height, which must be 7000 mm, and the unit must include its own support structure

Capacity: Minimum 1100 kgs/hr (Product)

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.7. **Accessories /Auxiliary / Spars / Additional Equipments:**

3.7.1. **Pump System for Potato waste from French Fries Line:**

The system is to transfer slivers, nubbins, and product rejects from the French Fries production line to the Flake Line for further utilization. This integration allows for efficient recovery and reprocessing of product

rejects, assuming both lines are installed side-by-side within the facility layout.

The system is designed to handle slurry transport and water recovery, ensuring both hygienic operation and resource efficiency. The product flow path begins at the sliver collection funnel (positioned beneath the sliver remover) and passes through stainless steel piping and collection chutes located under the nubbin/length grader and optical sorter, ultimately discharging into the pump tank.

The core pumping assembly includes a Stainless-Steel centrifugal pump for product transfer, a Dewatering Drum complete with a support frame for water separation from the product stream, a Balance tank for process water balance and control.

Additionally, the system includes a Stainless-Steel water centrifugal return pump to recirculate process water back to the French Fries Line (when gravity return is not possible)

Quantity: 1 EA

3.7.2. **Anti-foam Dosing system:**

This system is used to introduce anti-foam agents to control foam in liquid streams or effluent systems which arise during the processing of potatoes.

Quantity: 1 EA

3.7.3. **Platforms, Frames, Supports, Stacks, Rails:**

All structural elements including platform frames, support structures, handrails, and stairs shall be constructed from Stainless Steel 304 to ensure durability, corrosion resistance, and compliance with hygienic design standards required in food processing environments.

The walking surfaces (gratings) shall be made of Anti-Skid SS for enhanced safety and ease of cleaning. The design shall incorporate box profile framing, safety railings on all four sides, and inclined stairs with handrails for safe operator access to elevated areas.

MOC: All main components shall be of stainless steel AISI 304.

Quantity: 1 EA

3.7.4. **Instruments/controls/accessories:**

All required instruments/controls/accessories which are not mentioned above.

Quantity: 1 EA

3.7.5. **Spare for 2-year operation:**

The Bidder shall provide spares for two year's continuous operation of Machine.

Quantity: 1 EA

3.8. **Electrical:**

3.8.1. **Electrical Control Equipment:**

The system shall be engineered as a fully automated plant, integrated through a PLC-based Control System with selectable operating modes.

The production line shall employ fully automatic process control across all stages; however, certain critical operations may include manual inspection as required for quality assurance.

The electrical section serves to power, control, and automate the continuous production process while ensuring stringent operational safety across the line.

The core function relies on a centralized Control Panel, include PLC, SCADA, and VFDs to provide comprehensive control and monitoring via Field HMIs, managing parameters such as steam time, batch load setting, and motor speeds throughout the various processing stages.

Electrical power distribution and regulation ensure that numerous machine drives (motor + gearbox) are frequency-controlled to manage material flow and processing speeds, particularly for equipment like the Steam Peeler vessel drives, screws, and conveyors.

Furthermore, the electrical scope includes the physical components necessary for distribution and isolation, such as Junction Boxes and Isolators and services covering.

- HMI
  - Size: 12”

- Quantity: 3 Nos

- Engineering PC
  - I7 Processor with latest generation.
  - 512 GB SSD Drive
  - 1 TB Sata hard drive
  - 32 GB Ram
  - 32-inch Monitor
  - Quantity: 1 Nos

- Operator PC
  - I7 Processor with latest generation.
  - 512 GB SSD Drive
  - 1 TB Sata hard drive
  - 32 GB Ram
  - 32-inch Monitor
  - Quantity: 1 Nos

- MIS Server PC
  - Xenon processor of latest generation.
  - Windows server 2016 or latest edition.
  - 1 TB hard drive
  - Raid 5 configuration
  - 32 GB Ram
  - 32-inch Monitor
  - Quantity: 1 Nos

- Junction Box
  - MOC: SS 304
  - Door Thickness: 2 mm
  - Body Thickness: 1.6 mm
  - Stiffener required to prevent warpage
  - Quantity: 1 Lot

- Isolator
  - MOC: SS 304
  - Start, Stop, Emergency button
  - Plug Socket
  - Quantity: 1 Lot

- VFD
  - Built in choke
  - EMC filter
  - Input choke with 3% impedance shall be provided in power feeding line to VFD.

- Quantity: 1 Lot

- PLC
  - High end PLC with required hardware for integration with other OEM panel and Central plant Automation system
  - 30% Spare memory and 25% spare tag/Screens to be available after commissioning
  - PLC input output shall be designed in such a way that 15% spare PLC I/O remain available after commissioning.
  - PLC model shall be of latest configuration
  - Not in end-of-life phase by OEM
  - Quantity: 1 Nos

- PLC Panel
  - Make: Rittal / Hoffman / European
  - MS enclosure with Glass window
  - Glass bidding shall be of V Groove type
  - Quantity: 1 Lot

- PLC Remote I/O enclosure and process Area panels
  - It shall be dust and vermin proof.
  - Stiffener shall be provided to prevent warpage.
  - Door thickness shall be 2 mm for door
  - Minimum thickness 1.6 mm for body.
  - Mounting plate shall be of GI
  - Quantity: 1 Lot

- MCC (Motor Control Center).
  Electrical panels and bus duct shall be delivered in convenient shipping section by the manufacturers. The Bidder shall be responsible for final assembly and inter-connection of bus bars/ wiring. Foundation channel shall be grouted in the flooring by the Bidder. Switchgear shall be aligned and leveled on their base channels and bolted or tack welded to them as per the instructions of the Engineer-in-charge. The earth bus shall be made continuous throughout the length. Loosely supplied relays and instruments shall be mounted and connected on the switchgear. The contacts of the draw-out circuit breakers shall be checked for proper alignment and interchangeability.

  After erection the switchboard shall be inspected for dust and vermin proof ness. Any hole, which might allow dust or vermin etc. to enter the panel, shall be plugged suitably at no extra cost.

If the instrument transformers are supplied separately, they shall be erected as per the direction of the Engineer-in-charge. The Bidder shall fix the cable glands after drilling the bottom/ top gland plates of all switchboards with suitable holes at no extra cost.

Range of overload relays/timers etc. shall be checked with requirement of motor systems actually to be connected at site and if the same is under-sized/over-sized, it shall be brought to the notice of Engineer-in charge, who shall arrange procurement of correct rated components. However, the Bidder shall not charge anything extra for labor for such replacements.

The bus duct shall be suitably supported between switchgear and transformer. The opening in the wall where the duct enters the switchgear room shall be sealed to avoid rainwater entry. The foundation of the switchgear shall be raised suitably for minor adjustment to ensure proper alignment and connection of the bus duct at no extra cost. Expansion joints, flexible connection, etc. supplied by the manufacturer of the bus duct shall be properly connected.

The switchboard shall be fabricated using pressed and shaped cold rolled steel sections structure of adequate thickness. The sheet steel used for panels shall be min. 14 SWG sheet except that the partition plates, inter-panel barriers and cubicle doors may be made of 16 SWG. The switchboard shall consist of free-standing front and back open-able panels arranged to form a continuous line-up of uniform height. Cold rolled sheets shall be used for doors and front covers. Doors shall be hinged type and bus bars, and cable alleys covers shall be bolted type.

Switch Board shall be extensible at both ends by addition of vertical sections. Ends of the bus bars shall be suitably drilled for this purpose. Panels at extreme ends shall have openings, which shall be covered with plates screwed to the panel. The switchboard shall be provided with integral base frame. The panel base plate/cable gland plate shall be 2.5 mm thick. The switchboard shall conform to degree of protection not less than IP 42. Gaskets of durable material shall be provided for doors and other openings. Suitable hooks shall be provided for lifting the boards. These hooks when removed, shall not leave any opening on the board.

All hardware shall be corrosion resistant. All joints and connections shall be made by galvanized zinc passivated or cadmium-plated high tensile strength steel bolts, nuts and washers secured against loosening.

The maximum and minimum operating handle/push button height of any feeder shall not be more than 1900 mm or less than 300 mm with reference to panel bottom. IMCC shall be extendable to both sides. Total height of panel shall not exceed 2300 mm. Supporting arrangements for dressing of power and control cables in cable alleys also shall be provided. Maximum shipping length of MCC shall be as 2500 mm. Space heaters with toggle switches, fuses and thermostat shall be provided in each cable alley.

BUSBAR
Copper busbar with ampacity of 1.2 Amp per sq mm to be provided. Busbar design shall be able to accommodate 20% load for the future expansion. Aluminum earthing bus bare of size 50X6 shall be provided throughout the panel length

- Programming of Automation system
  - Quantity: 1 Job

- Integration with all other OEM Panels shall also include.

Quantity: 1 Job

3.9. **Installation, Testing, Commissioning, acceptance, Training & Service Cover:**

3.9.1. **Supervision for Installation, Start-up assistance, Testing, Commissioning, acceptance & Training:**

Design Qualification (DQ)

Design qualification (DQ) for the complete system with all its components, is to be prepared by bidder and submitted to purchaser for approval. DQ document should comprise of Detailed Design Calculations, Equipment GA drawing, instrumentation details and detailed P&ID etc. Design code for all fabricated items needs to be mentioned in the documents as per applicable standards.

Quality Assurance Plant (QAP) which includes material inspection,

testing, Fabrication shall be submitted to purchaser for approval

Installation Qualification (IQ)

Installation Qualification shall include the following activities:

- Preparation of IQ protocol (which includes correct component selection, installation as per OEM, connection of all connected utilities, use of approved skilled manpower, approved quality consumables, compliance to BEP and statutory required) shall be done by Bidder and submitted for approval.
- After completion of installation, the successful Bidder shall check /verify whether installation of each and every component of the plant is as per approved layout, P& ID drawings and as per order specifications.
- The scope also includes the successful Bidder shall tag mark / neatly
  type lettering Name of equipment, capacity, direction flow, etc on major component, piping. Lettering and location

Operational Qualification (OQ)

The successful Bidder shall submit OQ & PQ documents, after approval
of DQ & IQ documents, as per approved protocol.
OQ document should log/ record data during initial operations for the
following:

- Duty/ capacity range (with Max & min)
- Operating conditions (ambient /room condition)
- Inlet & outlet product flow conditions.
- Safety checks

Performance Qualification (PQ)

After the system has been stabilized, the successful bidder shall measure / record actual performance parameters for all quipment, as indicated in the OQ. PQ should conform to the intended system performance as per order/ design (with necessary calculations if any). The test readings in general shall be taken by the supplier in the presence of client & purchaser representative.

All report formats (protocol) and acceptance criteria should be approved by purchaser & client adequately in advance of starting

test. All instruments should be calibrated and certificate copy should be attached with reports.

PROJECT MANAGEMENT

Time Schedule

The project execution shall be time-bound as per the mutually agreed time schedule which would not exceed date mentioned in 'DELIVERY & TIMELINE'

The Project Manager will provide the Purchaser's Project in charge with monthly progress reports which clearly indicate the actual Vs. planned progress and the new likely completion dates of supply, erection, commissioning and performance trials.

The project staffing pattern shall be submitted with the offer and should include sufficient personnel to meet the execution time schedule.

Management Team

A competent execution team shall be deputed at site and shall be headed by a Project Manager who shall be adequately experienced in Project Management of such magnitude and type. The Project Manager shall avail of assistance from reputed experts in various fields who shall be directly responsible for satisfactory execution.

The Project Manager shall be responsible for overall implementation of the entire project, from commencement to the final takeover of the plant. Services of a Project Engineer shall be ensured for the day to day operations and co-ordination to ensure successful and satisfactory design, procurement, manufacture, inspection, erection, testing & commissioning of all the equipment/ facilities/ systems within the time-bound schedule.

The Project Manager and Project Engineer shall attend all technical and review meetings between various parties involved in the project and ensure implementation of all decisions taken in the meetings.

The Project Manager shall be responsible for detailed material accounting at site and management of the store maintained at site.

The Purchaser shall nominate a Project In-charge with whom the bidder shall generally communicate/co-ordinate.

The bidder has to fully authorize the Project Manager to take on-the-spot decision with regard to :

- Modification in layout and execution plan to suit local conditions.
- To purchase essential materials from local market to avoid delays.

For smooth execution of the project, a team of Project Manager and Key Personnel shall remain consistent throughout the execution period.

After satisfactory erection and testing, competent commissioning team shall be deputed to establish the performance parameters for a specific period.

Approvals

Bidder shall submit the technical documents and drawings within agreed time schedule. Approval on technical documentation (with or without specified amendments) shall be taken by Purchaser after submission. The amendments which are not in the original scope of work or due to changes in concept, shall be taken up by the bidder as per mutually agreed rates to be decided before execution, and shall be binding on the bidder.

Bidder shall obtain approval for purchase of specific makes of equipment whose makes are not mentioned in his offer. All the detailed design calculations regarding the selection of equipment sizes, System types, etc. shall be submitted to Purchaser for their specific observation and record.

Inspection

The Bidder shall submit the Inspection and Test Plan for complete system for Purchaser's approval. The purpose of this document is to provide guidelines and agreement on the Quality Control activities and inspection clearances of fabricated equipment, materials and bought out equipment being supplied by bidder.

The bidder shall invite Purchaser for inspection and preliminary testing as per approved Inspection and Test Plan. The inspection may be required at various stages of manufacture/assembly for some items. However, for imported items where the inspection has to be done abroad, the bidder shall do the inspection at his cost and submit the necessary test certificate.

Supervision for Installation:

It includes supervising the positioning, installation, interconnecting pipework of Equipments on foundation covering both mechanical and electrical, according to the agreed layout by the bidders qualified representative.

Start-up assistance, Testing, Commissioning, acceptance & Training:

The scope of this service includes supervising the testing, commissioning, acceptance and running product trials to confirm performance parameters, with the project goal set to commence product trials and service load trials.

Training

Training shall be undertaken by the bidder. The bidder would train all levels of staff of the client in operating the plant including managers, engineers, supervisors, operators and maintenance personnel.

Training would be given both at site and the manufacturer's works and a schedule should be proposed by the bidder, together with the content of training programme, their duration and venue.

Training should commence during the erection and commissioning period as follows:

- During erection
  Exposure to the working and construction of the various equipment comprising the various systems of the plant, including instrumentation and controls.

- During commissioning
  Exposure to and training on the operations and maintenance of the various equipment in the plant including the testing, calibration setting of instruments both local and panel mounted.

Familiarization with start up procedures, management operations, basic principles of controls, control during operation and adjustments, fault finding and including operation and maintenance on control system and maintenance of the plant

Training on safety aspects, service and machine guidelines, operator trouble shooting guidelines for operation and maintenance staff

3.9.2. **Service Cover: (4 Visits per annum)**

The Bidder representatives (technical and skilled engineer) shall attend the project for continuous five working days in each quarter throughout one year after commissioning, product trial and acceptance of the plant. These visits shall cover meetings, training, equipment adjustment, & servicing. These visits shall not cover guarantee work, which shall be undertaken separately**.**

The objectives of service covers are intended to ensure that the efficiency of the plant is maintained at the optimum level and

- To help improve operating and maintenance procedures.
- To keep the plant adjusted for optimum energy efficiency, product quality and minimum product losses.
- To arrange for service visits by specialists to inspect, service and carry out reports.
- To carry-out and audit of plant operating efficiency at regular intervals.

Note : The no. of skilled technical engineer deployed for the service cover shall be decided by the bidder.and all expenses during service visit shall be borne by bidder.

APPROVED MAKES

The table below specifies the preferred approved makes of major equipment/ accessories. Where more than one makes are considered for an item OR no make is mentioned in the bid/order, bidder shall obtain prior written approval of Purchaser before commencing the manufacturing/placing an order on bidder as the case may be. However, as regards to the ultimate makes to be supplied to these projects, makes shall be finalized in consultation with the purchaser. **For equipment for which we had mentioned 'European' should be strictly 'Made in Europe' only.**

Technical Details Serial No.	Material Description	Preferred Make
	Raw Potato Preparation	
3.1.1.	De-stoner & washer	European: Kiremko / Tummers / TNA / FPS
3.1.2.	Inclined Belt Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.1.4.	Continuous Steam Peeler	European : Kiremko / Tummers / TNA / FPS
3.1.5.	Inclined Screw Conveyor	European : Kiremko / Tummers / TNA / FPS
3.1.6.	Dry Peel Removal / Brusher	European : Kiremko / Tummers / TNA / FPS
3.1.7.	Peel Waste Pump with Hopper	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.1.8.	Washing Screw Conveyor	European : Kiremko / Tummers / TNA / FPS
3.1.9.	Reclaim Wheel Sieve / De-watering drum	European : Kiremko / Tummers / TNA / FPS
3.1.10.	Inspection Roller Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
	Cutting	
3.2.1.	Mechanical Cutting system	European : Kiremko / Tummers / TNA / FPS
3.2.2.	Dosing Hopper	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
	Blanching, Cooling & Cooking	
3.3.1.	Blancher	European : Kiremko / Tummers / TNA / FPS
3.3.2.	Cooler	European :

		Kiremko / Tummers / TNA / FPS
3.3.3.	By-Pass Flume Low Leach	European : Kiremko / Tummers / TNA / FPS
3.3.4.	Overflow Managing System	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.3.5.	Rotary Valve (at inlet of cooker)	European : Kiremko / Tummers / TNA / FPS
3.3.6.	Cooker	European : Kiremko / Tummers / TNA / FPS
	Mashing	
3.4.1.	Ricer/Masher	European : Kiremko / Tummers / TNA / FPS
3.4.2.	Additives Station	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.4.3.	Volumetric Dosing Screw	European : Kiremko / Tummers / TNA / FPS
3.4.4.	Mash Pump System	European : Kiremko / Tummers / TNA / FPS
3.4.5.	Piping of Mash Pump System	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
	Drying	
3.5.1.	Drum Dryer	European : Kiremko / Tummers / TNA / FPS
3.5.2.	Vapour Hood & Platforms	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.5.3.	Disposable Knife for the Drum Dryer	European : Kiremko / Tummers / TNA / FPS
	Milling	
3.6.1.	Air Transport	European : Kiremko / Tummers / TNA / FPS
3.6.2.	Piping for Air Transport	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.6.3.	Mill Sifter	European : Kiremko / Tummers / TNA / FPS
3.6.4.	Discharge Screw Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.6.5.	Aero-mechanical Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.6.6.	Rotating Permanent Magnet	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.6.7.	Dry Product Silo	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.6.8.	Big-Bag Unloading Station	European : Kiremko / Tummers / TNA / FPS

3.6.9.	Collection Screw Conveyor for Big-Bag Unloading Station	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.6.10.	Aero-mechanical Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.6.10B.	Metal Detection System	European : Kiremko / Tummers / TNA / FPS
3.6.10C.	Aero-mechanical Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.6.11.	Powder Mill Unit	European : Kiremko / Tummers / TNA / FPS
3.6.12.	Aero-mechanical Conveyor	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
	Accessories /Auxiliary / Spars / Additional Equipments	
3.7.1.	Pump System for Potato waste from French Fries Line	European : Kiremko / Tummers / TNA / FPS
3.7.2.	Anti-foam Dosing system	European : Kiremko / Tummers / TNA / FPS
3.7.3.	Platforms, Frames, Supports, Stacks, Rails	Indigenous : NSSPL/ Fabcon /Kiron-MSPL
3.7.4.	Instruments/controls/accessories	European : Kiremko / Tummers / TNA / FPS
3.7.5.	Spare for 2-year operation	European : Kiremko / Tummers / TNA / FPS
	Electrical	
3.8.1.	**Electrical Control Equipment**	
	Computer	Dell/HP
	Network Printer	HP/Cannon
	PLC	Siemens/Rockwell
	HMI/SCADA	Siemens/Rockwell
	Variable Frequency Drive	Danfoss/Siemens/Rockwell/ABB
	MCB	Indigenous : L&K Imported: Schneider/Siemens/ ABB
	MCCB	Indigenous : L&K Imported: Schneider/Siemens/ ABB
	MPCB	Indigenous : L&K Imported: Schneider/Siemens/ ABB
	ACB	Indigenous : L&K Imported: Schneider/Siemens/ ABB

	Instrument	E&H/Emerson
	Panel Manufacturer	Indigenous : CPRI Approved Imported: CE/ European Approved
	Ethernet Switches Unmanaged	Phoenix/Rockwell/Siemens
	Ethernet Switches managed	Cisco/Siemens/ Rockwell/Phoenix
	LT armored cable	Indigenous : Lapp/RR/KEC/RPG Imported: CE/ European Approved
	LT Steel braided Power and control cable	Indigenous : Lapp/RR/KEC/RPG Imported: CE/ European Approved
	Instrument Cable - shielded steel braided FRLS ant rodent	Indigenous : Lapp/RR/KEC/RPG Imported: CE/ European Approved
	Instrument Cable -Non shielded steel braided FRLS ant rodent	Indigenous : Lapp/RR/KEC/RPG Imported: CE/ European Approved

Note: While execution, choice of make would be made from the preferred list. Makes and model shall be approved by the purchaser expeditiously.

E. DETAILS NEED TO BE FURNISH BY BIDDER

Blank Details mentioned below shall be filled by Bidder while bidding:

Sr. No	Description	French Fries	Potato Flakes	Powder	UOM
	Product Details				
1	Raw Material - Variety				
2	Raw Material - Size Range				
3	Raw Material - Input Rate				
4	Raw Material - Solid Content				
5	Raw Material - Reducing Sugars				
6	Raw Material - Impurities				
7	Raw Material - Density				
8	Loss - Peeling				
9	Loss - Cutting				
10	Loss - Sliver				
11	Loss - Nubbin				
12	Loss - Mash Waste				
13	Drying - Moisture Removal				
14	Frying - Evaporation Rate				
15	Frying - Finished Solids				
16	Frying - Oil Pickup				
17	Frying - Final Moisture				
18	Product Output - Type				
19	Product Output - Size				
20	Product Output - Capacity				
21	Product Output - Solids Content				
22	Product Output - Fat Content				
23	Product Output - Sugar Ends				
24	Product Output - Moisture				
25	Product Output - Bulk Density (Flakes)				
26	Product Output - Bulk Density (Powder)				
27	Product Output - Self Life				
	Utility Consumption Details (Process/Equipment/Room Wise)				
28	Power				
29	Steam				
30	Compressed Air				
31	Raw Water				
32	Soft Water				
33	RO Water				

34	Chilled Water				
35	Recycled Water				
36	Humidification				
37	Air Exhaust				
38	Condensate Return Quantity				
39	Condensate Return Temperature				
40	ETP Load / Inlet Water Details				
41	Heat Load				
42	Room Temperature to be maintain				
	Consumable Materials Details				
43	Frying Oil				
44	CIP Chemical				
45	Additives Details				
	Process Parameters Details (Process/Equipment/Room Wise)				
46	Equipment Type / Model				
47	Equipment Size / Capacity				
48	Equipment OEM / Make				
49	Equipment Design Code				
50	Equipment Input Parameters				
51	Equipment Output Parameters				
52	Equipment Connections Size				
53	Equipment Dimension (L x W x H)				
54	Equipment Weight				
55	Equipment Foundation Details				

F. BATTERY LIMIT (Pack A and Pack B)

Description	Purchaser's Scope	Bidder's Scope
Civil works	Necessary foundations/floor for equipment based on the details provided by the bidder	
Installation	Unloading, shifting, positioning, installation, interconnecting pipework of Equipments on foundation covering both mechanical and electrical	Supervision by qualified representative during shifting and installation.
Utilities & Piping	Steam, Compressed Air, Raw/Soft/RO water, Cold/Chilled Water, frying oil tapping to Process Machines.	Interconnecting piping/ducting/platforms etc of the supplied the Process Machinery. *Valves/instruments for Interconnection at Process side of Machine.* For Interconnection by Purchaser, all the required Drawing/Details shall be furnished by bidder
Drain lines	From Process Machines to Drain Points.	For Interconnection by Purchaser, all the required Drawing/Details shall be furnished by bidder
Permanent Power Supply	Purchaser Scope	
Cables & Cable Tray	From LT Power Distribution Panel to Process Panels and From Process Panels to Processing Equipment.	All the required Drawing/ Details/ Cable Schedule shall be furnished by bidder.
Consumables	necessary consumables such as oils and lubricants, required for trial runs and commissioning.	Details to be furnished by bidder.
Steam Accumulator for Steam Peeling	Purchaser's Scope	Drawing and details shall be furnished by bidder

G. PACKING

Bidder shall pack all the consignment in road worthy packaging strong enough to withstand rough handling during transit. Machine surface shall be suitably protected against scratches, corrosion, shocks, impact etc. Packages shall be suitably and distinctly identified for type of handling and kind of storage. The bidder shall take into consideration the 6-months' storage time, possibly in outdoor conditions, prior to final installation of the equipment. All Machines shall be fitted with engraved name plate containing pertinent details such as make, model, capacity, PO Ref, Tag No

H. PERFORMANCE TESTS AND GURANTEES

Performance test:

The bidder is required to detail the documentation proposed for performance test of all major equipment. This shall detail the guaranteed v/s actual throughput or output or performance (as relevant) and the tolerance of accuracy. Also, the test methods proposed to demonstrates that these guarantees have been met:

Formats of Guarantees:

- Guarantees for throughput of various sections of plant
- Consumption and losses
- Service consumption

Formats for performance tests:

- Procedure for carrying out the tests
- Method of measurement
- Test durations
- Evaluation methodology

PERFORMANCE PARAMETERS AND TEST PROCEDURE

General test procedure

On completion of the commissioning trials shall be operated for establishing the guaranteed performance. The performance trials shall be for 15 days of continuous operation along with main Plant process plant. The successful bidder shall during the performance trials depute their competent engineers for continuously 15 days' time to monitor the performance and take corrective actions as per requirement for improving the operation and performance of the system so that they run at guaranteed efficiencies.

Performance trials shall be conducted for the following:

- Capacity
- Efficiency
- Heat losses
- Individual equipment performance

If shutdown occurs due to external Force Majeure reasons after 16 hrs of operation in any day, this shall be considered as a full day testing. If at less than 16 hrs of operation, the trials shall be continued for an additional full day.

Guarantee / Warranty

12 months from the date of successful commissioning, product trial & acceptance of the plant

I. DELIVERY & TIMELINE

For the complete plant (design, manufacturing, supply, installation, testing, and commissioning, acceptance), the project goal is to commence product trials and service load trials within 10 months from the date of the Letter of Intent (LOI)/Purchase Order (PO) whichever is earlier.


COMPOUND WALL
TBM:11
RECHARGE WELL
TBM:12
STROM WATER DRAIN
[E:[X] 309994.577]
[N:[Y] 2451810.908]
[E:[X] 310066.627]
[N:[Y] 2451810.908]
[E:[X] 310189.587]
[N:[Y] 2451790.602]
[E:[X] 310193.277]
[N:[Y] 2451790.602]
STROM WATER DRAIN
26.350
ROAD R.L.
26.600
ROAD
ROOF SLOPE 1:10
POTATO FRENCH FRY DEEP FREEZE-03
POTATO FRENCH FRY DEEP FREEZE-02
POTATO FRENCH FRY DEEP FREEZE-01
CORIDOOR
POTATO FLAKES STORE
ANTI ROOM
6
5
4
POTATO FRENCH FRY PROCESS LINE
POTATO FRENCH FRY PACKING SECTION
IQF
POTATO FLAKES PACKING SECTION
POTATO FLAKES PROCESS LINE
CHAMBER-2
25930X19135X10500
CHAMBER-1
25930X19135X10500
ANTI ROOM
RCC FLOORING
I/I OF PUFF 10803
I/I OF PUFF 19461
I/I OF PUFF 7413
3330
[E:[X] 309994.577]
[N:[Y] 2451757.233]
[E:[X] 310070.317]
[N:[Y] 2451746.533]
[E:[X] 310189.587]
[N:[Y] 2451746.533]
[E:[X] 310193.277]
[N:[Y] 2451746.983]
STROM WATER DRAIN
TBM:7
72050 C/C OF STEEL COLUMN
3690
119270 C/C OF STEEL COLUMN
259360 C/C OF STEEL COLUMN
60660 C/C OF STEEL COLUMN
43619 C/C OF STEEL COLUMN
10700 C/C OF STEEL COLUMN
30000
IDMC LIMITED