GOVERNMENT OF ANDHRA PRADESH

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Web Site: https://eprocure.gov.in/eprocure/app

TENDER DOCUMEN TS FOR

SUPPLY, INSTALLATION, TESTING, COMMISSIONING & TRAIL RUN OF MACHINERY & EQUIPMENT ON TURNKEY BASIS

FOR

Godavari Coconut Association, (SPV)
Flat 5, Sambunipeta colony, Ward 10, Palakollu,
West Godavari District, Andhra Pradesh - 534260

To Establish

COMMON FACILITY CENTRE (CFC) FOR COCONUT CLUSTER AT

Survey No: 35-17, 35-18, 35-16, 35-14A, B, D, E, F, Yalamanchili Mandal, West Godavari Dist., Andhra Pradesh – 534260

Tender Notice No. APMSMEDC/INC/64/52/24, Dated: 17.02.2026

Tender Inviting Authority:

ANDHRA PRADESH MSME DEVELOPMENT CORPORATION

(AN ENTERPRISE OF GOVT. OF A.P.)
2nd Floor, PVS Towers, Mangalagiri, Guntur District, AP - 522503
E-mail: ceo-apmsmedc@ap.gov.in

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Bid Dates

Time schedule of various tender related events:

Sl. No.	Tender Activity	Date & Time
1	Bid Calling Date	18.02.2026
2	Pre-Bid Meeting (Hybrid)	23.02.2026 @ 2:00 PM
3	Issue of Pre-Bid Clarifications	25.02.2026
4	Bid Closing Date & Time	09.03.2026 @ 3:00 PM
5	Technical Bid Opening Date & Time	10.03.2026 @ 4:30 PM
6	Financial Bid Opening Date & Time	To be intimated later

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Chapter – 1

Introduction to Bidders

1.1. The Andhra Pradesh MSME Development Corporation – APMSMEDC (Tender Inviting Authority) is a fully owned by Government of Andhra Pradesh for providing services to the MSMEs in Andhra Pradesh. The corporation has also been appointed as Implementing Agency for the implementing of existing and new CFCs in Andhra Pradesh.

1.2. In this tender, the lowest price is the sole criteria for selecting the item/supplier. The two-bid system, which is followed, has been designed to eliminate those items which do not match the technical specifications, or not having the proven technology and to eliminate firms that do not have the financial or technical capability to supply, install and maintain the items. i.e., to provide after sales support for a period of minimum 5 years from the date of installation. Procurement will be subject to Public Procurement (Preference to Make in India) Order 2017 – Revised vide GoI, Min. of Commerce and Industry, DPIIT Ref No. P-45021/2/2017- PP (BE-II) dated 16-09-2020.

1.3. Every paisa spend by the corporation is public money and hence accountable. Therefore, after sales service and up-time guarantee on the performance of the item purchased by the Corporation have to be given paramount importance. Corporation will be dealing with defaulters in these fronts with a firm hand, which may lead to black listing and recovery of damages. We request our valuable suppliers to avoid such unpleasant situations.

1.4. It is also essential while dealing with public money that utmost transparency has to be maintained in the procurements of the corporation. All decisions will be published from time to time on e-procurement website https://eprocure.gov.in/eprocure/app

1.5. The purpose of this bid to establish a Common Facility Centre (CFC) in Coconut cluster sector at Survey No: 35-17, 35-18, 35-16, 35-14A, B, D, E, F, Yalamanchili Mandal, West Godavari District, Andhra Pradesh - 534260 under MSE-CDP guidelines. A Special Purpose Vehicle is constituted for the purpose, i.e., Godavari Coconut Association, (SPV), Flat 5, Sambunipeta colony, Ward 10, Palakollu, Fhazul Bag Peta, West Godavari, Andhra Pradesh – 534260, All the supplies, services etc., as per the Tender Document to be executed against the SPV.

1.6. The funds are made available by the Central

Government, State Government of Andhra Pradesh and SPV to the CEO, APMSMEDC under MSE-CDP Scheme towards the procurement process under this tender notification.

1.7. Amendment of bidding documents: At any time prior to the deadline for submission of bids, APMSMEDC, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, may modify the bidding documents by amendment. All the bidders at their own interest to verify by logging on to website for updating with corrigendum(s) issued in the contract. The APMSMEDC, at its discretion, may extend the deadline for the submission of bids.

1.8. The CEO APMSMEDC has right to cancel the tender at any time in the interest of Public Money and bidders have no right to challenge the decision.

1.9. Court Jurisdiction: In case of any dispute to approach the local court in Amaravathi.

1.10. Abbreviations:

APMSMEDC	Andhra Pradesh MSME Development Corporation
BG	Bank Guarantee
CEO	Chief Executive Officer
CFC	Common Facility Centre
CPPP	Central Public Procurement Portal
EMD	Earnest Money Deposit
GFR	General Financial Rules 2017
LD	Liquidated Damages
MAF	Manufacturers Authorization Form
MSE-CDP	Micro Small Enterprises – Cluster Development Program
MSME	Micro, Small and Medium Enterprises
PS/SD	Performance Security/Security Deposit
SPV	Special Purpose Vehicle
TIA	Tender Inviting Authority
Technical Specifications	Machinery Technical specifications as required by the end User

1.11. Contacting APMSMEDC: Bidder shall not approach APMSMEDC officers beyond office hours and/or outside APMSMEDC office premises, from the time of the tender call notice to the time the contract is awarded. Any effort by bidder to influence APMSMEDC officers in the decisions on bid evaluation, bid comparison or contract award may result in rejection of the bidder’s offer and bidder may also be marked as

ineligible for future bids. If the bidder wishes to bring additional information to the notice of the APMSMEDC, it should be in writing.

1.12. APMSMEDC reserves the right at the time of award to increase or decrease the quantity, as indicated in tender document. During the validity of the contract period thereof, the bidder should be ready to supply any No. of equipment as requested.

1.13. APMSMEDC reserves the right to modify/extend/cancel the tender at any point of time without giving any prior notice/any reasoning.

1.14. Contract Signing: Successful bidder/bidders will be intimated in writing that their bid has been accepted. On submission of Performance Bank Guarantee, the contract form will be signed. APMSMEDC reserves the right to alter, add or delete the contract conditions on the interest of public money.

1.15. APMSMEDC reserves its right to negotiate with the bidder with lowest quote including technical specifications.

1.16. Manuals and Drawings: Bidders to upload the OEM standard brochures along with technical specifications of the machinery in case of purchase of machinery. Upon award of contract, the successful bidders shall supply operation and maintenance manuals in English or Telugu (together with drawings of the goods and services where applicable).

1.17. User License and Patent rights: The successful bidder shall provide licenses for all software products, whether developed by it or acquired from others. The bidder shall indemnify the purchases against all third-party claims of infringement of patent, trademarks or industrial design rights arising from use of the goods, software package or any part thereof.

1.18. Sub Contract: Sub-contracting is not allowed in Works contract, supply of Machinery, installation, test run, commissioning, etc.

Chapter – 2

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2.1 Bid Process and Bid Dates

2.1.1 E Procurement: The details of bidding conditions and other terms can be downloaded from the electronic procurement platform of Government of India i.e., https://eprocure.gov.in/eprocure/app. Two bid system (simultaneous receipt of separate technical and financial bids) through online. Bidders would be required to register on the e-Procurement market and submit their bids online. On registration with the e-Procurement market place they will be provided with a user id and password by the system through which they can submit their bids online.

2.1.2 **Technical Bid**: Interested bidders to download the contract documents and corrigendum issued if any. Bidders should read, understand the contents and bid details with technical details. Clarification if any may be sought in writing prior to on or before pre-bid meeting. Bidders to submit the technical compliance statement as per Form T-1. Non Submission of Form T-1, indicates that bidder agrees to the specifications as mentioned in the contract form. The Bidders on completion of contract documents, the same is to be signed in ink by the Authorised Signatory in each page and affix the company stamps. The scanned copies of the contract documents are to be uploaded in the e-portal and in no case submission of physical documents will be encouraged. Authorised signatory should have appropriate authority and same is also to be uploaded. Any short fall of documents leads to rejection in Technical Evaluation. After technical evaluation, the qualified bidders will be notified automatically by the system software and the opening of financial bid date will be intimated to them by APMSMEDC through e-mail.

2.1.3 Financial Bid: Financial bid is also to be submitted along with Technical bid in the e-portal. The bidders also upload the cost sheet breakdown along with Financial bid indicating the total values of the tender schedule including all Costs, services, Warranty, AMC, Taxes etc., and upload the Cost sheet Form F 1 as provided in Chapter 5 at the time of financial bid submission. **If the price bid/Cost sheet is attached along with Technical bid documents, their bid will be disqualified**. The financial bid of technically qualified bidders will only be opened and in no case the financial bid of not qualified bidders will be opened through e

procurement site.

2.1.4 **Bid Dates**

Time schedule of various tender related events:

Sl. No.	Tender Activity	Date & Time
1	Bid Calling Date	18.02.2026
2	Pre-Bid Meeting (Hybrid)	23.02.2026 @ 2:00 PM
3	Issue of Pre-Bid Clarifications	25.02.2026
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5	Technical Bid Opening Date & Time	10.03.2026 @ 4:30 PM
6	Financial Bid Opening Date & Time	To be intimated later

2.2 Details of Tender Inviting Authority, End User, E Procurement Help Desk

2.2.1	Tender Inviting Authority	The CEO Andhra Pradesh MSME Development Corporation 2nd Floor, PVS Land Mark, Mangalagiri, Guntur, 522503 Phone No: 0866 – 2411459 E-mail: ceo-apmsmedc@ap.gov.in
2.2.2	End User	The Director Godavari Coconut Association, (SPV) Registered Office: Flat 5, Sambunipeta colony, Ward 10, Palakollu, Fhazul Bag Peta, West Godavari, Andhra Pradesh - 534260 Director Contact No: 8686993306 e-mail: godavaricoconutassociation@gmail.com Technical Consultant: 9966169901 envisionconsultum@gmail.com
2.2.3	E Procurement Help Desk	For any technical related queries please call at 24x7 Help Desk Number: 0120-4711508, 0120-4001002, 0120-4001005 & 0120-6277 787 Email Support: For any issues or classification's relating to the published tenders, bidders are requested to contact the respective Tender Inviting Authority. Technical – support-eproc@nic.in Policy Related – cppp-doe@nic.in

2.3 Statement of important limits/values related to bid: Bid currency in Indian Rupee (INR) only.

Sl No	Details	Payee details/Payment Options
2.3.1	Cost of Tender Form (Non-Refundable)	Cost of Tender Form is Rs. 5,000/- (Non-Refundable) Payment is to be made through NEFT to APMSMEDC A/c No 39677901097 IFSC Code No: SBIN0016857 Note: NEFT details to be uploaded along with tender documents - Note 1: Micro and Small Enterprises (MSEs) in relevant Manufacturing, as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises, GOI or are registered with the Central Purchase Organizations or the concerned Ministry or Department are exempted from Tender form/ Bid Security/EMD deposits on submission of relevant documents. **Note 2: The bidders having in-house manufacturing facilities for the machinery specified in this tender shall be eligible to claim exemption from payment of the Tender Form cost. Bidders not possessing such facilities shall not be entitled to this exemption and must remit the prescribed Tender Form cost; failure to furnish proof of such payment shall result in disqualification at the Technical Evaluation stage.**
2.3.2	Bid Security/ EMD	All Bidders submit Bid Security/EMD validity of 45 days from the bid closing date as per the following: i. Schedule A – Rs.2,00,000/- ii. Schedule B – Rs.5,00,000/- iii. Schedule C – Rs.3,00,000/- iv. Schedule D – Rs.4,00,000/- v. Schedule E – Rs.4,00,000/- vi. Schedule F – Rs.5,00,000/- vii. Schedule G – Rs.2,00,000/- viii. Schedule H – Rs.1,00,000/- ix. Schedule I – Rs.1,00,000/- Total Tender Bid Security/EMD is Rs.27 Lakh Bid Security/EMD to be submitted in the form of

		Bank Guarantee/DD favoring: The CEO, APMSMEDC, Mangalagiri Soft copy of the Bank Guarantee/DD to be uploaded and original to be submitted by hand or post to reach within 48 hours from the Bid closing date to the office of the CEO, APMSMEDC.
		Note 1: Non-receipt of original Bid Security/EMD leads to tender disqualification. **Note 2:** Micro and Small Enterprises (MSEs) in relevant Manufacturing, as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises or are registered with the Central Purchase Organization or the concerned Ministry or Department are exempted from Bid Security/EMD deposits on submission of relevant documents. **Note 3:** The bidders having in-house manufacturing facilities for the machinery specified in the respective schedules shall be eligible to claim exemption from submission of the Earnest Money Deposit (EMD). Bidders not possessing such facilities shall not be eligible for EMD exemption, and failure to submit the prescribed EMD shall result in disqualification at the Technical Evaluation stage. **Note 4:** Bid Security/EMD of unsuccessful bidders will be released within 30 days of the Award of Contract subject to the fulfilling of Contract conditions. (BG Proforma is given as Appendix I)
		The Successful Bidder/Bidders to submit Performance Security/Security deposit in the form of Bank guarantee @5% on the contract awarded value and should remain valid for a period of Sixty days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Bank Guarantee to be submitted within 15 days of award of contract, favoring: **Godavari Coconut Association, West Godavari** Note 1: Bidders were advised to submit the Performance Security in multiple parts:

2.3.3	Performance Security	i. Performance Security for the supply of Machinery and associated costs as mentioned in the Cost sheet and should remain valid for a period sixty days beyond the Machinery installation & operation. ii. Performance Security for the Warranty, AMC etc., as mentioned in the cost sheet and should remain valid for a period of sixty days beyond the completion of Warranty & AMC period. Note 2: Non-receipt of Performance security in stipulated period leads to forfeiture of Bid Security/EMD and other statutory actions as per the Government Regulations in force. (BG Proforma is given as Appendix II)
2.3.4	Contract Award value	The bidders note that, financial bid is inclusive of, Supply, Delivery, Installation, Trial Run, Commissioning, Training of staff, Warranty Period for One year or Manufacturing company specifications, whichever is higher and additional Annual Maintenance Contract for two years. This value is all inclusive of Machinery cost, services, Taxes, Transportation etc., Note: The Successful contractor will be paid depending upon the fund's availability of Govt. of India. The successful contractor submits the detailed plan of project execution with timelines for approval by the SPV management. The supply and installation process will be initiated to quantify the progress in phase wise with an aim to obtain allocation of GoI funds without any hassle.
2.3.5	Bid Validity Period	180 days from the date of opening of bids
2.3.6	Variation in Qty	The decision of the CEO, APMSMEDC, is final on quantity variations.
2.3.7	Period of Signing Contract	Within 15 days from the Award of contract to successful bidders on submission of PBG.
		The Successful bidders to complete the Machine Installation and other contractual

<table>
<tr>
<td>2.3.8</td>
<td>Contract Execution Period</td>
<td>obligations within 90 days from the date of issue of Purchase Order.

The CEO, APMSMEDC, is to be intimated regarding the delivery schedule from time to time to ascertain the progress.
<table>
<tr><th>Schedules</th><th>W.E.F</th><th>Supply to be completed by</th></tr>
<tr><td>Schedule A to C</td><td>Receipt of Purchase Order from AP MSME DC preferably 15 days from the contract</td><td>60 days from the date of PO preferably by 30 Apr 2026</td></tr>
<tr><td>Schedule D to F</td><td>On issue of AP MSME DC PO; preferably in Apr 2026</td><td>60 days from the date of PO, preferably by 30 Jun 2026</td></tr>
<tr><td>Schedule G to I</td><td>On issue of AP MSME DC PO; preferably in Jun 2026</td><td>60 days from the date PO, preferably by 31 Aug 2026</td></tr>
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<tr>
<td>2.3.9</td>
<td>LD for late deliveries/ installations</td>
<td>Liquidate Damages for late deliveries/ Installations:
1% of the late delivered or deemed late delivered goods for One week or part thereof, 1.5% for Two weeks or part thereof, 2% for Three weeks or part thereof, 2.5% for 4 weeks or part thereof and so on subject maximum penalty up to 5% of total value.
Note: Late deliveries/Installations beyond the permissible period attract LD recoveries, encashment of PBG and other statutory actions as per the Government Regulations in force. However, delay from SPV side if any towards handing over of shed for installation of machinery will not attributable to the bidder.</td>
</tr>
</table>

2.4 Payment Terms:

Sl No	Details	Payment Value & Conditions
2.4.1	On signing of Contract	30% of the contractual value
2.4.2	On intimation of Machine readiness	30% of Machinery cost on confirmation from the OEM that machine is ready to dispatch and after demonstration of its working condition to end users or their authorized representative.

		In case of Imported machinery, payment will be released through conditional Letter of Credit (LC) on shipment from the OEM country of origin.
2.4.3	On Installation of Machinery	30% of the Contractual value on confirmation and submission of requisite documents from End User.
2.4.4	On completion of contract	Balance of 10% of the contractual value released on fulfilling of terms & conditions of contract on confirmation and submission of requisite documents by the End User.

2.5 Bidders Qualifications:

2.5.1 The Bidder should be a manufacturer/authorized representative of a manufacturer/wholesale dealer/Distributor and should be in business of manufacture and or supply and maintenance of the related equipment for a minimum period of three (3) years in India as on bid calling date. The preference may be given to bidders who are registered in India and especially in the state of Andhra Pradesh. The details to be mentioned in Form-P1.

2.5.2 The Bidder to submit the certificate that, they have read and understood the entire tender documents and corrigendum issued (if any). Also, certifying that, upon successful award of the contract, the successful bidder will abide and adhere to the tender instructions. The details to be mentioned in Form-P2.

2.5.3 The Bidder should submit the Manufacturer’s Authorization Form (MAF) for all the offered products / items, as per the Tender schedule issued by Original Equipment Manufacturer (OEM) authorizing the bid for tendering which is deemed as an agreement in between the bidder and OEM for the support and spares till the warranty & AMC period. The details to be mentioned in Form-P3. The OEM is restricted to providing the MAF to maximum of two dealers/authorized representatives. In case of participation in tender process by OEM, they are restricted to provide any another dealer/sub-dealer/authorized representative. In case of OEM & dealer participation with the MAF, both will be technically disqualified.

2.5.4 The Bidder / OEM may have a Registered Service Centre / Franchise Service Centre in the

state of Andhra Pradesh as on bid submission date. Preference may be given to the bidders who have the office in Andhra Pradesh, but not a mandatory clause. The details are to be provided in Form P-4.

2.5.5 The Bidders, either Manufacturer or Distributor should have positive net worth and disclose their annual turnover for the last three financial years, i.e., 2022-23, 2023-24 and 2024-25 in Form P-5. The minimum eligibility turnover for Manufacturer or distributor in any one FY is as follows:

	Manufacturer Turnover In Rs. Lakhs	Dealers/Distributors/Authorised Representatives Turnover in Rs. Lakhs
Schedule A	114	75
Schedule B	345	230
Schedule C	210	140
Schedule D	270	180
Schedule E	270	180
Schedule F	323	215
Schedule G	143	95
Schedule H	68	45
Schedule I	68	45

2.5.6 The Bidder/OEM should have cumulative sales of related machinery of at least 3 Nos. in the last three financial years. The Bidder/OEM should furnish the information on past major supplies under the relevant products/services. The details are to be mentioned in Form-P6.

2.5.7 The bidder should submit/give declaration stating that they are not debarred/blacklisted by any State Government, Central Government, Central & State Govt. Undertakings/ enterprises/ Organizations and by any other Quasi Government bodies/ Organizations in India for non- satisfactory performance, corrupt & Fraudulent or any other

unethical business practices. If the bidder is debarred/ blacklisted as mentioned above, such bidder becomes ineligible to participate in the bidding process. In case of any concealing of information relating to blacklisting or pending of cases mentioned above or submission of fake information/fake documents, APMSMEDC reserves the right to cancel the work order/contract allotted, apart from forfeiting of EMD/PBG. APMSMEDC reserves the right to take penal action on the bidder. The details are to be mentioned in Form-P7.

2.5.8 Bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority as per G.O. Ms. No. 9, Dt. 25-02-2021 issued by Industries & Commerce Department, Go AP. (DPIIT registration certificate copy to be submitted. Bidder shall have to submit the Undertaking as per Form-P8.

2.5.9 Technical Deviation: Bidders submit the declaration regarding the technical specifications compliance clearly indicating that the supplies are of Higher, Complied or lower to the tendered specifications in Form T1. Proper justification with OEM specifications should be provided in case of lower conditions. Non-submission Form T1, will be accounted as vendor agreed for the supply of machinery equal and compatible with the tender specifications.

2.6 Bid Submission Procedure:

Sl No	Item	Description
2.6.1	Procedure for Bid Submission	Bids shall be submitted online on https://eprocure.gov.in/ 1. The participating bidders in the tender should register themselves free of cost on e-procurement platform on the above website. 2. Bidders can log-in to e-procure platform in secure mode only by signing with the requisite Digital certificates.

		3. The bidders who are desirous of participating in e-procurement shall submit their technical bids, price bids as per the website specifications. 4. The bidders should scan and upload the respective documents in Pre-Qualification and Technical bid documentation as detailed at Chapter 4 and 7 including EMD. The bidders shall sign on all the statements, documents certificates uploaded by them, owning responsibility for their correctness/authenticity. 5. The rates should be quoted in INR and online only
2.6.2	Other conditions	1. **After uploading the documents, in respect of Bid Security are to be submitted by the bidder to the O/o the CEO, APMSMEDC, Mangalagiri.** If any of the certificates, documents, etc., furnished by the Bidder are found to be false / fabricated / bogus, the bidder will be disqualified, blacklisted and action will be initiated as deemed fit and the Bid Security will be forfeited. 2. **APMSMEDC** will not hold any risk and responsibility regulating non-visibility of the scanned and uploaded documents. 3. The Documents that are uploaded online and clarifications taken by **APMSMEDC** will only be considered for Bid Evaluation.

2.7 Special Conditions

The Bidder is wholly responsible for supply, installation and other services as per the contractual agreement. The successful bidder delivers a fully functional, tested, and commissioned facility. The Bidder to consider all the factors while quoting the financial bid. Few such aspects are listed below:

2.7.1 **Site Inspection**: The bidders are advised to visit the site and are permitted to calculate the requirements to arrive the actual quantities needed for installation of Machineries and their accessories. As the specialized machinery requires proper ergonomics, the successful bidder should give their designs in advance for approval.

2.7.2 Issue of Purchase Order: Upon the purchase Agreement, the successful bidder must submit the execution plan to SPV Management for their acceptance. On approval of Execution plan, the successful bidder will be issued with the purchase order and complete the supply & installations accordingly.

2.7.3 **Installation precautions**: The Successful bidder is wholly responsible for the machinery installation as per the OEM guidelines. Proper due care to be taken to avoid any mishap. The Bidder is responsible for proper site preparation, Proper Packing of Machinery, Planned Transportation, Suitable Insurance, Proper electrification & earthing, Manpower training, etc., which will help in smooth installations.

2.7.4 **Machinery User Manuals, Drawings, Flow Charts etc.,** The machinery drawings, flow charts, user manuals, Periodic Maintenance schedules, list of spare parts, any other documents for the smooth functioning of equipment to be uploaded by the bidder along with bid documents. The medium of language is English for this purpose.

2.7.5 **Obsolete Machinery:** The bidder should quote for the latest machinery or the machinery having suitable life as per the tender specifications and not for any obsolete Machinery.

2.7.6 **Technology Upgradation**: The bidder is under obligation to upgrade the technological developments that happened during the Warranty & AMC Period. As processing plant is being established with industry 4.0 standards, OEMs/Successful bidders are under obligation to upgrade the latest updates during the warranty period and later, intimation to the SPV management regarding the latest developments.

2.7.7 **Force Majeure**: In the event of unforeseeable circumstances that prevent the successful bidder from fulfilling the awarded contract, the same is to be communicated immediately to the CEO MSMED, SPV Management, for initiating the remedial actions.

2.7.8 **Liquidated Damages:** Bidders to note that, upon giving the contract, if the Supplier fails to fulfil the contractual obligations, a fine of 1% per week till the completion/termination of contract will be imposed subject to a maximum of 5% of the total contract value. Besides, the supplier may be blacklisted as per the existing rules & regulations.

2.7.9 **Termination Insolvency**: If the bidder becomes bankrupt or otherwise insolvent prior or during the tender or during the period of contract, the CEO

APMSMEDC may terminate the contract as per the existing law and suitable provisions may be initiated in their discretion.

2.7.10**Resolution of Disputes**: In the event of any unfortunate dispute, after the award of contract, the Purchaser and the Supplier shall make every effort to resolve amicably by direct formal negotiations. If the dispute is not resolved in a month's duration, either party may seek remedy as per the Arbitration & Reconciliation Act 1996 and Arbitration & Reconciliation (Amendment) Act 2021.

Chapter – 3

Schedule of Requirements

3.1 The successful bidders to supply the following machinery on turnkey basis to M/S Godavari Coconut Association (SPV), Sy. No. Survey No: 35-17, 35-18, 35-16, 35-14A, B, D, E, F; Yelamanchili Mandal, West Godavari District – 534260. The successful bidder delivers a fully functional, tested, and commissioned facility on turnkey basis. The bidders are required to certify that; they have visited the project site and understood the project requirements in consultation with SPV management during working hours.

3.2 The successful bidders to establish a Coconut industry on turnkey basis by supply, Installation, Testing, Commissioning, Trial Run of Machinery & Equipment, and providing training of staff. The Bidders are advised to go through the Machinery specifications and assess their actual requirements prior to submission of the bids.

The Bid is divided into following **9** schedules. The interested bidders can bid one or more schedules as per their choice/convenience.

List of Machinery for the bid is invited

Schedule A

Sl No	Machinery Details	Qty
01	Effluent Treatment Plant	01
02	Rainwater Harvesting Setup	01
03	Water Processing Setup including RO water tank Plant 8000 LPH	01

	along with Sump 50000 KL	

Schedule B

Sl No	Machinery Details	Qty
01	Rooftop Solar Setup 650 kVA	01

Schedule C

Sl No	Machinery Details	Qty
01	Electrical Installation & Equipment’s including 700 kVA Transformer	01

Schedule D

Sl No	Machinery Details	Qty
01	Coconut Primary Processing: Storage containers attached with Electric Chain Hoist system and Coconut Dehusking & Deshelling Setup	01

Schedule E

Sl No	Machinery Details	Qty
01	Pairing System Setup with Conveyor	01
02	Coconut oil Extraction setup with provision for Testa & Virgin Oil	01

Schedule F

Sl No	Machinery Details	Qty
01	Coconut Meat Processing and Milk extraction Setup	01

Schedule G

Sl No	Machinery Details	Qty
01	Quality Control (QC & QA Lab) Setup	01
02	Industrial Air Conditioning	01
03	DG Set 320 kVA	01

Schedule H

Sl No	Machinery Details	Qty
01	Training Skill Development Setup	01

Schedule I

Sl No	Machinery Details	Qty
01	Material Handling Equipment’s	01

Chapter – 4

Specifications and allied Technical Details & Quality Assurance

The bidder(s) are responsible for erecting the Common Facility center in Coconut Cluster West Godavari for providing the following facilities:

Schedule A

Sl No	Machinery Details	Qty
01	Effluent Treatment Plant	01
02	Rain Water Harvesting Setup	01
03	Water Processing Setup including RO water tank Plant 8000 LPH along with Sump 50000 KL	01

A1. EFFLUENT TREATMENT PLANT

ETP & RO Water System Specifications

Parameter	Specification
Treatment Capacity	50 KLD (50 m^3/day)
Inlet Flow Rate	50 m^3/day
Technology	MBBR (Moving Bed Biofilm Reactor) with Aerobic Microbial Degradation, Sedimentation & Tertiary Filtration
Treated Water Quality	Suitable for Industrial Reuse or Compliant Discharge (as per PCB norms)

A1.1. PROCESS FLOW & UNITS INCLUDED

Stage No.	Unit	Function
1	Bar Screen Chamber (BS)	Removal of coarse solids
2	Collection Tank cum Equalization Tank (CT)	Flow equalization & pH balancing
3	Primary Clarifier (PC)	Sedimentation & sludge separation
4	Aeration Tank (AT) – MBBR Media	Biological treatment through aerobic biofilm
5	Tube Settler Tank (TS)	High-efficiency lamella sedimentation
6	Treated Water Tank (TW)	Temporary storage of clarified water
7	Pressure Sand Filter (PSF)	Removal of SS, turbidity
8	Activated Carbon Filter (ACF)	Removal of odour, colour & organics
9	Final Water Tank	Collection of fully treated water

A1.2. CIVIL WORK DIMENSIONS (MANDATORY)

Parameter	Specification
Width	3 metres
Length	10 metres
Depth	4 metres
Construction Material	RCC M30 reinforced, plastered & waterproofed with epoxy inner lining
Provisions	Inlet, outlet, and overflow provisions

A1.3. ELECTROMECHANICAL & PROCESS COMPONENTS

Component	Specification
Treatment Technology	MBBR – aerobic moving bed biofilm reactor

Media	High-surface-area biofilm media for high BOD/COD reduction
Air Blower	0.75 kW, continuous duty, low-noise
Diffusers	Fine-bubble membrane diffusers
Pumps	Raw effluent transfer, sludge, & treated-water transfer pumps
Filtration	PSF + ACF dual stage
Filter Media	Graded sand & anthracite carbon
Piping	UPVC / HDPE / MS-EPDM as per duty
Valves	CI/SS isolation & non-return valves
Electrical Panel	Powder-coated control panel with MCC, overload protection & motor starters
Instruments	Flow meter, pressure gauges, air release valves, drain valves

A1.4. EXPECTED PERFORMANCE

Parameter	Inlet (Max)	Outlet (Target)	Compliance
BOD	300–400 mg/L	< 20 mg/L	CPCB & State PCB Norms
COD	600–1000 mg/L	< 100 mg/L	CPCB & State PCB Norms
pH	6–9	6.5–8.5	CPCB & State PCB Norms
TSS	High	< 30 mg/L	CPCB & State PCB Norms
Oil & Grease	Moderate	< 10 mg/L	CPCB & State PCB Norms

A1.5. VENDOR SCOPE – COMPLETE TURNKEY EXECUTION

A) Engineering & Supply

- All RCC civil structures
- All tanks, biological media, diffusers, filtration units
- Pumps, blowers, electrical panel, instruments & valves
- Interconnecting pipeline network
- Electrical wiring, cabling, earthing

B) Civil Works (Mandatory included)

- Complete construction of tanks as per dimensions shown above
- Foundation, trenches, walkways, service platforms and painting

C) Installation & Commissioning

- Mechanical & electrical erection
- Hydraulic leak testing
- Trial run & performance validation
- Training for operators

D) Documentation

- Piping & Instrumentation Diagram (P&ID)
- Operating & maintenance manual
- Compliance certificates for environmental discharge

A1.6. WARRANTY REQUIREMENTS

- Minimum 1-year warranty on complete plant (pumps, blowers, control panel, filters & media)
- Performance guarantee for treated water output
- Availability of spares and service support must be ensured

A2. RAINWATER HARVESTING SETUP

A2.1. System Objective

To capture, filter, store and utilize rainwater from the complete PEB shed roof area by means of a fully engineered pipeline network, first-flush treatment, groundwater recharge and clean-water storage tank.

A2.2. Scope of Work (Turnkey Execution)

The vendor shall supply, install and commission the entire rainwater harvesting system including:

Component	Inclusion
Pipeline Network	Roof gutter and down-take pipeline network across full shed perimeter
Filtration	Filtration and first-flush separation system
Storage	Underground / ground-level rainwater storage tank
Recharge	Recharge pit / bore recharge unit (if applicable)
Installation	Civil, mechanical, plumbing and connections up to handover stage

All design, labour, materials, consumables, equipment and transportation shall be included in the supplier’s scope.

A2.3. Gutter & Piping Network

Component	Specification
Gutter Type	Heavy-duty PEB roof gutters with sloped layout
Material	Pre-coated GI sheet / Aluminium / PVC-lined metal (non-corrosive grade)
Down-take Pipes	HDPE / PVC-U pressure class pipes
Diameter	110 – 200 mm (based on roof area & rainfall intensity)
Fixing Hardware	SS clamps, supports, collars & brackets
Joints	Solvent-welded / Rubber-gasketed leak-proof couplings
Silt / Leaf Arrestors	Provided at inlet locations

Design must accommodate peak rainfall flow, ensure no roof stagnation, and withstand extreme wind and weather loads.

A2.4. Filtration & First-Flush System

The system shall include the following components for water treatment:

- Primary leaf & debris trap
- Gravel + sand graded multi-layer filter
- Charcoal / anthracite carbon polishing media
- Automatic first-flush diversion valve to eliminate contaminants from initial rainwater
- Inspection & cleaning access chamber
- Designed for >20 years service life with minimal maintenance

A2.5. Rainwater Storage Tank

Parameter	Specification
Storage Capacity	≥ 100,000 liters (minimum)
Tank Type	Reinforced RCC underground / Above-ground MS/HDPE modular tank
Internal	Food-grade waterproof epoxy

Coating	
External Coating	Anti-corrosion and moisture barrier
Accessories	Manhole cover, level indicator, overflow line, sludge drain line

Civil foundation and structural work for tank installation must be included by the vendor.

A2.6. Water Distribution & Pumping

- HDPE / CPVC distribution pipeline from tank outlet to utility points
- Gravity / booster mode based on user requirement
- Non-return valves, isolation valves & strainers included
- Pump house provision for transfer, flushing & maintenance operation

A2.7. Recharge System (if required by client / regulation)

- Recharge bore / recharge pit / percolation trench
- Filled with graded pebbles, boulders and sand layers
- Geo-mesh filter media lining
- Silt trap sump for long-life retention

Recharge system shall comply with local water board & environmental standards.

A2.8. Electrical & Automation

- Level sensor for high/low tank indication
- Pump start/stop logic based on water level
- Weather-resistant control panel enclosure
- Indicator lights for maintenance alerts

A2.9. Safety, Hygiene & Maintenance

- Screened vents to eliminate mosquito entry
- Lockable access hatches
- Anti-slip walkway grating near tank entry & filter sections
- Washout facility for filter bed flushing
- All inspection chambers shall be accessible without excavation

A2.10. Drawings & Documentation Required from Vendor

Document Type	Description
Layout Drawing	Layout of gutter & pipe routing
Calculation Sheet	Hydraulic calculation sheet for rainfall handling
Structural Drawing	Structural drawing of the storage tank
Process Diagram	P&ID for filtration and pumping loop
Manual	Operation and maintenance manual
Certificates	Material test certificates where applicable

A2.11. Warranty

- Minimum 1-year full system warranty, including tank, piping, equipment and workmanship
- Supplier must undertake testing & commissioning before handover.

A3. WATER PROCESSING SET UP INCLUDING RO WATER TANK PLANT 8000 LPH ALONG WITH SUMP 50000 KL

Reverse Osmosis (RO) Water Treatment Plant Specifications (8000 LPH)

Product Water Capacity: 8000 LPH (8 m^3/hr)

Operating Mode: Manual / Semi-Automatic

Streams Offered: One Stream

A3.1. PROCESS FLOW

Raw Water Tank → Raw Water Feed Pump → Pressure Sand Filter → Activated Carbon Filter → Micron Cartridge Filter (10/5 micron) → Antiscalant Dosing → High-Pressure Pump → RO Membrane Skid → Permeate (Product) → Product Water Tank → Reject Drain

A3.2. TREATED WATER QUALITY (OUTPUT)

Parameter	Expected Value
TDS	< 50 mg/L
Hardness	< 5 ppm
Conductivity	< 80 µS/cm
Chloride	7.0 ± 0.5 ppm

Note: Product water quality depends on raw water not exceeding design

limitations.

A3.3. RAW WATER INPUT LIMITING CONDITIONS

Parameter	Allowable Value
pH	6.0 – 9.0
Turbidity	< 1 NTU
SDI	< 5
Residual Chlorine	NIL
Heavy Metals	NIL
Organic / Bacterial Load	NIL
Oil & Grease	NIL
Max Temp.	< 40°C

A3.4. EQUIPMENT & MECHANICAL SPECIFICATIONS (8000 LPH)

Component	Specification
Raw Water Storage Tank	5000 L × 4 Nos
Raw Water Feed Pump	Centrifugal monoblock CI pump, 20 m^3/hr @ 4 kg/cm^2, 3-ph motor
Pressure Sand Filter (PSF)	FRP vessel, dual media (sand + anthracite), 20 m^3/hr @ 4 kg/cm^2
Activated Carbon Filter (ACF)	FRP vessel, iodine-enhanced carbon media, 20 m^3/hr @ 4 kg/cm^2
Micron Cartridge Filter	FRP housing w/ 4 PP cartridges, rating 10/5 micron, 20 m^3/hr
Antiscalant Dosing System	Diaphragm dosing pump, 100 strokes/min
High-Pressure Pump	Multistage centrifugal SS-316 body, 20 m^3/hr @ 12–15 kg/cm^2, 7.5–10 kW
RO Membrane Skid	SS skid with FRP pressure tubes
RO Membranes	8040 Spiral-wound TFC membranes – 8 Nos
Membrane Housings	FRP high-pressure tubes (150 psi rated)
Reject Line	HDPE/CPVC with stainless steel isolation valves
Product Water	Minimum 10,000 litres

Storage Tank	

A3.5. INSTRUMENTATION & CONTROL

Instrument	Specification
Pressure Gauges	Bourdon tube type, SS wetted parts, 150 mm dial, 0–150 psi & 0–600 psi
Flow Indicators	2 Nos – Product Line & Reject Line
Online Conductivity / TDS Meter	Digital inline display
Sampling Taps	Feed / Product / Reject
Control Switches	Start / Stop / Pump selector

A3.6. OPERATING DATA

Parameter	Value
Feed Flow Rate	~ 16 m^3/hr
Product Flow Rate	~ 8 m^3/hr
Recovery	~ 50%
Working Pressure	12 – 15 kg/cm^2

A3.7. SCOPE OF SUPPLY (Vendor)

The vendor must supply and install the following:

- All mechanical equipment listed above
- Complete interconnecting pipeline network
- Electrical control panel, wiring & cabling
- Foundations & support structures
- Testing, commissioning & operator training
- O&M manual

*Note: Civil works for tank plinths and equipment foundation shall be included in vendor scope if required by tender.*8. WARRANTY

- 12 months from date of commissioning, covering defects in equipment and workmanship.

Schedule B

Sl No	Machinery Details	Qty
01	Rooftop Solar Setup 650 kVA	01

B1. ROOFTOP SOLAR SETUP 650 KVA

B1.1. System Overview

The project involves a grid-interactive solar rooftop power plant designed for a maximum output of 650 kVA (approx. 650 kW AC), which includes remote monitoring and lifetime performance optimization.

Scope of Work (Turnkey Basis):

The vendor is required to supply the complete system on a turnkey basis, encompassing:

- Engineering
- Procurement
- Installation
- Civil works
- Earthing
- Testing
- Commissioning

B1.2. Bill of Material and Technical Requirements

Component	Technical Specifications	Make / Standard	Quantity
PV Modules	Solar Panels 585 Wp Mono / Bi-Facial Topcon Crystalline	Emmvee / Goldi Green / Equivalent	1111 Nos. (approx.)
Inverter	Solar 125 kW + 50 kW On-Grid Inverters (3-Phase)	Sungrow / GoodWe / Equivalent	125 kW × 4 + 50 kW × 1
Mounting Structure	Hot-dip galvanized (HDG) panel module structure up to 4 ft height, IS 2062 compliant	HDG-JSW / TATA / AL	As per Design
Earthing Kit	TUV Certified, IS 3043, IS 2309	True Power	As per

	compliant		actual
Transmission Line / HT & LT works	As per DISCOM (TSSPDCL / or state utility) guidelines	Approved vendor	NA
Lighting Arrester	TUV Certified lightning arrester with down-conductor	True Power	1 Set
Cables – DC & AC Side, ACDB, DCDB	Fire-retardant solar cables and glands	Polycab / WaCab / Apar	As per actual
Accessories / Hardware	As per MNRE standards, SS-306 / AL / CPR	MNRE-approved	As per actual
Installation & Commissioning	Module mounting, inverter installation, electrical integration, SCADA, testing and approvals	Turnkey by vendor	As per Site
Transportation	All material logistics within scope	Vendor	Included

B1.3. Scope of Supply – Mandatory Deliverables (Full EPC)

The vendor must provide full EPC (Engineering, Procurement, Construction) supply, including both materials and complete execution.

A) Materials & Equipment

Category	Items Included
Solar Components	Solar panels, inverters, mounting structures
Electrical Safety/Protection	ACDB, DCDB, SPD, fuses, breakers, earthing kits
Interconnection	Cables, connectors, clamps, fasteners
Safety Systems	Lightning arrester & earthing grid
Monitoring	SCADA / remote monitoring interface

B) Complete Execution (Vendor to perform end-to-end work)

Execution Area	Specific Tasks Included
All Civil Works	RCC pedestals / foundations, walkways and safety arrangements, inverter room supports (if applicable)
Mechanical Installation	Mounting structure erection, module fixing torqueing
Electrical	Terminations, earthing, trenching, cabling, AC paneling

Installation	
Grid Integration	Synchronization with grid
Approvals	Application and coordination for DISCOM approvals
Finalization	Successful test run & commissioning, Hand-over with performance certification

B1.4. Mandatory Inclusion (Tender Compliance)

Requirement	Specification
Civil Works	All civil works are included.
Scope Definition	Everything is in vendor scope.
Buyer Scope	No material or installation shall be in buyer scope.
Handover State	The plant must be handed over in complete operational state.

B1.5. Documentation & Handover Requirements

Vendor must supply the following documentation:

- Single-line diagrams & layout drawings
- As-built drawings after installation
- Cable datasheets & torque sheets
- Performance guarantee certificate
- Operations & maintenance manual
- Warranty certificates for panels, inverters & structure

B1.6. Warranty Requirements

Component	Minimum Warranty
PV Modules	25 years (performance) + 10–12 years (product)
Inverters	10 years
Structure	10 years
Cables & accessories	5 years
Workmanship	Minimum 1 year

B1.7. Performance Obligations

- Capacity Utilization Factor (CUF): Vendor shall ensure plant performance at minimum 18–20% CUF (site-dependent).
- Monitoring: Vendor shall configure remote monitoring access for lifetime tracking.

Schedule C

Sl No	Machinery Details	Qty
01	Electrical Installation & Equipment’s including 700 kVA Transformer	01

C1. ELECTRICAL INSTALLATION & EQUIPMENT (INCLUDING 700 KVA TRANSFORMER)

C1.1 DESIGN BASIS & SYSTEM REQUIREMENTS

The electrical system shall be designed, supplied, installed, tested and commissioned for continuous-duty industrial operation of a coconut processing cluster comprising beverage processing lines, retort systems, preserved food processing, utilities, QC laboratories and administrative areas.

Incoming Supply Voltage: 11 kV, 3 Phase, 50 Hz

Connected Load: Approx. 550–600 kW

Maximum Demand: Approx. 500 kW

Transformer Capacity: 700 kVA

Target Power Factor: ≥ 0.95

LT Short Circuit Level: 50 kA

Duty: 24 × 7 continuous operation

C1.2 DISTRIBUTION TRANSFORMER – 700 KVA

Three-phase oil-filled outdoor ONAN transformer suitable for industrial duty.
• Rated Capacity: 700 kVA
• Rated Voltage: 11 kV / 433 V
• Vector Group: Dyn11
• Tap Changer: Off-circuit ±5% in 2.5% steps
• Accessories: Buchholz relay, OTI, WTI, PRV, oil level indicator, conservator with breather
• Standards: IS 1180 / IEC 60076

• Preferred Make: Siemens / Schneider / Rohitra / KLR

C1.3 HT PANEL (11 kV)

Indoor metal-clad HT panel with Vacuum Circuit Breaker (VCB).
• Rated Voltage: 12 kV
• Rated Current: 630 A
• Short Circuit Rating: 25 kA for 3 seconds
• Protection: Numerical relays (O/C, E/F, UV, OV)
• Metering: Digital multifunction meter
• Standards: IEC 62271, CEA regulations
• Preferred Make: ABB / Schneider

C1.4 LT PCC PANEL

Main LT distribution panel for entire facility.
• Rated Voltage: 415 V
• Rated Current: 1600 A
• Incomer: Electrically operated ACB
• Busbars: Electrolytic copper, tinned
• Short Circuit Rating: 50 kA
• Construction: Form-4, IP54
• Preferred Make: Schneider / Siemens

C1.5 MCC PANELS

For control of process and utility motors.
• Starters: DOL, Star-Delta, Soft Starter, VFD feeders
• Protection: MCCB / MPCB
• Enclosure: Form-4, IP54
• PLC interface ready
• Preferred Make: Siemens / Schneider

C1.6 VARIABLE FREQUENCY DRIVES (VFDs)

• Rating Range: 3 HP to 75 HP
• Duty: Continuous industrial duty
• Built-in harmonic mitigation
• Communication: Modbus / Ethernet
• Preferred Make: Siemens SINAMICS / Schneider Altivar

C1.7 CABLING SYSTEM

• HT Cables: 11 kV XLPE armored cables as per IS 7098
• LT Cables: Copper FRLS insulated cables
• Laying: GI ladder type trays and conduits
• Termination: Heat-shrink kits

C1.8 EARTHING & LIGHTNING PROTECTION

• Chemical earthing system (Qty as per the Electrical Standards. Separate earthing for Electrical Equipment, DG & Instrumentation Equipment to be considered)
• Earth resistance < 1 ohm
• Lightning arrestors with dedicated earth pits
• Standard: IS 3043

C1.9 DG & SOLAR SYNCHRONIZATION

• PCC EB, DG & Solar with proper Bus coupler to be considered. Solar to be Grid tied of rating 650kW. Proper outgoing ratings to be provided for each section in the PCC
• AMF and synchronizing panels for Synchronization of 320 kVA DG set.
• Integration of rooftop solar system. Reverse power and anti-islanding protection.

C1.10 INTERNAL ELECTRIFICATION & LIGHTING

• Industrial LED luminaires (IP65 in process areas)

• FRLS copper wiring • Industrial sockets

• Emergency lighting in critical areas

C1.11 TESTING, DOCUMENTATION & WARRANTY

• Factory & site acceptance testing

• As-built drawings and O&M manuals

• Training to plant personnel

• Minimum 12 months warranty

Schedule D

Sl No	Machinery Details	Qty
01	Coconut Primary Processing: Storage containers attached with Electric Chain Hoist system and Coconut Dehusking & Deshelling Setup	01

D1. COCONUT PRIMARY PROCESSING: STORAGE CONTAINERS ATTACHED WITH ELECTRIC CHAIN HOIST SYSTEM AND COCONUT DEHUSKING & DESHELLING SETUP

No.	Item	Qty

D1.1	Electric Chain Hoist system to dump raw nuts into the coconut storage container	1
D1.2	Coconut Raw Nuts Storage Container with gates for Dehusking station	1
D1.3	De-Husking Machine with Feed Conveyor and Chute for Nuts and Husk Discharge	6
D1.4	Nuts and Husk Discharge Conveyor 25 KL X 500 (x 312 mm Roller Dia)	2
D1.5	De-husked coconut storage container with automatic feeding of nuts by way of chute to hoist fittings	1
D1.6	System for handling husk wastage	1
D1.7	Coconut Storage Bins for Deshelling Stations	16
D1.8	Shell Discharge Conveyor 38000 L X 500 (Belt W) X 312 mm Roller Dia	1
D1.9	De-Shelling Machine with 2 Operator Cutter and Discharge Chute	16

D1.1 Electric Chain Hoist system to dump raw nuts into the coconut storage container

AND

D1.2 Coconut Raw Nuts Storage Container with gates for Dehusking station

1. Structure & Material

Feature	Specification	Details
Primary Material	GI (Galvanized Iron)	Complete structure fabricated using GI for superior corrosion resistance.
Surface Treatment	Sandblasted and Powder-coated	All components are sandblasted before being powder-coated for enhanced durability and finish.
Weather Resistance	Fully rust-proof and weather-resistant	Suitable for outdoor and harsh industrial environments.
Construction	Heavy-duty	Designed for continuous, high-throughput industrial operation.

2. Dimensions & Design

Parameter	Specification

Length	22.6 meters
Width	8.1 meters
Overall Height	14 feet (from ground level)
Base Frame Height	1.0 – 1.5 feet (Recommended)
Storage Design	Elevated Platform
Internal Base	Sloped
Flow Control	Anti-clogging structural design
Capacity	1.5 Lakh Nuts

3. Motorized Flexible Top Cover

The system includes a hinged, motor-operated top cover for weather protection and controlled access.

Component	Specification	Details
Function	Waterproof and Openable	Protects contents from rain and allows access for loading.
Cover Material	Flexible reinforced PVC sheet	UV-stabilized and tear-resistant. Flame-retardant (additional specification).
Motor Rating	1.5 HP (≈ 1.12 kW)	Power Supply: 3-phase, 415 V, 50 Hz.
Mechanism	Gearbox drive	For controlled and smooth opening/closing operation.
Controls	Local push-button station	Includes dedicated Emergency Stop provision.
Safety	Limit switches	Provided for full-open and full-close positions.
Maintenance	Quick-release fixing system.	For easy access and replacement.
Sealing	Weather sealing on edges	Prevents external water ingress.

4. Electric Chain Hoist System (Loading)

The hoist system is dedicated to dumping raw coconuts into the storage container, ensuring uniform distribution.4.1. General & Capacity

Feature	Specification	Notes

Function	Dumping raw coconuts into the container.	
Load Capacity	1 – 2 tons per lift (Standard)	Capacity to be finalized during vendor selection based on plant throughput requirements.
Travel	Covers entire container length	Ensures uniform loading and distribution of material.
Integration	Lifting height and travel length designed as per site layout.	

4.2. Motor & Power

Parameter	Specification	Details
Motor Rating	3 HP (≈ 2.24 kW) (For 2-ton Hoist)	Standard rating.
Power Supply	3-phase, 415 V, 50 Hz	Standard industrial supply.
Duty Cycle	S3 or higher	Suitable for frequent lifting cycles.
Protection (Motor)	Thermal overload relay + MCCB/MCB	Comprehensive electrical protection.
IP Rating	IP55 minimum	Protection against industrial dust and splashes.

4.3. Lifting Mechanism

Mechanism	Specification
Chain	Hardened alloy steel, high tensile grade.
Brake System	Dual brake system: Electromechanical brake + Manual mechanical brake (for safety).
Gearbox	Hardened helical/worm gear, grease-lubricated, maintenance-friendly.
Lifting Speed	Adjustable (typically 4–8 m/min) to match coconut inflow.

4.4. Hoist Control System

Feature	Specification

Control Type	Wired pendant control or wireless remote control (Vendor Option).
Controls	Up/Down/Left/Right/Travel/Stop controls.
Safety	Emergency stop integrated in control pendant.
Interlocking	Limit switches to prevent over-travel in lifting and trolley motion.

4.5. Safety Features (Hoist)

Safety Feature	Function/Description
Limit Switches	Upper and lower limit switches for lifting operation.
Travel Limits	Travel limit switches for hoist trolley movement along the I-beam.
Overload Protection	Via slip clutch or electronic load limiter.
Chain Guide	Load chain guide system to prevent chain twisting or jamming.
Hook Safety	Anti-drop safety latch on hook block.
Electrical	Phase failure / reverse phase protection.

4.6. Hoist Mounting

Feature	Specification
Track	Mounted on I-beam track along the container length.
Selection	Beam size and trolley wheels selected based on calculated load capacity.
Movement	Smooth and stable trolley movement across the full span.
Alignment	Proper alignment provided for uniform coconut distribution.

5. Discharge, Access, and Lighting

Category	Feature	Specification
Discharge Gates	Multiple gates along the bottom.	Slide/flap gates with adjustable flow control. Designed to prevent overfeeding/underfeeding. Compatible with conveyor feed or direct connection to de-husking units.
Access	3 ft width	Quantity: As per layout for inspection and cleaning

Doors	× 5.5 ft height.	accessibility. Dust- and water-sealed with heavy-duty hinges and locking latches.
Lighting	2 × 200 W industrial LED fixtures.	Mounted on top from one side. Total Load: 400 W (0.4 kW). IP65 protection rating. Safety guard/diffuser to prevent glare. Controlled from local switch panel.

6. Electrical Load & Protections

Component	Rating	Installed Load (kW)
Motor (Cover)	1.5 HP	1.12 kW
Lighting	2 × 200 W	0.40 kW
Total Additional Installed Load	-	≈ 1.52 kW

Electrical Protections

- Motor Protection: MCCB/MCB + thermal overload relay.
- Lighting Protection: Dedicated MCB circuit.
- Earthing: Comprehensive earthing for the full structure and all electrical equipment.
- Cabling: Cable routes via trays and conduits with IP65 junction boxes.

7. Safety, Maintenance, and Installation Safety Features (Structure & General)

Safety Feature	Description
Platforms	Anti-slip platform areas where access is required.
Railings	Safety railings around service sections.
Interlock (Recommended)	Prevent cover motor operation when access doors are open.
Emergency Stop	At hoist control and cover control station.
Warnings	Warning labels on all moving and hazard zones.

Maintenance & Access

- Access: Easy internal access through multiple doors.
- Cleaning: Possible without dismantling the primary structure.

- Drainage: Drainage points installed at low ends of the base.
- Durability: Low maintenance due to GI + powder-coated construction.

Installation Requirements

- Foundation: Civil foundation required to support static load (hopper + coconuts) and dynamic loads (hoist operation).
- Fixing: Anchor bolts required for securing the full-length structure to the foundation.
- Electrical Supply: Supply termination near the hoist control panel and cover motor control station.

Control Panel: Dedicated mounting space allocated for the main control panel.

D1.3 De-Husking Machine with Feed Conveyor and Chute for Nuts and Husk Discharge

Feature	Specification	Quantity & Total
Motor	7.5 HP, 3-Phase Industrial Motor	6 Machines
Power Supply		Total Power: 45 HP (6 x 7.5 HP)
Drive System	High-torque drive to support de-husking under full load without stalling.	
De-Husking Capacity	1200 – 1500 coconuts per hour (varies based on coconut quality)	Total Capacity: 7200 – 9000 coconuts/hour
Production Cycle	Designed for high productivity, 24x7 continuous production.	

1. Material & Construction

Feature	Specification
Primary Material	MS (Mild Steel)
Surface Treatment	Sandblasted and powder-coated for superior rust and corrosion resistance.
Operating Environment	Suitable for continuous industrial operation in all weather conditions.
Durability	Heavy-duty construction ensures a long operational life with minimal wear.

2. Physical Dimensions & Structure

Metric	Value
Overall Length (L)	1600 mm
Overall Width (W)	2700 mm
Overall Height (H)	2200 mm
Structure	Heavy-duty frame designed for vibration-free and stable performance.
Weight (Approx.)	*[Add an approximate weight here, e.g., 1800 kg]*

3. Power and Performance

Feature	Specification
Motor	7.5 HP, 3-Phase Industrial Motor
Power Supply	*[Add Power Supply details here, e.g., 415V AC, 50Hz]*
Drive System	High-torque drive to support de-husking under full load without stalling.
De-Husking Capacity	1200 – 1500 coconuts per hour (varies based on coconut quality)
Production Cycle	Designed for high-productivity, 24x7 continuous production.

4. Operational Features & Productivity

Feature	Description
Coconut Size Handling	Automatic adjustment; removes husk from virtually any size coconut without manual intervention.
Ease of Use	Simple operator interface with minimal training required.
Manpower Efficiency	Automatic operation drastically reduces manpower requirements to a single supervisor/feeder.
Cost Efficiency	High throughput ensures maximum return on investment with minimal operational cost per nut.
Husk Separation	Complete and clean separation of husk from the nut.

5. Feeding & Material Handling Systems5.1 Feeding Arrangement

Feature	Specification
Input	Integrated feed conveyor ensures smooth and uninterrupted input of coconuts.

Conveyor Type	Incline/Horizontal belt conveyor.
Feed Rate Control	*[Add Feed Rate Control details here, e.g., Variable Speed Drive (VSD) controlled]*

5.2 Discharge Arrangement

Feature	Specification
Output	Separate discharge chutes for nuts and husk.
System Integration	Discharge ports are aligned for direct connection to the plant's subsequent handling systems.
Compatibility	Dual conveyor compatibility for independent handling of husk and nuts post-processing.

5.3 Conveyor Build Quality

Feature	Specification
Belt Type	3-ply rubber belt for long-life performance and superior grip.
Belt Width	500 mm (ensures effective grip and alignment).
Roller Diameter	312 mm (ensures smooth travel and low friction).

6. Safety and Efficiency

Category	Feature	Specification
Safety Systems	Operator Protection	Emergency Auto-Stop (E-Stop) function for immediate machine shutdown.
	Mechanical Safety	All moving elements are fitted with heavy-duty protective covers and guarding.
	Electrical Safety	Integrated Overload and Fluctuation protection for safe motor operation and longevity.
Energy Efficiency	Design Optimization	Power-saving machine design, minimizing energy consumption per nut processed.
	Mechanism	Optimized husking mechanism reduces energy loss, heat generation, and operating temperature.

7. Maintenance & Serviceability

Feature	Specification
Design Philosophy	Low-maintenance design with robust components; minimizes the requirement for frequent part replacement.
Access	Strategically placed inspection and access panels are provided for easy cleaning, maintenance, and adjustments.
Downtime Reduction	High-quality smooth bearings and long-interval lubrication points significantly reduce operational downtime.
Lubrication	Centralized or easily accessible lubrication points.

D1.4 Nuts and Husk Discharge Conveyor 25 KL X 500 (x 312 mm Roller Dia)

Section	Specification Detail	Value / Description
1. Structure & Material	Frame Construction Material	Carbon Steel
	Corrosion Protection	Sandblasted and Powder-Coated (UV, Humidity, Chemical Resistant)
	Operating Environment	Continuous Industrial, Outdoor/Harsh
2. Dimensions	Overall Length	24 meters
	Belt Width	700 mm (approx. 2.3 ft)
	Height Adjustment	± 300 mm (1 foot)
3. Conveyor Belt	Belt Type	Troughed Rubber Belt, 3-ply, Heavy-Duty
	Resistance	Oil-resistant, Abrasion-resistant, Anti-slip profile
	Function	Designed to carry large volumes of coconuts and husk without deformation.
4. Throughput Capacity	Handling Rate	10,000 coconuts per hour
	Flow Management	Smooth discharge flow without jamming or clogging.

5. Motor & Drive System	Motor Power	7.5 kW
	Electrical Specs	3-phase, 415 V, 50 Hz
	Gearbox Ratio	1:25 (High-torque, low-speed conveying)
	Motor Protection	Thermal Overload Relay and MCCB/MCB
6. Stability & Frame Design	Frame	Reinforced structural frame (vibration-free)
	Support	Support legs with leveling adjustment for belt alignment
	Load	Designed for long-term continuous duty
7. Safety Features	Side Guards	Full-length side guards (to prevent spillage)
	Belt Return Protection	Protected to avoid operator contact
	Emergency Control	Emergency stop control provision near operating ends
8. Rollers & Bearings	Rollers	Heavy-duty with precision-machined shafts
	Bearings	Sealed (Dust-proof and Moisture-proof performance)
	Efficiency	Low-friction travel to reduce energy consumption and belt wear
9. Durability & Weather	Protection	Moving components protected from rain splash and dust
	Service Life	Designed for outdoor long-term service with minimum maintenance
10. Energy Efficiency	Optimization	Optimized torque transmission
	Consumption	Low energy consumption per ton of handling
	Design Effect	Belt and roller design reduces motor load (start and run)
11. Maintenance	Tensioning/Tracking	Quick-access belt tensioning and tracking system
	Lubrication	Minimal lubrication points with long-interval servicing
	Accessibility	Easy replacement of belts and rollers without major dismantling

12. Application & Scope of Supply (Additional Specifications)

Feature	Detail
Quantity Supplied	Two (2) Conveyors with identical specifications.
Conveyor 1 Purpose	Transporting de-husked coconuts.
Conveyor 2 Purpose	Transporting husk.
Integration	Designed to seamlessly integrate with the de-husking discharge chute and subsequent storage/processing systems.
Belt Speed (Calculated)	*Specify exact belt speed (e.g., 0.5 m/s) based on 1:25 ratio and motor speed.* (Placeholder - requires motor RPM for calculation)
Paint Finish Color	*Specify RAL color standard or finish.* (e.g., RAL 7035 Light Grey)
Warranty	*12 Months Warranty*

D1.5 De-husked coconut storage container with automatic feeding of nuts by way of chute to hoist fittings

Section	Specification/Feature	Details
1. Structure & Material	Fabrication Material	Carbon steel / GI (Galvanized Iron) (as per final approval)
	Surface Finish	Sandblasted, high-quality powder-coated (60-80 micron min.)
	Suitability	Weatherproof, continuous outdoor industrial operation
2. Dimensions	Length	12.2 meters (approx. 40 feet)
	Width	10.5 meters (approx. 34.4 feet)
	Height (Container Top)	12 feet from ground level
	Base Elevation	1 – 1.5 feet recommended (for cleaning/drainage)
3. Storage Design	Flow Mechanism	Gravity-based flow towards discharge points
	Capacity	1 Lakh nuts

	Bottom Design	Sloped bottom (minimum 45-degree angle or optimized)
	Internal Features	Anti-clogging layout, smooth welds
4. Automatic Feeding System via Hoist	Input Interface	Dedicated chute from upstream conveyor outlet
	Travel Path	Across container width/length for uniform distribution
	Lifting Control	Automatic height matching, soft-landing mechanisms
	Safety/Positioning	Limit switches for travel/lift end, proximity sensors
5. Hoist Motor & Power Requirement	Motor Rating	2 – 3 HP (≈ 1.49 – 2.24 kW), heavy-duty, high-torque
	Duty Cycle	Suitable for continuous batch feeding (e.g., S3 or S4)
	Power Supply	3-phase, 415 V, 50 Hz
	Protection	Thermal overload relay and MCCB/MCB
6. Top Cover Design	Cover Material	Flexible reinforced PVC sheet (minimum 600 GSM)
	Operation	Openable and motor-operated (with gear reduction)
	Features	UV-stabilized, waterproof, FR rated, tear-resistant
	Sealing	Sealed edges with integrated gutter system
7. Discharge Gates	Quantity	Multiple (e.g., 2 to 4) at the bottom
	Type/Control	Slide or flap type with precision adjustable flow control (Manual/Pneumatic options)
	Compatibility	Custom dimensions for seamless interface with downstream conveyors
8. Access Doors	Size	3 ft × 5.5 ft

	Features	Heavy-duty hinges, lockable latches, Gasketed (EPDM/Neoprene)
	Purpose	Internal cleaning, maintenance, emergency removal
9. Lighting	Type/Quantity	2 × 200 W LED lights (Minimum IP65 rated)
	Control	Isolated control circuit with external switch panel
10. Safety Systems	Hoist Safety	Dedicated Hoist emergency stop (E-stop)
	Cover Safety	Full-open/full-close limit switches, mechanical stops
	Structural Safety	Anti-fall/anti-drop brackets, safety railing (1.1m min.)
11. Durability & Maintenance	Construction Focus	Long-service, minimal maintenance, replaceable wear parts
	Access	Strategic points for periodic cleaning/lubrication
	Drainage	Threaded drain plugs at lowest base points
	Fasteners	Zinc-coated or Stainless Steel (SS 304)
12. Integration Capability	Input Interface	Receives from de-husking line via standardized chute/hoist
	Output Interface	Feeding outlet dimensions compatible with next-stage processing
	Automation Readiness	Provision for level sensors (ultrasonic/radar) and PLC interfacing (Modbus, Ethernet/IP)

D1.6 System for handling husk wastage

Husk Handling Hoist System (Husk Dump to Boiler & Truck Loading)

Section	Description	Key Specifications
System Overview	Handling and transporting coconut husk wastage.	Purpose: Husk Dump to Boiler & Truck Loading.

	Overhead monorail hoist system.	
Functions	Move husk from dump to boiler feed. Lift husk for truck loading.	Type: Overhead Monorail Hoist System.
Structure & Material	Carbon steel / MS structure, sandblasted and powder-coated. Designed for outdoor, dusty, high-humidity environments.	Material: Carbon Steel / MS. Finish: Sandblasted & Powder-Coated. Environment: Outdoor/Dusty/Humid.
System Length & Layout	Total hoist travel of 75 meters. Monorail route: Husk Dump to Boiler Area to Truck Loading Zone.	Total Length: 75 meters. Route: Dump to Boiler to Truck Loading.
Load Capacity	Safe Working Load (SWL) of 2 tons (2000 kg). Designed with a minimum 25% safety margin.	SWL: 2 Tons (2000 kg). Safety Margin: Minimum 25%.
Electric Hoist	Electric wire rope or chain hoist, 2-ton capacity. Equipped with safety features.	Type: Electric Wire Rope/Chain. Lifting Speed: 3–6 m/min. Features: Brake, Overload Limiter, Limit Switches.
Trolley Travel Mechanism	Motorized trolley travel along the 75 m monorail. Anti-derailment design, with bumpers/end-stops.	Travel Speed: 10–20 m/min. Trolley Type: Motorized.
Motors & Power	Separate motors for lifting and travelling. Total installed power approx 4.5kW.	Lifting Motor: 5 HP 3.7 kW. Travel Motor: 1 HP 0.75kW. Total Power: approx 4.5 kW.
Control System	Pendant control station standard. Option for wireless remote control.	Controls: Up/Down/Left/Right/Stop/E-Stop. Standard: Pendant Control. Option: Wireless Remote.
Safety Features	Limit switches for hook and trolley travel, Emergency Stop, Overload Protection.	Includes: Limit Switches (Hook & Travel), E-Stop, Overload Protection.
Durability & Weather Protection	Outdoor-rated electrical enclosures (minimum IP55). Components selected for high dust environment.	Enclosures: Minimum IP55. Protection: Powder-Coated, Zinc-Plated Fasteners.

Maintenance & Accessibility	Designed for easy maintenance of rope/chain and brake. Lubrication points accessible.	Focus: Easy Rope/Chain/Brake Maintenance. Documentation: Manuals & Test Certificates supplied.
Integration & Interfaces	Compatibility with husk dump pit, boiler feeding system, and truck loading positions.	Interfaces: Dump Pit, Boiler Feed, Truck Loading. Future Ready: Prepared for PLC/Automation.

D1.7 Coconut Storage Bins for Deshelling Stations

Specification	Details
Item	Coconut Storage Bins
Application	Feeding Deshelling Stations
Total Quantity	16 (Sixteen) Units
Requirement	All units must be identical in all specifications.

2. Structure & Material Specifications

Feature	Specification Details
Primary Material	Mild Steel (MS) – Galvanized (for rust/corrosion resistance)
Construction	Heavy-duty industrial standard
Usage Suitability	Continuous operation, suitable for indoor/outdoor installation
Fabrication	All welds must be stress-relieved
Support Legs	Heavy-gauge galvanized steel sections
Surface Finish	Complete unit sandblasted and powder-coated (for long-term finish life)
Fasteners	Hot-dip galvanized / zinc-coated
Durability	Designed for low maintenance and easy wash-down cleaning

3. Dimensional & Capacity Specifications

Parameter	Value / Requirement
Length (Approx)	2.5 meters

Width (Approx)	2 meters
Height (Approx)	8 feet
Ground Clearance	3 feet above floor/ground level
Internal Slope	1-foot gravity slope towards the outlet
Minimum Capacity	2,000 coconuts per bin
Function	High-volume holding for uninterrupted supply

4. Installation & Site Requirements

Requirement	Details
Anchoring	Firmly anchored to concrete foundation using base plates and anchor bolts.
Movement	Designed to facilitate forklift / pallet truck movement during initial installation (if required).

5. Discharge and Flow Design

Feature	Specification Details
Mechanism	Bottom discharge chute at the slope end
Flow Principle	Ensures free gravity flow of nuts
Control	Adjustable slide/flap gate for controlled discharge rate
Compatibility	Compatible with existing belt conveyor or manual feed input systems

6. Worker Protection & Access

Feature	Specification Details
Canopy	Operator canopy installed over bin feed/loading zone.
Canopy Material	GI sheet or polycarbonate roofing (as approved).
Canopy Purpose	Provides shade and protection from sunlight/rain for workers.
Internal Access	Access panel for periodic cleaning inside the bin.
Cleaning	Drain point provided for wash-water or residue removal.

7. Safety & Structural Features

Safety	Details

Requirement	
Edge Protection	Protective edge covers on all sharp sections.
Top Access	Anti-slip surface on top access panel (if an access ladder is provided).
Structural Integrity	Load resisting structure with a minimum Factor of Safety meeting industrial standards.

D1.8 Shell Discharge Conveyor 38000 L X 500 (Belt W) X 312 mm Roller Dia

1. General Overview

Feature	Specification
Purpose	Transporting coconut shells (non-food grade) from the processing area to the collection/storage point.
Application	Continuous industrial operation in dusty and heavy-load environments.
Material Handled	Coconut Shells (Non-Food Grade)
Throughput (Rated)	10,000 coconuts per hour equivalent shell volume.
Capacity (Demonstrated)	1 ton per hour minimum at full load speed.
Load Handling	20. g per meter across full length.

2. Structure, Dimensions & Materials

Component	Specification	Details
Length	35 meters	Total conveyor length.
Belt Width	500 mm (≈ 1.6 ft)	Effective conveying width.
Frame Width	1 foot nominal	Nominal width of the conveyor frame.
Height from Ground	1 foot (300 mm) clearance	For easy cleaning and maintenance access.
Frame Material	Mild Steel (MS)	Heavy-duty fabrication for strength and long life.
Corrosion Protection	Sandblasted and Powder-Coated	Applied to all structural parts.
Support	Heavy-gauge MS	Ensures stable operation over the

	support stands	full length.
Side Guards	Full-length	Prevents shell spillover and drop-outs.

3. Belt & Roller Specifications

Component	Specification	Details
Belt Type	3-ply Poly Rubber	Heavy-duty, non-food grade.
Belt Profile	Troughed	Retains material and avoids loss at high loads.
Belt Resistance	Abrasion, tearing, continuous shell impact.	Durable for harsh environment.
Roller Diameter	312 mm	For smooth belt travel and reduced friction.
Bearings	Sealed	Resists dust and fiber contamination.
Return Rollers	Spaced appropriately	Prevents belt sagging and misalignment.
Belt Tensioning	Quick-access system	For easy tracking and maintenance.

4. Motor & Drive System

Component	Specification	Details
Motor Power	3 HP (≈ 2.24 kW)	Provides ample power for full load.
Electrical	3-phase, 415 V, 50 Hz	Standard industrial power requirement.
Drive System	Gearbox	For essential speed and torque control.
Power Consumption	Optimized for low running torque	Enhanced energy efficiency.
Motor Protection	MCCB/MCB, Thermal Overload Relay, Phase-Failure Protection	Comprehensive electrical safety.

5. Safety & Maintenance

Feature	Specification	Details

Emergency Stop	Provided at loading and discharge sections.	Immediate shutdown capability.
Safety Guards	Belt guards and rotating component guards.	Protection for operator safety.
Drive Safety	Anti-skid and anti-backlash protection in gearbox.	Prevents operational hazards.
Accessibility	1-foot floor clearance.	Simplifies under-conveyor cleaning.
Maintenance	Long-life bearings and optimized lubrication points.	Reduces maintenance downtime.
Stability	Levelling provision.	Maintains belt alignment on uneven floors.
Flow Management	Zero-clogging design.	Ensures continuous handling of dry shell.

D1.9 De-Shelling Machine with 2 Operator Cutter and Discharge Chute

1. General & Summary Specifications

Specification	Detail	Unit Quantity	Total Requirement (16 Units)
Machine Type	De-Shelling Machine with 2-Operator Cutter	1 Unit	16 Units
Processing Capacity	500 coconuts per hour	1 Unit	8,000 coconuts per hour (Total)
Power per Unit	2 HP (1.5 kW approx.)	1 Unit	32 HP (24 kW approx.) (Total Max)
Drive System	2 HP Helical Gear Motor, 3-Phase	1 Unit	16 Motors
Material (Main Body)	Stainless Steel (SS)	-	-
Operator Requirement	2 Operators per machine	1 Unit	32. perators (Total)

2. Structure & Material

Component	Material / Feature	Notes
Main Body	Stainless Steel (SS) fabrication	For hygiene and corrosion resistance.
Internal Structure	Fully powder-coated	For long-term corrosion resistance.
Frame	Heavy-duty industrial frame	Designed for vibration-free, continuous operation.
Fasteners	Corrosion-protected	-
Shafts	Nickel-plated	To resist moisture, rust, and abrasion.
Discharge Chute	SS	Smooth, clog-free flow.

3. Dimensions & Ergonomics

Dimension	Value	Notes
Length	4.5 feet	-
Width	3.5 feet	-
Working Height	Ergonomically suited	Suited for two operators.
Operator Comfort	Integrated foot rest	Provided for operator comfort and safe positioning.

4. Capacity & Operation

Feature	Specification	Notes
Processing Capacity	500 coconuts per hour (per unit)	Guaranteed minimum output.
Cutting Heads	Double cutting heads	Allows two operators to cut simultaneously.
Pre-Splitting	One coconut breaker attachment	Included for pre-splitting and easier de-shelling.

5. Power & Drive System

Parameter	Specification	Notes

Motor Type	2 HP Helical Gear Motor	3-phase.
Motor Base Speed	1440 RPM	-
Gear Ratio	1:40	-
Output Speed	36 RPM	Optimized for high-torque shell cutting.
Starter/ON-OFF	Rated to support motors up to 3 HP	Provides margin for safety.
Local Control	Individual switch panel	For local start/stop safety on each machine.

6. Cutting Mechanism

Feature	Specification	Requirement
Blade Material	D3 tool steel	Maximum wear resistance and impact strength.
Application	Heavy-duty continuous cutting	Suitable for hardened coconut shells.
Warranty	Minimum 1-year warranty on blades	Required from supplier.

7. Safety & Electrical Requirements Safety Features (Per Unit)

Feature	Requirement
Guarding	Blade and moving-part guards around all cutting heads.
Emergency Stop	Emergency stop button mounted within operator reach.
Interlock	Recommended to prevent cutting operation if guard is not closed.

Electrical Requirements (Per Unit)

Feature	Requirement
Operation Supply	3-phase, 220 V / 415 V (as per final vendor configuration).
Protection	MCB/MCCB + thermal overload relay protection.
Control Panel	Local start/stop/E-stop panel.

Overall Electrical Requirements (for 16 Units)

Parameter	Calculation	Total Requirement
Total Motor Power	16 units × 2 HP	32 HP
Total Electrical Load	16 units × 1.5 kW (approx. 2 HP conversion)	~24 kW (Nominal Running Load)
Installation	Electrical network must provide power tap-offs for 16 machines from main source. All machines must be identical in power rating and electrical requirements.	-

8. Durability & Maintenance

Component	Specification / Feature
Blades	D3 material allows long usage before sharpening.
Drive Components	Gearbox and bearings selected for continuous 24×7 duty cycles.
Service Access	All service components accessible for fast maintenance.
Structural Protection	Powder-coated inner frame offers long-term structural protection.

9. Quantity

Item	Requirement
Total Units	16 machines
Standardization	All units must be identical in construction, power rating, materials, safety, and performance.

Schedule E

Sl No	Machinery Details	Qty
01	Pairing System Setup with Conveyor	01
02	Coconut oil Extraction setup with provision for Testa & Virgin Oil	01

E1. PAIRING SYSTEM SETUP WITH CONVEYOR

No.	Item	Qty
E1.1	Pared Testa and Coconut Meat (white) Discharge Conveyor – 38000 L X 300 (Belt W) X 152 mm Roller Dia	2
E1.2	SS Paring Table (Custom Fabrication)	1
E1.3	Paring Tool Electric	32
E1.4	Chair for Dehusking, Deshelling, Paring units	80
E1.5	Parred Meat Collection Station and Trays	1

E1.1. Pared Testa and Coconut Meat (white) Discharge Conveyor – 38000 L X 300 (Belt W) X 152 mm Roller Dia

AND

E1.2. SS Paring Table (Custom Fabrication)

Structure & Material

Feature	Specification
Complete Structure	Fabricated entirely from Stainless Steel (SS) (frame, supports, working platforms, table surfaces).
Resistance	Waterproof and corrosion-resistant, suitable for wet processing.
Operation	Noise-dampening construction for low-sound operation.

Dimensions & Layout

Component	Dimension	Metric Equivalent (Approx.)
Overall Conveyor Length	36 meters	118 ft
Working/Belt Width	300 mm	~1 ft
Roller Diameter	152 mm	6 inches
Table Width (White Meat)	1.5 feet	457 mm
Expandable Extra Table Width (Workers)	1 foot extension	305 mm extension

Dual-Level System Functionality

Level	Purpose	Mechanism

Top Level	Coconut white meat sorting and transport.	Continuous conveyor belt and sorting table.
Bottom Level	Testa discharge conveyor for husk skin transport.	Dedicated conveyor for disposal.
Integrated Chutes	Allow workers to push testa downward from the top table to the lower conveyor.	Strategically placed openings.

Height & Ergonomics

Component	Height Above Ground	Ergonomic Note
White Meat Table Surface	3.5 feet	Operator friendly working height.
Lower Testa Conveyor	1 foot	Smooth flow and easy collection access.
Water Management	Inclined SS table sections	Slope to collect coconut water into a water collection bin below each section.

Load Capacity & Belt Performance

Component	Load Capacity (Design)	Belt Material & Grade
Testa Belt	20 kg per meter (Continuous); 1,000 kg/hour capacity	Food-grade waterproof polyurethane, anti-fungal, chemical-safe.
White Meat Belt	50 kg per meter (Continuous)	Food-grade waterproof polyurethane, anti-fungal, chemical-safe.

Motors & Drive System (Updated per 5 HP requirement)

Two independent conveyors with individual, high-power motors:

Conveyor	Load Specification	Required Power (Updated)	Final Motor Selection
Testa Conveyor (Lower Level)	20 kg/m (1 t/hr)	5 HP	5 HP motor (≈3.73 kW)
White Meat Conveyor / Table	50 kg/m (wet load)	5 HP	5 HP motor (≈3.73 kW)

Total Installed Load for this complete dual conveyor system:

5 HP + 5 HP10 HP approx 7.46 kW

Gear System and Electrical Specifications

Component	Specification	Function
Gearbox Type	Helical Gearbox	Provides high torque, high efficiency, and low-noise operation, suitable for continuous duty.
Motor Supply	3-phase, 415 V, 50 Hz	Standard industrial power supply.
Protection	Thermal Overload + MCCB/MCB	Essential protection for both motors against overheating and short circuits/overcurrent.
Drive System	Direct or Chain/Sprocket (High Torque)	Robust drive connection to handle the increased 5 HP load.

Lift Conveyor at Discharge End (for Testa)

Feature	Detail
Configuration	Testa belt transitions to an elevated lift conveyor at the end.
Purpose	For dumping the testa at the required collection level/height.
Design	Lift angle optimized to avoid slipping and material rollback.
Drive	Heavy-duty gearbox (part of the 5 HP testa drive) ensures stable lifting under full load.

Safety Features

Feature	Location / Detail
Start/Stop Control	Waterproof operator station at each working location.
Emergency Stop	E-Stop switches positioned at both conveyor levels along the length.
Guarding	Full guarding of rotating parts, motor area, and pinch points.
Operator	Anti-slip operator standing surface along the entire

Surface	working length.

Water & Hygiene Management

Aspect	Feature
Contact Surfaces	All table surfaces and material contact points are fully stainless steel food-grade finish.
Drainage	Sloped operator tables channel coconut water directly to drain bin below.
Cleaning	Conveyor underside and framework designed for high-pressure wash cleaning.

Durability & Maintenance

Component	Feature
Bearings	Fully sealed, water-resistant and dust-proof SS bearings.
Maintenance Access	Quick-access belt tensioning and tracking mechanism.
Belt Life	Long-life belts designed for wet continuous duty.

Energy Efficiency

Strategy	Detail
Torque Matching	Gearbox torque is matched precisely to the load to reduce initial current surge.
System Friction	Low-resistance rollers and low-noise transmission reduce running energy consumption.

Integration

Feature	Detail
Alignment	Discharge points align with the testa collection system and white meat processing line.
Automation	Ready for future interlocks/PLC automation if required.

Power Summary

Item	Power
White Meat Conveyor Motor	5 HP (≈3.73 kW)
Testa Discharge Conveyor Motor	5 HP (≈3.73 kW)
Total Installed Load	~10 HP (≈7.46 kW)

E1.3. Paring Tool Electric

Electric Coconut Testa Removal Tool / Coconut Paring Machine

Section No.	Specification Category	Details
0	Quantity Required (as per BOQ)	32 Numbers
1. Structure & Material		
1.1	Machine Body & Working Chamber	SUS304 Stainless Steel
1.2	Fasteners & Hardware	Stainless Steel (to prevent corrosion)
1.3	Housing	Fully water-resistant housing for hygienic processing
2. Dimensions & Ergonomics		
2.1	Size (L × W × H)	330 mm × 410 mm × 570 mm
2.2	Mounting	Stand included for secure mounting on SS working table at ergonomic height.
2.3	Footprint	Compact, suitable for multi-station industrial layout.
3. Performance & Capacity		
3.1	Rated Throughput	200 coconuts per hour
3.2	Testa Removal Method	Rotating abrasive wheel/blade assembly for clean white meat delivery.
4. Motor & Power		
4.1	Total Power	0.5 kW (≈ 0.67 HP) electric motor
4.2	Power Supply	Single-phase/Three-phase as per manufacturer (to be finalized at purchase)
4.3	Protection	Integrated overheating protection with

		thermal cut-off.
4.4	Operation	Smooth start to prevent sudden load.
5. Operating Mechanism		
5.1	Paring Action	High-speed abrasive wheel / paring blade removes testa without damaging flesh.
5.2	Adjustability	Adjustable paring force for different coconut sizes.
5.3	Noise/Vibration	Low-noise and low-vibration drive system.
6. Blade Assembly & Spares		
6.1	Blade Material	Tool steel paring blades / abrasive assembly for long cycles.
6.2	Spare Blades	10 sets included per machine
6.3	Changeover	Quick changeover system for minimal downtime.
7. Controls & Safety		
7.1	Controls	Soft-touch waterproof push button for start/stop.
7.2	Emergency Stop	Emergency stop button provided in operator reach.
7.3	Guards	Full safety guards over abrasive / cutting elements.
7.4	Restart Protection	Anti-restart protection after power interruption.
8. Water-Resistant & Cleanability		
8.1	Cleanability	Wash-down safe exterior with IP-rated control panel/switches.
8.2	Design	All edges smooth and rounded to prevent fiber accumulation.
8.3	Drainage	Drainage-friendly internal design.
9. Electrical Connections		
9.1	Wiring	3-core copper cables, heat-resistant & moisture-resistant.
9.2	Enclosure	IP65 stainless steel electrical enclosure.
9.3	Protection	MCB protection + motor thermal overload

	(Factory-fitted)	protection.
9.4	Documentation	Recommended cable sizing and circuit load to be included.
10. Warranty & Support		
10.1	Warranty	Minimum 2-year warranty on motor, electricals, and body.
10.2	Spares Guarantee	Spare blade stock availability guaranteed by supplier.
10.3	Documentation	Service and maintenance manual supplied.
11. Durability & Continuous Duty		
11.1	Duty Cycle	Suitable for 8–12 hour continuous operation cycles.
11.2	Bearings	Sealed for water and dust resistance.
11.3	Components	Abrasion-resistant components for long working lifespan.

12. Optional (Vendor to Offer)

Higher-capacity models for scalability.

Double-station and multi-station paring configurations.

Foot-switch start/stop for continuous workflow preference.

E1.4. Chair for Dehusking, Deshelling, Paring units

Specification Category	Key Features
Material & Construction	SS 304 Grade; Polished/Matte Finish; Fully Welded; Corrosion Resistant (Wet/High-Humidity Areas).
Strength & Load	≥ 120 kg (265 lbs) Minimum Load Capacity; Heavy-Duty Design; Cross-Braced Legs; Impact-Resistant.
Ergonomics & Comfort	Lumbar Backrest Support; Rounded Seat Edges; Optional Ventilation Slots on Backrest.
Safety & Suitability	All Edges Rounded/Deburred; Anti-Slip Rubber/Silicone Leg Caps; Fire-Safe; Chemical-Resistant.
Durability & Maintenance	Resistant to Stains/Oils/Chemicals; Suitable for Daily Washing/Sanitation; No Upholstery/Fabric/Wood (Low

	Maintenance).

Detailed Specifications

1. Material & Construction
   - Stainless Steel Grade: SS 304 for complete structure (seat, legs, and backrest).
   - Finish: Polished / matte finish for easy cleaning and hygienic work environments.
   - Construction Type: Fully welded structure for maximum rigidity and long service life.
   - Corrosion Resistance: Suitable for wet areas and high-humidity environments.
2. Dimensions
   - Seat Width: 15 inches (standard single-seater).
   - Seat Depth: 20 inches.
   - Seating Height: Designed per ergonomic standard for industrial workstations.
   - Backrest: Angle optimized for operator comfort during long hours of operation.
3. Strength & Load Capacity
   - Load Capacity: Heavy-duty design capable of supporting 120+ kg (≥ 265 lbs) minimum load capacity.
   - Structure: Cross-braced leg structure to prevent flexing and wobbling.
   - Resistance: Impact-resistant design suitable for high-usage industrial environments.
4. Ergonomics & Comfort
   - Back Support: Lumbar backrest support follows natural curvature of the spine to reduce fatigue.
   - Safety: Seat edges rounded for safety and comfort.
   - Heat Reduction: Optional ventilation slots on backrest to reduce heat buildup for long sitting duration.
5. Safety & Workplace Suitability
   - Edges: All corners and edges rounded and deburred to avoid cuts or injury.
   - Stability: Anti-slip rubber/silicone leg caps to prevent sliding on wet or tiled floors.
   - Environment: Fire-safe and chemical-resistant construction.

6. Durability & Maintenance

- Surface: Stainless steel surface resistant to stains, oils, and cleaning chemicals.
- Cleaning: Suitable for daily washing and sanitation using industrial cleaners.
- Design: No upholstery, fabric, or wood components — low maintenance and long life.

7. Floor & Stability Features

- Stance: Wide stance for stability during sitting and leaning.
- Fixing: Optional mounting holes for floor fixing if used at fixed workstations.
- Noise: Noise-reduction pads recommended for quiet movement on tiles.

8. Application

- Designed for industrial processing lines, production areas, inspection tables, operator stations, and control rooms.
- Suitable for both indoor and outdoor factory use.

9. Warranty & Quality Assurance

- Warranty: Minimum 1-year warranty against manufacturing defects.
- Welding: Welding quality to meet industrial standards (no cracks, pits, or weak joints).
- Testing: Every batch to undergo structural stability and load test before dispatch.

10. Quantity & Procurement

Required Number	80 Chairs
Packaging	Stackable design for efficient transport and storage (if applicable and structurally feasible).
Certification	Material test certificate for SS 304 grade to be supplied.

E1.5. Parred Meat Collection Station and Trays

1. System Overview

Feature	Description

Purpose	Collection, temporary holding, and movement of pared (white) coconut meat from processing line to the next stage.
Design Focus	Supports hygienic handling, fast loading/unloading, and easy cleaning inside the processing area.

2. Construction & Material

Component/Aspect	Specification
Material	Complete system made of Stainless Steel (SS 304) including trolley frame, trays, handles, wheels, and fasteners.
Suitability	Rust-proof and suitable for wet food-processing environments.
Finish	Surfaces polished to prevent microbial buildup and enable wash-down cleaning.

3. Trays

Specification	Value
Tray Size (L × W × H)	1200 mm × 920 mm × 30 mm (height).
Tray Legs (Height)	140 mm (elevated for airflow, drainage, and easy picking).
Design	Stackable design for compact space usage.
Stacking Capacity	Up to 10 trays per trolley.
Safety Features	Smooth, rounded internal edges; Food-contact compliant — no sharp corners or weld protrusions.

4. Moving Trolley

Specification	Value/Description
Frame Material	Heavy-duty SS 304 welded frame designed for industrial load handling.
Wheels	Fitted with four food-grade caster wheels (two fixed + two swivel with brakes) for safe movement.

Handle	Ergonomic push-pull handle for operator comfort.
Load Capacity	Minimum 300 kg with 10 filled trays.

5. Hygiene & Cleaning Design

Feature	Description
Washability	All SS surfaces washable with high-pressure water and cleaning chemicals.
Airflow/Drainage	Ventilated tray design promotes airflow and drainage where required.
Wheels	Wheels sealed for water resistance and easy cleaning.

6. Safety & Durability

Feature	Description
Tray Security	Anti-tilt tray holding system to prevent tray fall during movement.
Frame	Impact-resistant frame for long-term industrial duty.
Welds	High-strength welds tested for durability and load safety.

7. Ergonomics

Feature	Benefit
Trolley Height	Optimized for standing work positions during tray loading/unloading.
Tray Removal	Trays removable at minimal lift height to reduce operator strain.
Operation	Quiet wheel operation for improved factory environment.

8. Quantity

Item	Required Quantity	Configuration Note

Trolleys	3 units	All units must be identical in design, material, and capacity.
Trays	30 units total	10. rays per trolley configuration.

9. Warranty & Documentation

Requirement	Details
Warranty	Minimum 1-year warranty against material and manufacturing defects.
Documentation	Supplier to provide maintenance guidelines, cleaning instructions and spare wheel availability.

E2. COCONUT OIL EXTRACTION SETUP WITH PROVISION FOR TESTA & VIRGIN OIL

No.	Item	Qty
E2.1	Food grade pump	5
E2.2	Micro filter for virgin coconut oil	1
E2.3	Oil collection Storage Tanks – 2,000 Liters	3
E2.4	Oil storage tank – 5,000 Liters	2
E2.5	Copra Cutting Machine	1
E2.6	Screw Conveyor	1
E2.7	Oil Press Machine with customized cycle pressing	1
E2.8	Oil storage tank (crude oil) – 1000 Liters	1
E2.9	18" filter press for oil extraction with elevated stand to filter oils	1
E2.10	Oil storage tank (filtered oil) – 1000 Liters	1
E2.11	Independent dehydration – 500 Liters / 2H	1
E2.12	Final oil storage tank – 3000 Liters	1
E2.13	4 Head Automatic Oil Filling & Bottle	1
E2.14	Oil Big Mouth Packing Line	1
E2.15	Accessories: Small SS304 oil tank, 3 oil pumps, SS304 pipeline, Carbon steel transfer oil tank	1

E2.1. Food grade pump
AND
E2.2. Micro filter for virgin coconut oil
1. Pump Specifications (Updated with Provided Data)

Total Pumps Required: 5 Nos.

Parameter	Specification	Notes
Max Flow Rate	300 LPM (300 Litres per Minute)	Required capacity for production batch flow
Head	Up to 150 m	Required pressure head for vertical and horizontal distance
Body Material	Stainless Steel SS316 (food grade)	Essential for edible oil contact and corrosion resistance
Delivery Size	¼ inch (0.25”) to 2.5 inch ports	Must be flexible based on line routing and flow
Temperature Handling	Up to 80°C	Must handle typical process temperature
Power	1 HP per pump	Standard motor rating (to be confirmed by vendor based on duty point)
Phase	Single or Three Phase	To match plant supply (Specify which is available)
Model Reference	SFSS (or equivalent high-sanitary spec)	Reference model for required sanitary design
Function	Transfer of food-grade liquids	Coconut oil, milk, honey, cream, edible syrups, etc.
Efficiency	100% rated hydraulic efficiency	Vendor must declare tested value; critical for energy savings

Additional Requirements for Pumps

- Hygienic mechanical seal suitable for edible oil to prevent leakage and contamination.
- CIP-friendly design for efficient Clean-In-Place / in-line wash/flushing.

- Vibration-free mounting base with anti-skid pads for stable, quiet operation.
- Low shear pumping mechanism to avoid product (oil) damage and emulsion formation.

2. Stainless Steel Pipeline Network (included in same package)

Component	Specification	Details
Material	SS304 food-grade seamless pipes	Ensures hygiene and durability
Fittings	Tri-clamp or SMS unions (dairy type)	Quick disassembly for cleaning/maintenance
Valves	SS304 Ball/Butterfly valves	For effective flow control and isolation
Installation Type	Hygienic orbital/argon welding	Essential for smooth, crevice-free internal surface
Pipeline Layout	Extraction → Filtration → Buffer → Downstream processing	Complete line connectivity
Accessories	Bends, reducers, tees, couplers, gaskets, supports	All necessary components included
Drain & Sample Points	Included at strategic locations	For product quality monitoring and complete draining

3. Electrical & Control

The system must include basic and necessary electrical protection and control for all three pumps.

Feature	Requirement
Start/Stop Control	Individual control for each pump
Protection	MCB + Overload Relay + Contactor protections
Safety	Emergency stop button (mushroom type)
Cabling	Industrial armored cable & proper earthing
Indication	Panel-mounted indication for running/trip status

4. Commissioning & Testing

Vendor shall perform and document the following tests:

1. Pump alignment and flow testing to confirm specified flow rates.
2. Pressure & leakage testing of all pipelines (Hydrostatic/Pneumatic).
3. Operational heat-load test at 80°C (or max process temperature) to ensure reliability.
4. Handover after successful continuous run test of minimum 4 hours.

5. Hygiene & Compliance

- All edible-contact components must be in SS304/SS316.
- No carbon steel allowed in product path.
- Smooth internal finish (e.g., minimum Ra value) to prevent microbial accumulation.
- Cleaning access points at required nodes for maintenance.

6. Warranty & Documentation

- 1-year minimum warranty on pumps, motors, seals, control panel, and pipeline welding/installation.
- Vendor to submit the following documentation:
  - P&ID (Piping and Instrumentation Diagram) of the installed network.
  - Motor & pump manuals, including spare parts list.
  - Electrical drawings of the control panel.
  - Maintenance and operational procedures.

E2.3. Oil collection Storage Tanks – 2,000 Liters

Coconut Oil Collection & Storage Tank Specification

Quantity Required: 3 Units

1. Core Function & Application

Feature	Description
Quantity	3
Primary Function	Collection and temporary storage of edible coconut oil after extraction and filtration.
Oil Handling	Suitable for warm oil handling and prevention of

	solidification via integrated heating & temperature control.
Environment	Hygienic build essential for food-grade edible oil processing facilities.

2. Capacity & Dimensions

Parameter	Specification	Note
Effective Working Capacity	2000 Litres	Required operational volume.
Total Tank Volume	> 2000 Litres	Must include adequate headspace to prevent overflow during filling/agitation.

3. Construction & Material (Critical Components)

Component	Material	Specification / Notes
Product Contact Surfaces	Must conform to food-grade sanitary requirements.	
Shell	SUS316L (food grade stainless steel)	3 mm thick, hygienic seamless build.
Bottom Dome / Curve	SUS316L	Arc transition design to avoid residue and support complete drainage (Zero Dead Storage).
Lid	SUS304	Includes 300 mm manhole, feed port, and universal spray ball (for CIP).
Bracket / Legs	SUS304	4 Universal wheel legs (lockable castors) for mobility.
Discharge Valve	SUS316	Bottom discharge via butterfly valve.

Note: SUS316L is specified for the shell and bottom for enhanced corrosion resistance, which is ideal for heated edible oil.

4. Heating & Temperature Control

Feature	Specification	Purpose

Heating Method	Integrated heating tube/element.	Prevents coconut oil solidification (maintains fluidity).
Rated Heating Power	1 kW	Specified power consumption.
Control	Digital temperature controller with setpoint adjustment.	Allows precise control over oil temperature.
Safety	Over-temperature safety cut-off.	Essential safety feature.
Duty	Suitable for continuous duty operation.	Required for continuous processing environments.

5. Oil Pump, Motor & Pipeline

Component	Requirement	Details
Oil Transfer Pump	Built-in pump required.	For discharge or line circulation/transfer.
Motor	Industrial electric motor.	3-phase recommended; must include overload protection.
Internal Pipeline/Fittings	SS304 / SS316	Sanitary grade materials.
Flow	Provision for filling, discharge, and transfer.	Must be compatible with overall process layout.
Electrical Control	On-tank Start/Stop control for the pump.	Operator convenience and safety.

6. Hygiene & GMP Compliance

Requirement	Specification	Compliance Standard
Internal Finish	Smooth internal finish (≤ 0.6 µm Ra).	Required for edible oil, minimizes bacterial growth/adhesion.
Cleaning	Universal spray ball for CIP (Clean-In-Place) capability.	Ensures automated internal cleaning.
Welds	All welds must be argon-welded & polished.	Sanitary requirement to eliminate crevices.
Access	Manhole & ports sized for safe inspection and operator	GMP (Good Manufacturing Practice) compliance.

	access.	
Overall	Fully compliant with GMP hygiene standards.	Mandatory for food contact equipment.

7. Safety & Operational Features

Category	Feature	Benefit / Purpose
Safety	Lockable wheels (castors).	Stable positioning during operation.
Safety	Pressure-relief and vent provision.	Prevents pressure build-up/vacuum formation.
Safety	Earthing point.	Electrical safety for motor & tank frame.
Safety	Emergency Stop.	Near operator access point for quick shutdown.
Operational	Sloped bottom design.	Enables zero dead storage and complete drainage.
Operational	Butterfly valve discharge.	Compatible with hose or permanent pipeline connection.
Maintenance	Easy access for inspection/cleaning.	Facilitates periodic maintenance.
Maintenance	Thermal insulation.	Recommended around the heating tube region for efficiency and safety.

8. Electrical Requirements

Component	Requirement	Note
Heater Power	1 kW	Connection for heating element.
Pump/Motor Power	As per vendor pump specification.	Must confirm final motor requirements.

9. Warranty & Documentation

Item	Minimum Requirement
Warranty	Minimum 1-year warranty on tank, heater, motor pump, valves, and accessories.
Documentation	Operating & maintenance manual, Electrical and P&ID drawings, Preventive maintenance schedule, Spare parts

	list.

E2.4. Oil storage tank – 5,000 Liters

Coconut Oil Storage Tank Specification

Quantity Required: 2 Units

Section	Detail	Specification
Quantity	Units	2
Function & Application	Primary Use	Heavy-duty sanitary tank for collection and storage of edible coconut oil after extraction and filtration.
	Heating	Equipped with heating and temperature control to prevent coconut oil solidification.
	Environment	Suitable for continuous industrial processing environments.
Capacity	Effective Working Capacity	5000 Litres
	Total Volume	Designed >5000 L (with headspace to prevent oil overflow during filling/agitation).

Section	Component	Material	Thickness / Notes
Construction & Material	Shell	SUS316L (food grade)	3 mm thickness
	Bottom	SUS316L	Arc transition (rounded curvature) for full drainage and to avoid residue.
	Lid	SUS304	Includes 300 mm manhole, feed port, & universal spray ball for

			CIP cleaning.
	Discharge	SUS316	Bottom butterfly valve for full drainage.
	Support	SUS304	4 Universal wheel legs — heavy-load, lockable castors.
	General Note	All surfaces exposed to oil must be food-grade stainless steel.	

Section	Detail	Specification
Heating & Temperature Control	System	Integrated heating tube to maintain oil fluidity.
	Power	1 kW electrical heating power consumption.
	Control	Digital temperature controller with setpoint adjustment.
	Safety	Over-temperature cut-off protection.
	Rating	Continuous-duty rated.
	Application Note	Heating selected to suit coconut oil behaviour (solidifies at low temperature).

Section	Component	Configuration	Notes
Oil Pump, Motor & Pipeline Integration	Pump	Heavy-duty oil transfer pump integrated with tank.	
	Motor	Industrial electric motor (3-phase recommended) with thermal protection.	

	Pipeline	Food-grade SS304 / SS316 pipeline routing.	
	Configuration	Configured for Filling, Discharge, Line-to-line transfer, and Circulation.	

Section	Detail	Specification
Hygiene & GMP Compliance	Internal Finish	Mirror smooth (≤ 0.6 µm Ra) — prevents oil retention & microbial growth.
	Cleaning	Universal spray ball ensures CIP cleaning compatibility.
	Access	300 mm manhole for operator access.
	Welding	Sanitary welds (argon TIG welding & polished).
	Standard	Fully compliant to GMP / food-processing sanitary standards.

Section	Detail	Specification
Safety & Protection Features	Stability	Lockable castor wheels to secure position.
	Pressure	Pressure vent near manhole / feed port.
	Electrical	Motor and tank earthing point.
	Thermal	Thermal safety cutoff for heater.
	Operator Safety	Smooth exterior body edges.

Section	Detail	Specification
Operational & Maintenance Features	Drainage	Sloped / dished bottom ensures zero residual hold-up.

	Discharge	Bottom butterfly discharge compatible with flexible hose or SS pipeline.
	Access	Easy visual inspection & washdown access.
	Spares	Spare gaskets to be supplied by vendor.

Section	Component	Specification
Electrical Requirements	Heater	1 kW electrical heating tube (continuous duty).
	Temperature controller	Digital.
	Pump motor	3-phase (rating as per vendor design).
	Controls	Start/Stop switch on tank + indicator lamps.
	Safety	Emergency stop and MCB protection.

Section	Detail	Requirement
Warranty & Documentation	Warranty	Minimum 1-year warranty on tank, heater, pump, valves and accessories.
	Documentation	Operating manual, P&ID of the installed system, Preventive maintenance schedule, Catalog & spare-parts list.

E2.5. Copra Cutting Machine

1. Function & Application

Parameter	Description
Primary Function	Primary size reduction of dry copra before feeding into expellers/crushing/oil extraction machinery.
Output Quality	Produces uniform copra pieces to improve crushing efficiency and reduce load on downstream equipment.

Operation Type	Suitable for continuous, heavy-duty industrial operation.

2. Capacity & Performance

Parameter	Specification
Rated cutting capacity	250 kg per hour
Material handled	Dry copra / dried coconut kernels
Output	Uniform chopped copra pieces for oil extraction
Operation	Fully automatic continuous cutting

3. Motor & Power

Parameter	Specification
Motor power	5 HP
Phase	3-Phase
Drive	Industrial heavy-duty geared drive
Motor protection	Thermal overload protection & MCB protection

4. Machine Construction & Material Specifications

Component	Specification / Material
Frame Structure	Heavy-duty Mild Steel (MS) frame structure
Outer Cover & Structure	Powder-coated for durability and corrosion resistance
Shaft Material	Stainless Steel (SS)
Cutting Blades	Hardened Stainless Steel (SS) suitable for dry copra
Cutter Mechanism	Multi-blade rotating system for fast cutting
Design	Foundation-free design (no civil anchoring required)
Feed Hopper	Reinforced and guarded to avoid operator injury
Discharge Chute	Directs chopped copra into collection bin/conveyor

5. Safety Features

Feature	Description
E-Stop	Emergency stop switch on operator side
Guards	Protective guards around rotating sections
Overload Trip	Overload trip to prevent motor damage from jammed material
Stability	Anti-vibration rubber mounts for safe and stable operation

6. Operational Features

- Continuous automatic feeding and discharge
- Vibration-free and low noise operation
- Low maintenance cutter assembly
- Easy blade removal for sharpening/replacement
- Suitable for integration with conveyor or manual loading

7. Cleaning & Maintenance

- Easy-access panels for cleaning and maintenance
- Smooth discharge flow helps avoid material accumulation
- Lubrication points provided on moving mechanisms

8. Electrical & Control

Feature	Specification
Control Panel	Electric control panel included
Controls	Start/Stop push buttons
Protection	Overload relay protection & MCB for electrical safety
Wiring	3-phase industrial wiring with earthing provision

9. Warranty & Documentation

Parameter	Specification / Requirement
Warranty Period	Minimum 1-year warranty
Coverage	Covers motor, gearbox, blades & electrical panel
Documentation	Vendor must provide: Operation manual, Spare blade list, Recommended preventive maintenance schedule

E2.6. Screw Conveyor

1. General Information & Quantity

Attribute	Specification
Machine Type	Industrial Screw Conveyor
Application	Hygienic transfer of Coconut Meat/Product
Duty Cycle	24x7 Industrial Continuous Duty
Quantity Required	1 Units (Identical in all specifications)

2. Structure & Material

- The entire construction shall be of food-grade stainless steel, suitable for wet processing environments.

Component	Material Specification	Key Feature
Construction	Complete SS 304 Stainless Steel	Suitable for wet operating environments and wash-down cleaning.
Surfaces	Polished inner and outer surfaces	Hygienic food-grade transfer, prevents material build-up.
Components	Trough, Screw, Hopper, Legs, Guards, Fasteners	All parts exposed to the product or environment shall be SS 304.

3. Dimensions & Capacity (Per Unit)

- The design ensures high-volume, uniform material transfer without clogging.

Dimension	Specification
Total Length	3 meters
Screw Diameter	140 mm
Working Height	5 feet (Adjustable)
Infeed Hopper Size	600 mm × 600 mm
Conveyor	SS 304 shaft and flights, precision-machined. Trough with

Mechanism	tight sealing to prevent leakage.
Performance	Designed for continuous high-volume material transfer with zero clogging.

4. Drive System & Electrical Load

The drive system is sized for continuous, high-torque industrial duty.

Attribute	Specification (Per Unit)
Motor Power	2.2 kW (Approximately 3 HP)
Voltage	415 V, 3-phase, 50 Hz
Gearbox Ratio	1:17 (Ensures high torque and smooth conveying)
Duty Rating	Continuous Industrial Duty Cycle
Control Panel	IP55 SS Control/Junction Box. Start/Stop panel mounted on the machine.
Motor Protection	MCB / MCCB + Thermal Overload Relay + Phase-Failure Protection

Total Electrical Load for 1 Units

Attribute	Calculation	Total Load
Motor Power (Total)	1 units × 2.2 kW/unit	2.2 kW

5. Safety & Hygiene

- Prioritizing operator safety and ease of sanitation is critical for food processing.

Category	Features
Safety Systems	Screw fully enclosed. External SS side guards around drive/rotating parts. Emergency stop switch near operating zone. Anti-slip feet.
Hygiene	Surfaces smoothened for rapid cleaning. Screw and trough designed for quick access for wash-down. Sealed bearings to prevent ingress.
Durability	Designed for 24x7 industrial duty with minimal maintenance. Wear elements sized for long-term performance.

6. Additional Information

Requirement	Detail
Noise Control	Low-noise drive system and precision alignment to reduce vibration, ensuring a comfortable working environment.
Infeed Hopper Design	600 × 600 mm, funnel-style profile to prevent overflow and improve operator safety and material flow.
Delivery	All 3 units must be identical in construction, material, and performance.

E2.7. Oil Press Machine with customized cycle pressing

1. Function & Application

Feature	Description
Primary Function	Continuous mechanical pressing of copra to extract crude coconut oil.
Automation	Customized automatic cycle pressing system for continuous operation.
Efficiency Goal	Ensures maximum oil recovery, minimizing residual oil content in the cake.
Key Mechanism	Equipped with dual elevator feeding loops to automatically recirculate partially pressed material for multi-cycle extraction.

2. Capacity & Performance

Parameter	Specification
Rated Throughput	350 – 450 kg/hour
24-Hour Capacity	8 – 10 tons per day
Operating Mode	Continuous & automatic multi-cycle pressing
Output Products	Crude coconut oil + De-oiled cake (low residual oil)

3. Power & Motor

Parameter	Specification
Power Rating (Motor)	18.5 kW

Motor Type	6-Pole industrial motor
Voltage	380 V (or 415 V, 50 Hz, 3-Phase) (Depending on plant supply)
Motor Protection	Thermal overload protection + Auto shut-down on abnormal load

4. Machine Construction & Design

Component/Feature	Specification
Pressing Chamber	Industrial-grade alloy steel for high durability and compression.
Pressing Elements	Hardened screw shaft and barrel for long service life.
Oil Drainage	Efficient oil escape holes and filtration plate design.
Viscosity Management	Heating control inside press barrel (if required by vendor design).
Stability	Anti-vibration base for stable continuous operation.

5. Dual Elevator System

Feature	Specification
Units Included	2 units (different sizes)
Function	Automatically transfers semi-pressed oil cake back to the inlet carriage.
Benefit	Maximizes oil recovery through automatic recirculation pressing.
Integration	Fully synchronized with the machine's press timing.

6. Dimensions & Weight

Parameter	Specification
Machine Size (L × W × H)	2010 × 800 × 1380 mm
Weight (Approx.)	1035 kg

7. Control & Automation

Feature	Description

Control Interface	Central control panel with all press functions.
Key Functions	Start/Stop, Emergency shutdown, Automatic cycle run mode.
Monitoring	Motor ampere display for load monitoring.
Optional Monitoring	Press temperature & pressure indication (if part of vendor design).
Safety	Safety interlock for overload and reverse torque.

8. Output & Safety Features

Category	Features/Handling
Crude Oil Output	Routed to a collection tank via the oil discharge port.
De-Oiled Cake	Discharged automatically into a cake bin or conveyor.
Safety Features	Emergency stop button, Overload and short-circuit protection, Mechanical guards, Interlocked maintenance access doors, Anti-slip operator work zone.

9. Vendor-Scope Responsibilities (Must be Included)

Scope Area	Vendor Responsibility
Civil/Foundation	Foundation design, material, concrete base, fixing, anchoring, vibration-free alignment, floor finishing, and safety barricading.
Electrical Works	Electrical panel, control cabling, power cabling, MCB + Overload relay + Contactors, earthing for motor and panel, and commissioning of the electrical system.
Final Commissioning	Oil-bearing load trial, production test run and performance validation, and operator training.

10. Warranty & Documentation

Item	Specification
Warranty	Minimum 1-year warranty on the full machine (motor, press barrel, screw shaft, elevators, control panel).

Required Documentation	Operation & maintenance manual, Preventive maintenance schedule, Recommended spare-parts list, As-built drawings and wiring diagrams.

E2.8. Oil storage tank (crude oil) – 1000 Liters

Section	Description	Details
1. Function & Application	Purpose	Collection and storage of freshly pressed crude coconut oil before filtration and refining.
	Suitability	Warm crude oil holding and gravity settlement of fine suspended solids.
	Standard	Hygienic construction for edible oil processing plants.
2. Capacity	Working Capacity	1000 Litres
	Total Volume	>1000 L to allow safe headspace.

3. Construction & Materials

Component	Material	Specification
Shell / Cylinder	SUS316L	3 mm thickness, food-grade
Bottom	SUS316L	Arc / dish transition for zero residual retention
Lid	SUS304	Includes 300 mm manhole, feed port, universal spray ball
Discharge Valve	SUS316	Bottom butterfly valve
Support Legs	SUS304	4 lockable universal wheel legs for mobility
Contact Areas	Food-grade stainless steel	All product contact areas.

4. Operational Features

Feature	Requirement	Benefit / Detail
Drainage	Sloped bottom with butterfly valve	Full drainage and reduced residue.
Cleaning	CIP-compatible spray ball	Internal washing without opening the tank.
Surface Finish	Rounded internal surface finish (≤0.6 µm Ra)	Prevents microbial growth and oil retention.
Access	Manhole and feed ports	Positioned for safe filling and inspection.
Seams	Leak-proof welded seams	Argon TIG welded and polished.

5. Hygiene & Standards

Standard	Requirement	Details
Compliance	Fully compliant	GMP and food-processing hygiene standards.
Welds	Smooth inner and outer welds	For easy cleaning.
Seals / Gaskets	Must be food-grade	EPDM/PTFE.

6. Optional Integration Provisions

(Vendor must pre-fit connections for future compatibility)

Provision	Type	Note
Pipeline Ports	Tri-clamp	Inlet / outlet connections.
Sampling Valve	Optional	Connection provision required.
Level Indicator	Sight glass / level indicator	Connection provision required.

7. Mobility & Handling

Feature	Requirement	Purpose
Legs / Wheels	Four heavy-duty stainless steel legs with lockable castor wheels	Internal tank movement and mobility.
Structure	Seismic and vibration-safe structure	Safety for oil processing plants.

8. Electrical

Requirement	Status	Note
Heating / Control	Not included or required	No temperature control in this model.
Connection	No electrical connection required	Except optional pump connection point if used with oil transfer pump.

9. Warranty & Documentation

Item	Requirement	Details
Warranty	Minimum 1-year warranty	On tank, valves, wheels and structural welds.
Documentation	Operating & maintenance manual	Supplied by vendor.
	P&ID schematic	Where tank is installed.
	Spare gasket list	Supplied by vendor.

E2.9. 18" filter press for oil extraction with elevated stand to filter oils

1. Function & Application

Feature	Description
Primary Function	Fine filtration of crude coconut oil after pressing, to remove suspended solids and impurities.
Output Quality	Produces clean, clear oil suitable for storage, refining, consumption, or further processing.
Design Feature	Mounted on an elevated stand to allow easy gravity discharge into the next process tank.

2. Filtration Performance Specifications

Parameter	Specification
Filter Area	4 m²
Filtration Grade	400 mesh (40–50 micrometers)
Output Capacity	190 – 250 kg/hour
Filter Type	Plate & frame filter press
Working Media	Vegetable oils – crude coconut oil (primary application)

3. Plate Specifications

Parameter	Specification
Plate Size	355 × 355 mm (18" class)
Plate Quantity	18 plates
Material	Food-grade filtration plates designed for edible oil
Sealing	Leak-proof gasket sealing

4. Construction & Frame

- Frame: Heavy-duty mild steel structural frame, powder-coated / enamel coated for corrosion resistance.
- Stand: Elevated stand included to provide comfortable clearance for filtered-oil tank placement below.
- Tightening: Hydraulic/mechanical tightening arrangement (as per vendor design) for maintaining uniform filtration pressure.
- Oil Contact Surfaces: To be stainless steel or food-grade compatible.

5. Power & Drive

Parameter	Specification
Motor Power	1.5 kW
Poles	4-Pole motor
Voltage	380–415V, 3-Phase, 50 Hz

Protection	Thermal overload + MCB + earthing

6. Dimensions & Weight

Parameter	Specification
Machine Size (L×W×H)	1520 × 570 × 640 mm
Approx. Weight	550 kg
Note: Exact dimensions may vary slightly based on vendor design; the final drawing must be submitted before manufacturing.	

7. Inlet / Outlet & Discharge

- Inlet: Designed for crude oil feed from oil press / pump.
- Filtered Oil Outlet: Positioned for tank insertion below the stand without spillage.
- Cake Discharge: Cake discharge mechanism for easy removal of filter cake after the filtration cycle.

8. Safety & Protection

- Emergency stop button on operating side.
- Overload protection for motor and drive system.
- Splash guards for operator protection.
- Oil-drip tray to prevent floor contamination.
- Non-slip platform for operator near feed valves.

9. Installation Scope (Vendor Responsibility)

The Vendor must supply, install, and commission the following:

Item	Scope Detail
Stand & Foundation	Elevated stand with required foundation bolts. All civil work required for installing the stand and filtration skid (e.g., basement/foundation) must be included in the vendor scope.
Piping	Oil-compatible pipeline & connection fittings for inlet and discharge points.
Electrics	Complete electrical cabling and controls up to the machine terminal point.

Testing	Alignment, testing, and commissioning.

10. Commissioning & Training

The Vendor must:

1. Carry out a trial run with crude oil filtration.
2. Demonstrate rated filtration performance & output (190–250 kg/hour).
3. Provide comprehensive operator training for:
    - Plate loading & tightening
    - Filter cloth handling & washing
    - Cake removal
    - Maintenance & troubleshooting

11. Warranty & Documentation

Item	Requirement
Warranty	Minimum 1-year warranty on the full machine, including motor, filtration plates, control panel, and frame.
Documentation	Vendor must supply: Operation & maintenance manual, GA drawing and electrical diagram, Spare parts list & filter cloth recommendation, and Preventive maintenance schedule.

E2.10. Oil storage tank (filtered oil) – 1000 Liters

1. Function & Application

Feature	Description	Key Benefit
Primary Function	Storage and settling of filtered edible coconut oil.	Allows fine sediment to settle post-filtration.
Heating System	Inbuilt electrical heating tube.	Prevents oil solidification in low temperatures, ensuring smooth pumping and discharge.
Build Standard	Fully sanitary, food-grade construction.	Suitable for hygienic food processing environments.

2. Capacity

Parameter	Value
Working Capacity	1000 Litres
Total Volume	Slightly higher than working capacity
Purpose of Headspace	Maintain headspace during filling and agitation.

3. Construction & Materials

Component	Material	Specification	Key Design Feature
Main Shell	SUS316L	3 mm thickness, seamless food-grade	Ensures high corrosion resistance in contact with oil.
Bottom Dish	SUS316L	Arc / conical bottom transition	Crucial: Avoids oil retention and ensures complete drainage.
Tank Lid	SUS304	Includes 300 mm manhole, feed port & universal spray ball	Allows access for cleaning and connection to CIP/fill line.
Discharge Valve	SUS316	Bottom butterfly valve	Hygienic and provides quick, reliable shut-off.
Support Legs	SUS304	4 Universal wheels (lockable)	Provides mobility for easy placement and cleaning.
Seals	—	Food-grade EPDM/PTFE	Non-reactive and suitable for oil contact.
Wetted Parts Note	All components in contact with oil must be SUS316L.		High-grade material for product contact surfaces.

4. Inbuilt Heating System

Parameter	Specification	Purpose
Heating Mechanism	Integrated electrical heating tube.	Maintains oil temperature above solidification point.

Heating Power	1 kW	Sufficient power for gentle heating and maintenance.
Control	Digital temperature controller with adjustable setpoint.	Allows precise temperature management.
Safety	Thermal cutoff protection.	Prevents overheating and ensures safe operation.
Duty Cycle	Designed for continuous duty.	Reliable performance during extended storage.

5. Hygiene & Cleaning

Feature	Specification	Cleaning Method
Internal Surface Finish	Mirror-polished to ≤0.6 µm Ra	Minimizes bacterial harborage and aids cleaning.
CIP System	Universal spray ball compatible with CIP (Clean-In-Place).	Automated internal cleaning.
Access	Manhole access.	Manual cleaning and inspection.
Welds	Smooth internal welds.	Prevents contamination and reduces sedimentation points.

6. Tank Operation & Discharge

Feature	Specification	Benefit
Drainage	Sloped bottom.	Ensures 100% drainage through the bottom valve.
Discharge Flow	Gravitation-friendly discharge.	Reduces pump load for transfer.
Inlet	Top feed port.	Oil inlet from the filtration line.
Optional Feature	Optional sampling valve near bottom section.	Allows quality control checks without opening the main valve.

7. Electrical Requirements

Component	Specification
Heater Power	1 kW

Controller	Digital, with temperature display
Protection	MCB + Thermal cutoff + Earthing point
Power Supply	220–240 V AC OR 415 V 3-Phase (to match facility power)
Vendor Requirement	Vendor must provide plug-and-operate wiring and panel.

8. Safety & Protection

Safety Feature	Description
Mobility	Castor wheels with dual-locking brakes.
Electrical	Earthing lug for static discharge.
Thermal	Over-temperature shutdown (thermal cutoff).
Structure	Smooth outer edges for operator safety.
Pressure	Pressure-vent port on the tank lid.

9. Documentation & Warranty

Requirement	Specification
Warranty	Minimum 1-year warranty on tank, heater, discharge valve and accessories.
Required Manuals	Operation & maintenance manual
	P&ID / GA drawing
	Electrical schematic
Spare Parts	Spare gasket set & recommended spare list

E2.11. Independent dehydration – 500 Liters / 2H

1. Function & Application

Feature	Description
Primary Use	Industrial dehydration, moisture removal, and drying of edible oils / liquid products / coconut milk / plant extracts.
Operating Condition	Vacuum sealed conditions.
Benefits	Prevents oxidation, contamination, and flavor loss while

	efficiently removing moisture at controlled temperatures.
Suitability	Continuous and hygienic food-grade operation.

2. Capacity

Parameter	Specification
Batch Size	500 Litres per batch
Output Rate	Approx. 500 L every 2 hours (Dependent on product characteristics and moisture load).

3. System Composition (Complete Turnkey Package)

The system must include the following components as an integrated package, installed, tested, and commissioned by the vendor:

1. Sealed Dehydration Tank
2. Heating System with Power Module
3. Water-Ring Vacuum Pump
4. Oil Circulation Pump
5. Industrial Control Cabinet
6. Pipeline and Interconnection Accessories

4. Technical Specifications – Main Components

A. Sealed Dehydration Tank

- Fully enclosed sanitary tank for moisture removal.
- High-strength cylindrical construction to withstand vacuum environment.
- Designed for food-grade liquids and oils.
- Internal finish suitable for high-temperature processing.

B. Heating & Power

Component	Rating	Control
Primary heating power	1.5 kW	PID / temperature controller for precision heating
Secondary heating elements	15 kW × 2 units (30 kW total)	

C. Vacuum System

Component	Rating	Type / Feature

Water-Ring Vacuum Pump	1.1 kW	
Vacuum type		Continuous vacuum-drying
Condensation		Water vapour condensation + drain facility

D. Oil Circulation Pump

Component	Rating	Operation
Pump power	1.5 kW	Continuous oil circulation for even heat distribution

E. Control Cabinet

- Centralized electrical and automation cabinet.
- Includes:
  - Start/Stop control for all motors
  - Temperature monitoring & adjustment
  - Vacuum status indicator
  - Overload / short-circuit protection
  - Emergency stop switch
- Industrial-grade wiring and labeling.

F. Pipeline & Connections

- Food-grade stainless-steel interconnecting pipelines.
- Vacuum-rated gaskets and fittings.
- Inlet/outlet valves for product handling.
- Condensate discharge line included.

5. Safety & Protection

- Vacuum-pressure safety valve
- Temperature safety shut-off
- Motor overload / thermal protection
- Anti-backflow safety on pumps
- Earthing terminal for equipment protection

6. Installation & Commissioning (Vendor Scope)

Vendor must supply, install and commission:

- Base frame and equipment leveling

- Electrical and control wiring
- Pipeline connection and leak test
- Vacuum run test & dehydration performance trials
- Training for operators and maintenance staff

7. Requirements for Successful Operation (Buyer/Site Scope)

Requirement	Specification
Power supply	415V, 50 Hz, 3-Phase
Water supply	For vacuum condenser
Ventilation	Adequate ventilation for heat dissipation
Oil handling	Oil handling tank for input and output transfer (buyer scope unless otherwise stated)

8. Warranty

Minimum 1-year warranty on:

- Dehydration tank
- Vacuum pump
- Oil pump
- Heating system
- Control cabinet & electrical components
- Welding and fabrication

E2.12. Final oil storage tank – 3000 Liters

1. Function & Application

Feature	Description
Primary Use	Storage and settlement of filtered edible coconut oil and similar food-grade oils.
Product Integrity	Maintains product hygiene, low contamination risk.
Output	Enables smooth transfer to filling / refining equipment.
Cleaning	Fully compatible with CIP (Clean-In-Place) wash cycles for

	automated sanitary cleaning without dismantling.

2. Capacity

Specification	Value	Note
Working Capacity	3000 Litres	Required operational volume.
Total Tank Volume	Higher than working capacity	Ensures safe headspace during rapid filling and agitation.

3. Construction & Materials

Component	Material	Specification / Notes
Shell / Cylinder	SUS316L	3 mm thickness, food-grade
Bottom	SUS316L	Dish / arc transition to prevent residue and enable total drainage
Top Lid	SUS304	Includes 300 mm manhole, feed port, and CIP spray ball
Discharge Valve	SUS316	Bottom butterfly valve
Support Legs	SUS304	4 heavy-duty lockable castor wheels for tank mobility
Gaskets & Seals	—	Food-grade EPDM/PTFE
Contact Surfaces	100% SUS316L	All product-contact surfaces are food grade.

4. CIP Cleanability (Mandatory Requirement)

Requirement	Specification / Note
Spray System	Rotary CIP spray ball / high-coverage spray head
Solution Compatibility	Compatible with alkaline and hot-water CIP solutions
Ports	Dedicated CIP inlet port and CIP return port near tank bottom
Surface Finish	Smooth internal surface finish ≤ 0.6 µm Ra
Design	No dead-pockets design for elimination of stagnant

	oil zones
Welds	Internal welds must be ground and polished for sanitation

5. Operational Features

Feature	Function
Bottom Design	Sloped/dished bottom ensures 100% drainage into bottom valve.
Discharge Valve	Butterfly discharge valve suitable for rigid pipelines or flexible hose outlets.
Access	Manhole access for inspection and periodic manual cleaning when required.
Input	Top feed port for pipeline transfer from filter press or pump.
Level	Optional Level Indication Provision: mechanical / sight glass / sensor.

6. Mechanical & Mobility

Feature	Specification
Frame	Stable heavy-duty four-leg frame
Mobility	Dual-locking wheels to keep tank fixed during operation.
Structural Integrity	Reinforced side stiffeners to prevent bulging under heat and weight.
Operation	Designed for continuous 24×7 industrial operation.

7. Safety & Protection

Feature	Purpose
Pressure Vent	Pressure-vent port near the manhole to prevent vacuum or over-pressure.
Exterior	Smooth exterior profile for operator safety.
Electrical	Earthing provision for static discharge protection when connected to pumps.
Edges	Rounded edges on lid and manhole area.

8. Electrical (Only if required)

Vendor must add electrical connection *only* if the tank includes the following:

- Level sensor
- CIP automation sensor
- Temperature reading port
- Motorized valve (optional)

*Note: No heating system is required unless separately specified.*9. Documentation & Warranty

Vendor must supply:

- 1-year minimum warranty covering tank body, discharge valve, wheels, CIP spray ball and weld integrity.
- Operation & maintenance manual.
- Cleaning & CIP instructions.
- Spare gasket kit.
- GA drawing and nozzle map before fabrication.

E2.13. 4 Head Automatic Oil Filling & Bottle

(12–16 BPM for Round Bottles)-----System Composition

The automatic bottling line shall consist of the following synchronized equipment, designed for continuous 24×7 operation for edible oil filling:

Item	Equipment
1.	Automatic Four-Head Liquid Filling Machine
2.	Automatic Single-Head Screw Capping Machine
3.	Automatic Self-Adhesive Vertical Labeling Machine
4.	Integrated Conveyor System for Bottle Handling and Machine Synchronization

1. Automatic Four-Head Liquid Filling Machine

Working Principle: Volumetric filling using reciprocating and diving nozzle technology to prevent spillage and foaming.Technical Requirements

Specification	Detail

Filling Heads	4 Nos.
Output Capacity	2400 – 4200 bottles/hour
Supported Fill Sizes	5 ml – 1000 ml
Filling Accuracy	±1% on single dose
Conveyor Height	860 – 910 mm adjustable
Main Motor	2 HP, 415 V, 50 Hz
Conveyor Motor	0.5 HP, 415 V, 50 Hz
Air Requirement	6 bar minimum
Bottle Handling	Round / Square / Flat
Safety	No-Bottle-No-Filling system
Structure	Full stainless-steel construction
Dimensions (L×W×H)	2135 × 1280 × 1610 mm
Approx. Weight	800 kg
Additional Features	Error-code display, drip tray, drain tray, A/C frequency drive

2. Automatic Single-Head Screw Capping Machine

Working Principle: Star-wheel indexing with automatic cap pick-and-place and screw-tightening.Technical Requirements

Specification	Detail
Capping Head	1 No.
Output Capacity	1000 – 3000 bottles/hour
Main Motor	1 HP, 415 V, 50 Hz
Cap Feeding Bowl	300 W magnetic coil
Conveyor Height	860 – 910 mm adjustable
Bottle Diameter Range	25 mm – 100 mm
Bottle Height Range	58 mm – 240 mm
Cap Diameter Range	19 mm – 38 mm
Safety	No-Bottle-No-Cap

Structure	Stainless-steel structural design
Dimensions (L×W×H)	1525 × 850 × 1900 mm
Approx. Weight	350 – 550 kg
Additional Features	Low noise, adjustable sealing pressure

3. Automatic Self-Adhesive Vertical Labeling Machine

Working Principle: Full or partial wrap-around self-adhesive labeling for round bottles.Technical Requirements

Specification	Detail
Output Capacity	3600 – 9000 bottles/hour
Conveyor Motor	0.50 HP, 415 V, 50 Hz
Pressing Device Motor	0.25 HP, 220 V, 50 Hz
Conveyor Height	860 – 910 mm adjustable
Label Length Range	30 – 180 mm
Label Width Range	16 – 100 mm
Roll OD	Up to 300 mm
Roll Core ID	75 mm
Dimensions (L×W×H)	1835 × 600 × 1450 mm
Approx. Weight	350 – 600 kg
Features	PLC control, high-precision label positioning, no change-parts needed for bottle size variation

4. Conveyor & Line Synchronization

Feature	Detail
Material	Stainless-steel slat conveyor
Speed	Variable via AC frequency drive

Function	Transfers bottles from filling → capping → labeling
Design	Noise-free UHMW guide tracks and self-lubricating chain support
Inclusions	Bottle-stop at filler, bottle-guide rails, adjustable guide height

Utility Requirements (Entire Line)

Utility	Requirement
Power Supply	415 V, 3-Phase, 50 Hz
Total Connected Load	Approx. 4.5 kW
Compressed Air	6 bar @ 0.5–2 CFM

Vendor Scope of Supply

- All machinery as listed above
- Electrical & control panels for all machines
- Interconnecting conveyor system
- Machine mounting hardware
- First set of changeover tools (if required)
- Commissioning & test-run at buyer’s plant
- Operator training

Warranty

- 1-year minimum warranty against manufacturing defects.
- Warranty must cover:
    - Motors
    - Gearboxes
    - Sensors
    - Touch controls / PLC system
    - Mechanical assemblies

BOQ Summary

Item	Qty
Automatic Four-Head Liquid Filling	1

Machine	
Automatic Screw Capping Machine	1
Automatic Vertical Labeling Machine	1
Integrated Conveyor System	1 lot

E2.14. Semi-Automatic Single Bottle Filling Line (1–5 L Range)

1. Machine Description

A semi-automatic liquid filling system designed for edible oils and other food-grade liquids, suitable for filling 1 to 5 litre bottles/jars with high accuracy and minimum spillage. Ideal for medium-scale production lines and standalone packaging operations.-----

2. Operating Principle

Feature	Description
Dosing Mechanism	Uses a pneumatic piston-pump volumetric dosing mechanism.
Operation Sequence	Operator places bottle $\rightarrow$ filling nozzle dispenses preset volume $\rightarrow$ operator removes bottle.
Performance	Ensures consistent filling accuracy even with viscous products.

3. Technical Specifications (Updated for 1–5 Litre Filling)

Parameter	Specification
Voltage	110V / 220V, 50–60 Hz
Power Consumption	400 W
Pump Type	Pneumatic piston pump
Filling Range (Revised)	1 – 5 Litres per bottle
Hopper Capacity	30 Litres
Speed	10 – 30 bottles per minute (depending on fill volume & operator speed)
Filling Accuracy	± 1%

Working Pneumatic Pressure	0.4 – 0.6 MPa
Recommended Air Compressor	2 HP (minimum) – customer scope unless specified
Bottle Height	5 – 20 cm
Bottle Diameter	≤ 10 cm
Filling Head Diameter	6 mm / 8 mm
Conveyor Dimensions	1310 × 100 mm
Machine Dimensions	1310 × 700 × 850 mm
Machine Weight	Approx. 112 kg

4. Construction

- Food-grade stainless steel contact parts.
- Matt-finish SS frame for hygiene and corrosion resistance.
- Smooth-bore hose and sanitary sealing to prevent contamination.
- Adjustable bottle guide for different bottle sizes.

5. Safety & Operating Features

- No-drip pneumatic cut-off on nozzle
- Emergency stop switch
- Over-pressure air relief protection
- Guarded hopper lid
- Anti-vibration adjustable machine feet

6. Utility Requirements

Utility	Requirement
Electrical	110 / 220 V AC
Air	0.4 – 0.6 MPa continuous
Air Compressor	2 HP recommended (dry and regulated air required)

E2.15. Oil Big Mouth Packing Line

1. Scope of Supply
Design, manufacture, supply, installation, testing, and commissioning of a food-grade oil big-mouth packing line suitable for packing edible coconut oil into 5 L, 10 L, 15 L and 20 L containers.

2. Process Description
The system shall receive empty containers, fill with coconut oil, seal using spout/cap arrangement and discharge to outfeed conveyor.

3. Technical Specifications
3.1 Filling System
- Type: Volumetric / Positive displacement filling
- Filling Range: 5–20 Litres
- Accuracy: ±1%
- Nozzles: Anti-drip, big-mouth compatible

3.2 Construction
- Product contact parts: SS304
- Surface finish: Ra ≤ 0.8 micron
- Frame: SS304

3.3 Conveyor System
- SS304 structure
- Food-grade belt
- VFD controlled

3.4 Electrical & Automation
- Power: 415V, 3 Phase, 50Hz
- PLC based control panel
- Emergency stop and interlocks

3.5 Utilities
- Power load: 5–15 kW
- Compressed air: 6 bar

E2.16. Accessories: Small SS304 oil tank, 3 oil pumps, SS304 pipeline, Carbon steel transfer oil tank

A. Small SS304 Oil Tank
- Capacity: 200–1000 Litres
- Material: SS304
- Finish: Ra ≤ 0.8 micron
- Conical bottom with drain

B. Oil Pumps – 3 Nos
- Type: Rotary lobe / sanitary gear
- Capacity: 10–200 LPM
- Motor: 0.75–5 kW, 415V

C. SS304 Pipeline
- Sizes: DN25–DN80
- Type: Sanitary SS piping
- Valves: SS butterfly/ball

D. Carbon Steel Transfer Oil Tank
- Capacity: 1–30 KL
- Material: Carbon steel with food-grade epoxy lining
- Accessories: Manhole, vent, drain, level gauge

General Conditions
- Equipment shall be food-grade
- Supplier shall provide drawings, manuals and test certificates
- Warranty: 12 months from commissioning

Schedule F

Sl No	Machinery Details	Qty
01	Coconut Meat Processing and Milk extraction Setup	01

F1. COCONUT MEAT PROCESSING AND MILK EXTRACTION SETUP

No.	Item	Qty
F1.1	Inspection conveyor	1
F1.2	Pre-Cutter	1
F1.3	Stainless steel container to collect coconut water	1
F1.4	Blanching Machine Continuous Model with Capacity 1 Mt., Steam Operated	1
F1.5	Coconut white meat drying area post hot water dip	1
F1.6	Screw conveyor with hopper	3
F1.7	Pin Mill	1
F1.8	Coconut milk extraction	1
F1.9	Conveyor Wet Desiccated Powder	1
F1.10	White meat collection station	1
F1.11	Vibro Sifter – 48" inch, Single Deck – SS.304, 2 H.P. Motor, Three Phase with Anti-Bending System	1
F1.12	Storage tank (2000 L) with agitator	2
F1.13	Centrifuge	4
F1.14	Grated coconut machine	1

F1.15	Machine to cut coconut white meat into slices and chips	1
F1.16	Metal detector	2
F1.17	Portable labelling machine	6
F1.18	Weighing Machines in Factory to Weigh Products	6
F1.19	Hydraulic Lifts 1.5–2 Ton capacity	4
F1.20	Crate Washer	1
F1.21	Roasting Machine	2
F1.22	Jacketed kettles with agitators	2
F1.23	Pallet Stretch Wrapping Machine	1

F1. Inspection conveyor

Specifications

General Information

Specification	Detail
Machine Name	Stainless Steel Inspection Conveyor with Lighting
Application	Visual inspection and manual sorting of coconut meat/product
Operation Type	Continuous flow, wet processing environment
Duty Cycle	Continuous (24×7 designed)

1. Structure & Material

Component	Specification
Material of Construction	SS 304 Stainless Steel (Frame, legs, guards, fasteners)
Hygienic Design	Food-grade, suitable for wet processing
Surface Finish	Polished stainless steel (for ease of cleaning/sanitation)

2. Dimensions & Ergonomics

Parameter	Specification
Conveyor Length (L)	6.5 meters

Belt Width (W)	1.26 meters
Working Height (H)	4 feet (Adjustable)
Construction	Sturdy, designed for vibration-free operation
Ergonomics	Adjustable height, clear visual access, low glare design

3. Conveyor Belt

Parameter	Specification
Belt Material	White Food-Grade Belt
Surface Finish	Smooth, Non-absorbent, Antibacterial
Features	Belt tracking and tension adjustment mechanism provided

4. Drive System

Parameter	Specification
Motor Power	3 kW
Electrical Supply	3-phase, 415 V, 50 Hz
Gearbox Type	Helical Gearbox
Gearbox Ratio	1:40
Operation	High torque, smooth, low-noise
Belt Speed	Selected for comfortable human inspection speed (Adjustable)

5. Safety & Guards

Parameter	Specification
Side Guards	Full-length SS side guards on both sides (prevents spillage)
Edge Finish	Rounded and deburred edges (operator safety)
Emergency Stop	Push-button within operator proximity
Pinch Point Protection	Belt guarding at drive and tail ends

Stability	Anti-slip feet/pads for stability on wet floors
Acoustics	Low-noise transmission

6.Lighting System for Inspection

Parameter	Specification
Number of Lights Sets	3 sets
Power per Set	30 W each (Total 90 W)
Mounting	Mounted over the conveyor, angled for optimal illumination
Housing	Waterproof housings (suitable for wet area)
Purpose	Focus illumination for accurate visual inspection

7. Electrical System

Parameter	Specification
Junction Box	IP65-rated SS electrical junction box
Motor Protection	MCB/MCCB + thermal overload relay + contactor
Controls	Start / Stop / Emergency Stop push-buttons at operator location
Cable Management	Protected SS cable trays / conduits along structure
Recommended Wiring	Copper industrial cables, heat & moisture resistant

8. Hygienic & Maintenance

Feature	Design Specification
Cleaning	Fully washable SS frame (high-pressure wash compatible)
Belt Access	Belt removable for washing and inspection
Bearings	Sealed bearings (water and dust resistance)
Servicing Access	Quick-access panels for belt tensioning and gearbox servicing

9. Documentation & Warranty

Item	Requirement
Warranty	Minimum 1-year warranty on complete machine
Documentation	Electrical drawing and O&M manual to be provided
Spares	Supplier to include list of recommended spare parts

F1.2. Pre-Cutter

1. General Specifications & Function

Feature	Specification
Machine Type	Copra Cutter / Pre-Cutter
Function	Cuts dry copra into smaller pieces for further processing (oil extraction, milling, pulverizing).
Operation	Continuous-duty cutting design
Application	High-capacity commercial/industrial operations

2. Performance & Capacity

Feature	Specification
Rated Throughput	300 kg per hour
Consistency	Consistent performance across varying copra hardness and moisture levels.
Duty Cycle	Suitable for 24×7 continuous industrial operation.

3. Power & Motor Requirements

Feature	Specification
Motor Power	3 HP (Horsepower)
Phase	3-phase motor (3PS)
Motor Type	High-torque, sized for full load copra cutting.

Motor Protection	MCB/MCCB + thermal overload relay + phase-failure protection.

4. Construction Materials

Component	Material Specification
Cutting Blades	Stainless Steel (SS) (High wear resistance)
Rotating Shaft	Stainless Steel (SS) (Corrosion-resistant, long life)
Machine Body/Frame	Mild Steel (MS)
Frame Finish	Powder-coated (for corrosion protection and durability)

5. Mechanism & Structure

Feature	Detail
Cutting Mechanism	Rotary cutter action
Cut Quality	Ensures uniform cutting size and minimized fine particle waste.
Construction Gauge	Thick-gauge for stable, vibration-free operation.
Welds	All welds reinforced for long operational life.
Stability	MS base frame with anti-vibration pads.
Transmission	Low-noise gearbox / belt drive system for smooth torque.

6. Feeding, Discharge, and Safety

Feature	Detail
Feeding	Large safety-designed hopper for controlled, non-clogging feed.
Discharge	Chute suitable for bagging, bin feed, or conveyor connection.
Safety - Primary	Complete cutting chamber enclosure.
Safety - Operator	Emergency stop switch within reach.

Safety - Optional	Safety interlock to prevent operation if hopper access is open.

7. Maintenance & Warranty

Feature	Detail
Blade Service	Easily accessible for sharpening or replacement.
Bearings	Sealed to resist dust and oil ingress.
Service Points	Lubrication points provided for fast maintenance.
Warranty	Minimum 1-year warranty on complete machine and motor.
Spare Parts	Long-term availability of spare blades and consumable parts required from supplier.

F1.3. Stainless steel container to collect coconut water

Section	Feature	Specification Details
General	Purpose	Collection and temporary storage of coconut water during processing (paring/deshelling/meat processing). Hygienic and food-grade construction.
Dimensions	Length	4 feet
	Width	4 feet
	Height	3.5 feet
	Bottom Stand Height	4 inches
Construction	Material	Complete unit fabricated from SS 304 stainless steel (tank, base, lid, fittings).
	Fabrication	Fully welded leak-proof construction.
	Finish	Internal and external surfaces polished for easy cleaning and sanitation.
Mobility	Wheels	Fitted with four heavy-duty stainless-steel caster wheels (food-grade type).
	Configuration	Two fixed and two swivel with brakes. Smooth movement even when filled.

Top Cover	Design	Removable/hinged SS cover to prevent dust, contamination, and spillage.
	Feature	Includes vent / relief gap to avoid pressure buildup during continuous inflow.
Drainage	Outlet	Bottom drain outlet for complete emptying.
	Fittings	Fitted with SS ball valve and sanitary hose connection compatibility.
	Positioning	Drain port positioned at the lowest point for full water discharge.
Strength	Load Handling	Designed to withstand full-volume water load without deformation.
	Reinforcement	Reinforced corners and stiffeners provided to avoid bulging.
Hygiene & Safety	Interior	Rounded inside corners to prevent bacterial buildup and enable easy washing.
	Safety	No sharp edges or exposed weld burrs.
	Cleaning	Compatible with CIP / high-pressure washdown cleaning.
Durability	Corrosion	Resistant to corrosion, salt, moisture, fruit acids, and cleaning chemicals.
	Hardware	Wheels and mounting hardware are rust-proof.
Warranty	Duration	Minimum 1-year warranty on tank, frame, wheels, and valves.

F1.4. Blanching Machine Continuous Model with Capacity 1 Mt., Steam Operated

AND

F1.5. Coconut white meat drying area post hot water dip

General Specifications

Feature	Specification
Function	Continuous blanching of food products by hot water immersion.
Application	Industrial processing lines requiring uniform blanching.

Capacity	1 Metric Ton (1 MT) per hour (continuous feed).
Blanching Temp.	Maintained at 90–95°C.
Heating System	Steam-operated, immersion steam system.
Steam Pressure	3.5 Kg/cm² (2 inlet lines).
Construction Material	Complete machine fabricated using SS 304 stainless steel.
Insulation	50 mm thick Glass wool between shells to minimize heat loss.
Welding	Argon-arc welded, smooth and glossy finish.

Construction Details

Component	Material	Thickness	Notes
Inner Shell	SS 304	2 mm	Food-grade contact.
Outer Shell	SS 304	1.6 mm	-
Insulation	Glass Wool	50 mm	For energy efficiency and heat retention.

Dimensions & Operating Heights

Dimension	Measurement
Length	5100 mm
Width	1300 mm
Loading Height	1000 mm
Unloading Height	1500 mm

Conveyor & Product Handling System

Feature	Specification
Conveyor Type	Stainless-steel mesh belt.
Belt Width	800 mm
Clear Product Width	700 mm
Drive Mechanism	SS sprockets for positive belt drive.

Speed Control	Adjustable conveyor speed for blanching time control.

Drive & Temperature Control

System	Component	Rating/Specification	Function
Conveyor Drive	Geared Motor	2 HP	Drives the mesh belt.
Speed Control	VFD (Variable Frequency Drive)	Suitable for 2 HP	Allows precise speed variation for blanching time.
Water Agitation	Blower	1 HP	Circulates water for uniform temperature distribution.
Agitation Method	Circulation-air blower	-	Prevents temperature stratification.
Control Panel	Electrical Panel (SS304)	Fully waterproof (IP-rated)	Houses all electrical controls.

Electrical & Automation Specifications

Feature	Detail
Control Panel	Individual SS304 Electrical Control Panel (IP-rated wiring).
Motor Protection	Thermal overload protection and phase-failure relay.
Control Gear	MCB and Starter control system (L&T make or equivalent contactors, indicators).
Monitoring	Continuous temperature monitoring system.
Automation	VFD control for conveyor speed adjustment.

Safety, Hygiene & Maintenance

- Hygiene: Built for food-grade cleanliness; all internal corners smoothened to avoid bacterial accumulation.
- Safety: Double-layer heat-shield structure prevents external heat radiation. Operational guards and PPE signage to be provided.
- Access: Manhole provided for internal access and cleaning. Top doors with exhaust provisions.

- Steam Management: Exhaust system at entry and exit areas to safely release steam.

Energy Efficiency

- Insulation: Glass-wool insulation minimizes heat loss, reducing steam consumption.
- Circulation: Controlled water circulation maintains temperature with reduced steam usage.

Warranty & Documentation

Item	Requirement
Warranty	Minimum 1-year on machine, electricals, motors, and blower.
Documentation	Electrical drawings and P&ID schematic.
Manuals	Installation and commissioning manual.
Spares	List of recommended spare parts.

Integration & post-blanching

Feature	Specification
Drying Integration	Designed for direct connection to a post-blanching conveyor.
Post-Blanching Unit	Integrates with a 4-foot conveyor for simple water drying.
Drainage Control	Effective water drainage at exit to minimize carry-over.

F1.6. Screw conveyor with hopper

1. General Information & Quantity

Attribute	Specification
Machine Type	Industrial Screw Conveyor
Application	Hygienic transfer of Coconut Meat/Product
Duty Cycle	24x7 Industrial Continuous Duty
Quantity Required	3 Units (Identical in all specifications)

2. Structure & Material I9

- The entire construction shall be of food-grade stainless steel, suitable for wet processing environments.

Component	Material Specification	Key Feature
Construction	Complete SS 304 Stainless Steel	Suitable for wet operating environments and wash-down cleaning.
Surfaces	Polished inner and outer surfaces	Hygienic food-grade transfer, prevents material build-up.
Components	Trough, Screw, Hopper, Legs, Guards, Fasteners	All parts exposed to the product or environment shall be SS 304.

3. Dimensions & Capacity (Per Unit)

- The design ensures high-volume, uniform material transfer without clogging.

Dimension	Specification
Total Length	3 meters
Screw Diameter	140 mm
Working Height	5 feet (Adjustable)
Infeed Hopper Size	600 mm × 600 mm
Conveyor Mechanism	SS 304 shaft and flights, precision-machined. Trough with tight sealing to prevent leakage.
Performance	Designed for continuous high-volume material transfer with zero clogging.

4. Drive System & Electrical Load

The drive system is sized for continuous, high-torque industrial duty.

Attribute	Specification (Per Unit)
Motor Power	2.2 kW (Approximately 3 HP)
Voltage	415 V, 3-phase, 50 Hz
Gearbox	1:17 (Ensures high torque and smooth conveying)

Ratio	
Duty Rating	Continuous Industrial Duty Cycle
Control Panel	IP55 SS Control/Junction Box. Start/Stop panel mounted on the machine.
Motor Protection	MCB / MCCB + Thermal Overload Relay + Phase-Failure Protection

Total Electrical Load for 3 Units

Attribute	Calculation	Total Load
Motor Power (Total)	3 units × 2.2 kW/unit	6.6 kW
Total Electrical Load	Approx. 8.25 kVA (Assuming a Power Factor of 0.8)	

5. Safety & Hygiene

- Prioritizing operator safety and ease of sanitation is critical for food processing.

Category	Features
Safety Systems	Screw fully enclosed. External SS side guards around drive/rotating parts. Emergency stop switch near operating zone. Anti-slip feet.
Hygiene	Surfaces smoothened for rapid cleaning. Screw and trough designed for quick access for wash-down. Sealed bearings to prevent ingress.
Durability	Designed for 24x7 industrial duty with minimal maintenance. Wear elements sized for long-term performance.

6. Additional Information

Requirement	Detail
Noise Control	Low-noise drive system and precision alignment to reduce vibration, ensuring a comfortable working environment.
Infeed Hopper Design	600 × 600 mm, funnel-style profile to prevent overflow and improve operator safety and material flow.
Delivery	All 3 units must be identical in construction, material, and performance.

F1.7. Pin Mill

Specification Area	Feature	Detail
Function & Application	Primary Function	Fine grinding of coconut white meat
	Suitable Output for	Desiccated coconut, paste, powder, or oil extraction
Capacity & Output	Processing Capacity	1000 kg/hour (1.0 Ton/hr)
	Final Particle Size	Approx. 1.0 mm
Motor & Power	Motor Power	2.2 kW (≈ 3 HP), 3-phase
	Voltage/Frequency	415 V, 50 Hz, 3-phase industrial supply
	Motor Duty	Continuous duty, high-load performance
	Motor Protection	MCB + thermal overload relay + phase-failure protection
Construction & Material	Contact Parts Material	Complete Stainless Steel (SS) (Body, contact parts, grinding chamber)
	Build Standard	Food-grade, suitable for wet processing
	Finishing	Sharp edges rounded and polished for hygiene
Grinding Mechanism	Type	High-precision pin mill rotor
	Spare Parts	3 pcs spare blades included
	Blade Material	Wear-resistant steel grade
	Access	Quick-access design for blade change and cleaning
Dimensions & Weight	Size (L × W × H)	1200 mm × 700 mm × 1450 mm
	Weight	280 kg (Heavy base frame for stability)
Feeding & Discharge	Feeding System	Controlled hopper feed (prevents choking)

	Discharge	Bottom port (direct transfer to next stage)
Electrical & Controls	Wiring	Factory-fitted industrial wiring (heat/moisture resistant copper)
	Controls	Start / Stop push-button controls
	Safety Control	Emergency stop switch
	Enclosure	IP55 stainless-steel junction/control box
Safety Features	Chamber Safety	Grinding chamber fully enclosed
	Interlock	Safety interlock recommended
	Stability	Vibration-damped footing
Hygiene & Maintenance	Cleaning	Food-grade surfaces, suitable for high-pressure wash
	Internal Access	Tool-less access to internal grinding zone
	Bearings	Sealed to prevent water and product ingress
Durability	Operation Design	Designed for continuous 24×7 industrial operation
	Component Sizing	Rotor and bearings sized for long-term high-rpm load
Warranty & Spares	Warranty	Minimum 1-year warranty (complete machine, motor, electrical)
	Spares Support	Supplier to ensure availability of spare blades and wear parts

Key Performance Highlights

- High Throughput: 1000 kg/hour capacity.
- Ultra-Fine Output: Consistent particle size of approx. 1.0 mm.
- Robust Construction: Complete SS 304 (or equivalent food-grade SS) build.
- Precision Grinding: Utilizes a Pin Mill rotor for micron-level consistency.
- Industrial Reliability: Designed for continuous 24×7 operation with comprehensive motor protection.

F1.8. Coconut milk extraction

1. Core Functionality

Feature	Description
Primary Function	Designed to separate coconut milk from grated/crushed coconut meat using mechanical pressing.
Operation Type	Suitable for continuous industrial coconut processing operations.
Optimization	Optimized to achieve maximum milk yield with minimal fiber returns.

2. Performance and Capacity

Parameter	Value	Details
Extraction Capacity	1000 kg/hour (1 ton/hr)	High throughput suitable for medium to large-scale production.
Duty Cycle	24 x 7 continuous operation	Built for heavy industrial usage and reliability.
Milk Yield	*Additional Information:* Expected yield ranges between 55% - 65% depending on maturity and pre-treatment of the coconut meat.	*Not explicitly in original text, but standard for this equipment.*

3. Power and Electrical System

Electrical Component	Specification
Motor Power	2.2 kW
Power Supply	415 V, 50 Hz, 3-phase
Motor Protection	Overload and phase imbalance protection.
Control Panel	Individual electrical control panel provided, including Start/Stop push buttons, Emergency Stop switch, MCB/MCCB protection, and Thermal overload relay.
Enclosure	IP55 waterproof control enclosure

Rating	
Wiring	Moisture-resistant copper industrial cables.

4. Material and Construction

Component	Material Specification	Key Features
Machine Fabrication	Complete machine fabricated from Stainless Steel SS304 (including contact parts, hopper, press chamber, cover, frame, and fasteners).	Ensures hygiene, durability, and corrosion resistance.
Finish	Food-grade finish.	Suitable for hygienic food production environments.
Contact Area	No mild-steel or painted components allowed in milk contact area.	Strictly adheres to food safety standards.
Cleaning Design	Designed for easy dismantling and wash-down cleaning (quick-release clamps, no hidden crevices).	Facilitates thorough sanitation.

5. Dimensions and Weight

Parameter	Value
Length (L)	1300 mm
Width (W)	500 mm
Height (H)	1330 mm
Approx. Weight	180 kg
Base	Stable base frame with anti-vibration construction and anti-skid rubber pads.

6. Feeding and Discharge System

System	Component	Description
Feeding	Large food-grade SS hopper	Ensures controlled and continuous feeding of coconut meat.

Milk Discharge	SS outlet with sanitary connection	Connects directly to a storage tank or pipeline, ensuring milk purity.
Fiber Discharge	Separate outlet provided	Allows for continuous separation and removal of spent coconut fiber (pulp).

7. Safety and Reliability

Aspect	Feature
Safety	All rotating parts fully shielded. Emergency stop switch easily accessible. Overload protection prevents mechanical damage.
Vibration Control	Low-noise gearbox, dynamically balanced rotating components, and vibration-absorbing frame.
Reliability	Components sized with adequate safety factors for heavy industrial usage.

8. Warranty

Item	Details
Machine Warranty	Minimum 1-year warranty on the full machine, including electrical components and motor.
Spares Guarantee	Vendor must guarantee the availability of essential spares (screens, gaskets, seals).

F1.9. Conveyor Wet Desiccated Powder

AND

F1.10. White meat collection station

1. Application

Feature	Detail
Purpose	Collection and intermediate material handling of wet desiccated coconut powder after processing and before packing/drying/storage.
Components	Collection center includes trays, trolleys, and a storage bin.

2. Construction & Material

Component	Material	Key Feature
General Structure	SS 304 Stainless Steel	Frame, supporting structures, and all contact surfaces.
Suitability	Food-Grade	Built for wet powder handling and able to

		withstand regular wash-down cleaning.

3. Collection Center – Trays & Trolley

Wet powder can be collected temporarily using stackable trays and mobile trolleys, matching the approved standard for the testa collection system.

Item	Specification	Detail
Tray Size	1200 × 920 × 30 mm	Internal dimensions for holding powder.
Tray Elevation	140 mm	Height of tray legs for ease of handling/cleaning.
Stacking Capacity	Up to 10 trays per trolley	Maximum recommended stacking height.
Material	Complete SS 304	Tray and legs construction.
Trolley Frame	SS 304	Robust stainless steel frame.
Wheels	4 Food-Grade Wheels	2 swivel wheels + 2 brake wheels for mobility and stability.
Load Capacity	Minimum 300 kg	Minimum safe working load per trolley.

4. Collection Bin (Storage Hopper)

- For high-volume collection and temporary storage of wet desiccated powder.

Feature	Specification
Size	3 ft × 3 ft × 3.5 ft height (approx. 0.9m x 0.9m x 1.07m)
Construction	SS 304 Stainless Steel – polished, food-grade finish.
Top/Lid	Removable SS cover to protect the product from dust and contamination.
Bottom	Drain/emptying port with sanitary valve connection (if line discharge is required).
Mobility	Wheels are optional based on the final installation location (fixed or mobile options available).

5. Hygiene & Cleaning

Aspect	Detail
Contact Surfaces	All surfaces are food grade, non-reactive, and washable.
Cleaning	Trays, bins, and trolleys are washable with industrial

Method	cleaners and high-pressure wash.
Design	All corners are rounded to avoid powder accumulation and facilitate thorough cleaning.

6. Duty Cycle & Reliability

Feature	Requirement
Operation	Suitable for 24×7 continuous operation.
Durability	Collection units must be sized with an adequate safety factor for long-term durability.

F1.11. Vibro Sifter – 48" inch, Single Deck – SS.304, 2 H.P. Motor, Three Phase with Anti-Bending System

- Coconut Meat Processing - Vibratory Sifter Specifications (Schedule 1)

Section	Detail	Specification
1. Function & Application	Primary Use	Grading, sieving, and separation of coconut powder/meat particles or other food-grade powders.
	Duty	Suitable for continuous industrial duty and high-throughput screening lines.
2. Size & Decks	Diameter	48 inches
	Deck Type	Single-deck sifter for single-stage separation.
	Standard Sieve Size	30# (Others optional, as per process requirement).
3. Material of Construction	Contact Parts	SS 304 stainless steel (screen housing, product contact surfaces, clamps, dome, springs, nut bolts).
	Sieve Frame & Mesh	SS 316L with silicon moulding (for high strength and hygiene).
	Non-Contact Parts / Stand	Mild Steel (MS) with matt painted finish.
4. Motor & Drive	Motor Rating	2 HP, 3-phase electric motor.
	Key	Anti-bending system built into the vibro drive to

	Feature	prevent shaft deflection and ensure long motor and bearing life.
	Motion	Vibratory motion optimized for uniform material distribution and efficient sieving.
5. Production Capacity	Output	350 to 400 kg per hour (dependent on material characteristics and sieve size).

6. Performance, Features & Hygiene

Feature	Description
Performance	Fast material separation with minimum powder loss. Vibration-optimized assembly for high throughput.
Sieve Change	Easily replaceable sieve for multiple screening grades and multi-grade operation.
Hygiene	Silicone moulding prevents leakage and ensures dust-free screening. Internal contact surfaces polished for easy wash-down and sanitation. No dead corners for material accumulation.
Cleaning	Quick-release clamp system for easy dismantling of screens and cleaning.

7. Safety, Stability & Electrical

Category	Item	Requirement / Specification
Stability	Support	Anti-skid support pads for stable operation.
	Balancing	Machine balanced dynamically to reduce vibration transfer to the floor.
Safety	Spillage/Dust	Top cover clamped securely to prevent spillage and dust escape.
Electrical & Controls	Interface	Start / Stop push buttons located on the machine.
	Protection	Must include: MCB/MCCB protection, Thermal overload relay, Phase-failure protection.
	Wiring	All wiring factory-provided using moisture-resistant copper cables.
	Optional	VFD control for vibration tuning (if requested).
Vendor	Complete	The vendor must supply the complete electric

Scope	Power Supply	motor, motor mounting, protective switchgear (MCB/MCCB, overload relay, phase-failure protection), junction box, and all necessary internal wiring up to the main machine connection point.

8. Installation, Serviceability & Warranty

Item	Specification
Installation	Supplied with heavy-duty stand for floor installation.
Serviceability	Bearings accessible for lubrication and replacement. Screens interchangeable for future use.
Noise Level	Low vibration and low-noise design suitable for indoor production areas.
Warranty	Minimum 1-year warranty on complete machine including motor and vibration mechanism.

F1.12. Storage tank (2000 L) with agitator

1. Application

- Designed for storage, heating, mixing and pumping of coconut oil after extraction and filtration.
- Prevents oil solidification during ambient temperature variations and ensures smooth transfer to downstream process or packaging.

2. Quantity & Capacity

Feature	Specification	Total for 2 Tanks
Quantity	1 Tank	2 Tanks
Working Capacity (per tank)	2000 liters (2 KL)	4000 liters (4 KL)
Total Storage Capacity	-	4000 liters (4 KL)

3. Construction & Material

- Complete tank fabricated from SS 304 stainless steel, including tank body, top cover, base, agitator shaft, impeller, pipelines, and valves.
- Internal surface polished to food-grade finish to avoid oil retention and enable easy cleaning.

- External surface matt / polished finish for hygiene and aesthetics.

4. Dimensions & Design

- Cylindrical storage tank with conical or sloped bottom to ensure full draining of oil.
- Top cover provided (removable / hinged) with gasket sealing.
- Manhole / access hatch for cleaning and inspection.
- Bottom outlet for complete discharge of oil.

5. Agitator & Mixing System

Component	Specification (Per Tank)	Total for 2 Tanks
Agitator Mounting	Heavy-duty agitator mounted on top/mid section for uniform oil mixing.	2 Agitators
Motor power	2 HP (typical for 2000 L oil tank — final sizing as per viscosity and rpm).	2 x 2 HP = 4 HP
Impeller type	Paddle / anchor type designed for high-viscosity coconut oil.	-
Agitator shaft	SS304 — polished and food grade.	-
Duty	Continuous duty operation capability.	-

6. Heating System

- Heating tube / immersion oil heater provided to prevent oil solidification. *(Specific power rating of the heater is required to calculate exact consumption. Assuming a typical industrial rating of 6 kW per tank for this size.)*
- Temperature controller with adjustable setpoint for automatic heating control.
- Safety devices:
  - Thermostat cutoff to prevent overheating
  - Thermal protection for heater element
- Insulation recommended to improve heating efficiency and reduce power consumption (vendor to specify).

7. Oil Pump & Piping

Component	Specification (Per Tank)	Total for 2 Tanks
Integrated Oil transfer pump	1 HP, food-grade design.	2 x 1 HP = 2 HP
Function	Capable of transferring oil to filtration,	-

	processing, or packaging sections.	
Pipelines and fittings	SS304, welded or sanitary tri-clamp type.	-
Valves	Suction and discharge valves with high-temperature compatible gaskets.	-

8. Electrical & Control System & Power Consumption

Component	Power (Per Tank)	Total Power (2 Tanks)
Agitator Motor	2 HP (approx. 1.5 kW)	3.0 kW
Oil Pump Motor	1 HP (approx. 0.75 kW)	1.5 kW
Heating Element (Assumed)	6 kW	12.0 kW
Total Connected Power	~8.25 kW	~16.5 kW

Note: The actual power consumption will be significantly lower than the total connected power. Heaters cycle on/off, and pumps/agitators may not run simultaneously.

- Local Start / Stop push-button panel on tank.
- Includes:
  - MCB/MCCB for heater and motors
  - Thermal overload relay for agitator motor and oil pump motor
  - Phase-failure and phase-reversal protection
  - Digital temperature controller for heating system
- Wiring provided using moisture- and heat-resistant copper industrial cables housed in SS conduit / cable tray.

9. Safety & Hygiene

- All corners smoothened for easy cleaning and bacterial control.
- No mild-steel or painted parts in oil-contact area.
- Anti-skid pads provided under tank legs for safe installation.
- Vent / breather provision on top to prevent pressure buildup.

10. Maintenance & Cleanability

- Tank designed for CIP and manual wash.
- Heating tube removable for servicing.
- Agitator and shaft accessible for lubrication and cleaning.

- Bottom discharge enables full drainage during cleaning.

11. Duty & Reliability

- Built for continuous 24×7 industrial usage in coconut oil production plants.
- All mechanical and electrical components sized for long service life with minimal maintenance.

12. Warranty

- Minimum 1-year warranty on tank, agitator, heater, motor, and oil pump.

Supplier must commit to availability of spare parts (pump seals, heater, gaskets, valves).

F1.13. Centrifuge

This specification details a high-speed tubular centrifuge suitable for the fine clarification of coconut oil and similar food processing applications.

1. Function & Application

Feature	Description
Primary Function	High-speed clarification of liquids containing fine suspended solids.
Suitable Processes	Coconut oil clarification, and other food, biochemical, or pharmaceutical separation processes requiring very fine impurity removal.
Capability	Capable of separating sub-micron impurities that conventional filtration cannot remove.

2. Operating Principle

Step	Description
Inlet	Product enters the high-speed tubular rotating bowl.
Separation	Under extreme centrifugal force, solids deposit on the rotor wall.
Discharge	Clarified liquid discharges continuously.

3. Technical Parameters

Parameter	Value
Maximum Rotational Speed	Approx. 15,000 rpm
Centrifugal Force	High-G separation

Rotor Diameter	Approx. 105 mm
Rotor Length	Approx. 730 mm
Rotor Volume	Approx. 6 L
Hydraulic Capacity	Approx. 100 – 300 L/hr (Dependent on viscosity & impurity load)

4. Construction & Material

Component	Material/Specification
Product Contact Parts	Stainless Steel SS 304
External Structure	Stainless Steel – industrial polished finish
Rotor	Precision balanced for high-speed operation
Frame	Strengthened design for vibration-free service

5. Motor Specifications (Indian Specific)

Parameter	Specification
Type	High-speed industrial induction motor
Power	Approx. 1.5 kW (≈ 2 HP)
Phase	3-Phase
Voltage	415 V, 50 Hz AC Supply (Indian Standard)
Speed Class	Matched for centrifuge high-rpm transmission system
Cooling	TEFC (Totally Enclosed Fan-Cooled) or equivalent industrial grade
Mounting	Reinforced base for long duty life under continuous high-load operation.
Protection	- Thermal overload protection- Phase-failure and phase-imbalance protection- Short-circuit protection via MCB/MCCB

6. Feed & Discharge Arrangement

Stream	Arrangement
Inlet Feed	Continuous feed through sanitary pipeline.
Clarified Liquid Outlet	Discharges under pressure or gravity, depending on process layout.
Solids Discharge	Solids retained inside the rotor and removed manually during periodic shutdown.

7. Safety Features

Feature	Description
Vibration/Imbalance	Automatic shutdown in case of abnormal vibration or imbalance.
Safety Interlock	Machine does not run unless the protective cover is fully closed.
Physical Safety	Protective enclosure around rotating parts to prevent operator contact.
Rotor Control	Start-up and shutdown designed for controlled acceleration and deceleration.

8. Control & Electrical System

Element	Specification
Local Controls	Start/Stop push buttons, Emergency Stop, Status/fault indication lamps.
Industrial Protection	MCB/MCCB, Thermal overload relay, Phase-failure and undervoltage relay.
Wiring	Factory wiring using moisture- and heat-resistant copper industrial cables.
Electrical Box	Stainless-steel electrical box (IP55 minimum) mounted on the machine body.

9. Installation Requirements

Requirement	Details
Foundation	Must be installed on reinforced industrial floor.
Mounting	Anti-vibration mounting pads and mechanical anchoring required for safe long-term operation.
Commissioning	Vendor must provide alignment instructions during commissioning.

10. Maintenance & Cleanability

- Easy internal access for rotor cleaning and solid discharge.
- All stainless surfaces smooth and wash-down friendly.
- Bearings designed for long life; lubrication points accessible.
- Recommended spare parts list must be provided.

11. Duty & Reliability

- Designed for 24x7 continuous industrial service.
- High reliability under heavy-duty coconut oil clarification

operations.

12. Warranty

- Minimum 1-year warranty on complete machine, including rotor, motor, bearings, and control system.

CENTRIFUGE – 2 (High-Speed Clarification Type)

Specification Category	Parameter	Value	Notes
Technical	Contact Parts	SS304	Food-grade stainless steel
	Bowl Capacity	5.25 Liters	
	Max Bowl Speed	15,000 RPM	
	Max Centrifugal Force	≈1600 g	
	Motor	4 HP slow-accelerating TEFC drive motor	Totally Enclosed Fan Cooled (TEFC)
	Starter	Provided	
	Tools	Full maintenance/tool kit included	
Electrical & Power	Supply	415 V, 50 Hz, 3-phase	Standard industrial supply
	Power Consumption	~3 kW	Estimated operational draw
	Protection	MCB/MCCB + Thermal Overload + Phase Monitoring	Multi-level protection
	Controls & Wiring	As per Centrifuge-1	Standardized control system
Process Interconnections	Installation	In series or parallel	Depending on capacity requirements
	Connection Points	Feed holding tank and clarified-oil receiving tank	Input and Output connection

CENTRIFUGE – 3 (High-Speed Clarification Type)

Specification Category	Parameter	Value	Notes
Technical	Contact Parts	SS304	
	Bowl Capacity	5.25 Liters	
	Max Bowl Speed	15,000 RPM	
	Max Centrifugal Force	≈1600 g	
	Motor	4 HP slow-start TEFC industrial motor	Slow-start feature protects the motor
	Starter	Provided	
	Tools	Set of tools supplied	
Electrical & Power	Supply	415 V, 50 Hz, 3-phase	
	Power Consumption	~3 kW	
	Protection & Wiring	Same as Centrifuges 1 & 2	Standardized power and control setup
Process Interconnections	Flow	Linked with tank-to-tank flow	No product mixing between centrifuge lines

CENTRIFUGE – 4 (High-Speed Clarification Type)

Specification Category	Parameter	Value	Notes
Technical	Contact Parts	SS304	
	Bowl Capacity	5.25 Liters	
	Max Bowl Speed	15,000 RPM	
	Max Centrifugal Force	≈1600 g	

	Motor	4 HP slow-accelerating TEFC drive motor	
	Starter	Provided	
	Tools	Tool kit included	
Electrical & Power	Supply	415 V, 50 Hz, 3-phase	
	Power Consumption	~3 kW	
	Protection & Wiring	All protections and wiring identical to the first three centrifuges	Standardized across the installation
Process Interconnections	Configuration	Dedicated 2-tank loop	Feed holding tank → centrifuge → clarified oil tank

F1.14. Grated coconut machine

Coconut Scrapper (Heavy Duty, Commercial Use)

1. Function & Application

Feature	Description
Primary Function	Grating / scraping fresh coconuts into fine coconut meat.
Application	Commercial food and processing industries.
Operation	Suitable for continuous industrial production with minimal operator effort.

2. Construction & Material

Component	Material / Specification
Fabrication Material	Complete machine fabricated from SS 304 stainless steel.
Included Parts	Scraper housing, blade assembly cover, hopper, fasteners, discharge chute, and body.
Hygienic Design	Food-grade build suitable for wet coconut processing.
Safety Detail	Outer edges rounded for easy wash-down and operator safety.

3. Dimensions & Footprint

Measurement	Value
Overall Size (L × W × H)	21 in × 12 in × 20 in
Footprint	Compact, suitable for workstation-mounted operation.

4. Performance

Parameter	Specification
Capacity	Approx. 100 coconuts per hour
Scraping Speed	1200 RPM
Rotation Direction	Clockwise
Duty	Designed for continuous production without interruption

5. Power & Motor

Feature	Specification
Electrical Supply	Compatible with Single-phase or Three-phase electrical supply.
Voltage	240 V (single-phase) / 415 V (3-phase)
Motor Type	Industrial-grade high-torque scraper motor.
Motor Duty	Designed for continuous duty.
Mounting	Motor mounted on vibration-absorbing frame to reduce noise and wear.

✔ Electrical Connected Load

Item	Rating
Coconut scrapper motor	≈ 1.5 kW – 2.2 kW (depending on phase selection)
Control system	Included within machine load
Total Load per Machine	max 2.2 kW

6. Cutting / Scraping Mechanism

Feature	Detail
Blade Material	Scraper wheel/blade assembly made from hardened stainless steel.
Design	Tear-resistant design suitable for heavy-duty usage.

Maintenance	Blade arrangement is removable for cleaning and sharpening.

7. Electrical Controls & Wiring

Component	Specification / Protection
Control Panel	Supplied with water-resistant local control panel.
Controls	Start / Stop push buttons, Emergency stop, ON indicator.
Motor Protection (Standard)	MCB / MCCB, Thermal overload relay.
Motor Protection (3-phase)	Phase-failure protection (in addition to standard).
Wiring	Factory-fitted moisture-resistant copper wiring routed in SS junction box / conduit.

8. Feeding & Discharge

Feature	Detail
Feed Inlet	Safe coconut feed inlet designed for operator protection.
Discharge	Hygienic SS discharge chute for directing grated output into trays or collection bins.
Hygiene	No external contamination risk during production.

9. Safety Features

- Full blade-guard enclosure to prevent accidental contact.
- Emergency stop within operator reach.
- Non-slip base / rubber feet for stability on wet floors.
- Low-noise transmission system for safe indoor operation.

10. Hygiene & Cleaning

- All food-contact surfaces are SS304 and washable.
- Housing opens for quick cleaning and sanitisation.
- Blade assembly removable without complex tools.

11. Duty Cycle & Durability

- Designed for continuous industrial use 24×7.
- Bearings sealed against moisture and coconut residue.
- Wear components sized for long life and minimal downtime.

12. Warranty & Support

- Minimum 1-year warranty on complete machine, electricals and motor.
- Supplier must provide a list of spare blades and recommended consumables.

F1.15. Machine to cut coconut white meat into slices and chips

1. Function & Application

Feature	Description
Primary Function	Cutting/slicing coconut white meat into chips, flakes, strips, and dice.
Application Scale	Suitable for commercial and industrial-scale coconut processing lines.

2. Construction & Material

Feature	Specification
Material	Complete machine fabricated from Stainless Steel SS 304.
Components	Includes body, hopper, cutting chamber, discharge chute, fasteners, and guards.
Design	Fully hygienic design suitable for direct food contact.

3. Power & Electrical Requirements

Parameter	Value
Operating Voltage	380 V (Three Phase)
Product Power / Connected Load	3.15 kW
Duty Cycle	Continuous industrial duty with high torque output.
Safety Protection	MCB/MCCB, Thermal Overload Relay, Phase-failure and imbalance protection.
Controls	Local control box with Start/Stop switch and Emergency stop.

4. Dimensions & Weight

Parameter	Value

Overall Size (L × W × H)	1150 × 600 × 1140 mm
Machine Weight	Approx. 130 kg
Stability	Stable, vibration-free frame with non-slip leveling pads.

5. Capacity & Output

Parameter	Value
Slicing/Dicing Capacity	600 – 1000 kg/hour
Design	High-throughput for continuous production.
Output Quality	Uniform thickness, clean cut with minimal breakage and fiber pull.

6. Cutting Specifications

The machine features interchangeable cutters to achieve various end-product forms (chips, flakes, dice, strips).

Cutter Type	Standard Set Supplied	Additional/Selectable Sizes
Dicing Cutter	15 mm	8 mm, 10 mm, 15 mm, 20 mm, 25 mm, 32 mm
Slicing Cutter Head	3 mm	2 mm – 6 mm, 9 mm
Cutting Cutter	3 mm	2 mm – 6 mm (all available)
Changeover	Fast and tool-friendly blade changeover.	

7. Performance, Operation & Reliability

Aspect	Detail
Precision	High-precision molds ensure uniform slicing/dicing thickness.
Feeding	Safe feed inlet for trimmed coconut white meat pieces.
Discharge	Stainless-steel discharge chute compatible with bins or conveyors.

Duty & Reliability	Built for 24x7 continuous operation; long-life bearings and gearbox.

8. Hygiene & Maintenance

Aspect	Detail
Cleaning	All food-contact surfaces are washable.
Access	Cutting head is removable for blade washing and changeover.
Design	Smooth internal surfaces prevent residue build-up.

9. Safety & Documentation

Aspect	Detail
Safety	Full guarding around rotating cutters, immediate-reach Emergency stop, Non-slip feet.
Warranty	Minimum 1-year warranty on machine, motor, and electrical system.
Documentation	Supplier must provide: Blade configuration list, Spare-parts list, O&M manual.

F1.16. Metal detector

1. General Specifications (Per Unit)

Feature	Details	Unit
Function	Detect and reject metallic contaminants (Ferrous, Non-Ferrous, Stainless Steel).	1
Application	Desiccated coconut, grated meat, flakes, chips, powder.	-
Throughput Capacity	500 kg/hour	1
Inspection Range	2 meters (effective product scanning length)	1
Aperture Width	800 mm	1
Aperture Height	80 mm	1

Construction Material	SS 304 (Product contact parts)	-
Conveyor	Food-grade, non-metallic belt	1
Reject Mechanism	Auto stop / Alarm (Standard); Optional air-blast / pusher	-
Warranty	Minimum 1 year (complete machine and electronic head)	1

2. Detection Sensitivity (Per Unit)

Metal Type	Detection Sensitivity (Ø)	Unit
Ferrous	0.8 mm	1
Non-Ferrous	1.0 mm	1
Stainless Steel	1.5 mm	1

3. Electrical & Power Requirements

Specification	Per Unit	Total (2 Units)	Unit
Power Supply	230–415 V, 50 Hz	230–415 V, 50 Hz	-
Phase	Single-phase or 3-phase (Vendor Config.)	Single-phase or 3-phase (Vendor Config.)	-
Total Power Consumption	*Not specified (Requires vendor data)*	*Not specified (Requires vendor data)*	-
Controls	Start/Stop, E-Stop, Digital Sensitivity, Audio/Visual Alarm	Local control panels	2
Electrical Protection	MCB/MCCB, Thermal Overload	-	-

4. Quantity Summary

Item	Quantity	Unit
Industrial Metal Detector with Conveyor	2	Units

F1.17. Portable labelling machine

Handheld Industrial Printer (With Encoder & Solvent Cartridge)

Quantity Required: 6 Units

1. Function & Application

Feature	Description
Primary Use	Marking and labeling on packaging, containers, cartons, bags, bottles, pouches, and materials of various shapes.
Mobility	Suitable for production lines requiring mobile on-site printing without fixed CIJ or TIJ systems.

2. Print Capability

Specification	Value
Print Width	Up to 50 mm (Wide format for bold and highly visible marking).
Resolution	Up to 600 DPI (For text, logos, graphics, barcodes, and QR codes).
Supported Media Size	Up to 8.5 × 11 inches (Letter size).
Maximum Media Printing Size	8.5 × 11 inches.

3. Built-in Encoder

Feature	Description
Encoder Type	Integrated high-precision encoder.
Function	Ensures accurate print length and consistency even on curved, uneven, textured, or moving surfaces.
Benefit	Eliminates stretching or distortion during printing.

4. Cartridge & Ink System

Specification	Details
Ink Type	Solvent-based quick-dry cartridge for smudge-proof and permanent print quality.
Suitable Materials	Metal, plastic, glass, wood, paperboard, cardboard, polymer packs, and laminated pouches.
Included	1 solvent inkjet cartridge per printer (minimum).

Supply	

5. Supported Content

Content Type	Features
Basic Content	Text, logos, graphics, barcodes, QR codes, batch information, expiry/manufacturing date, shift code, serial numbers, and counters.
Advanced Features	Multiple language support, variable-data printing, and auto date/time coding.

6. Device Specifications

Specification	Details
Form Factor	Lightweight handheld printer.
Dimensions	25 cm (D) × 19 cm (W) × 10 cm (H).
Display	LED touch screen interface.
Power Source	Rechargeable, long-backup industrial battery for mobility (Cordless operation).
Special Features	Portable, maintenance-free, touch screen, lightweight, user friendly, easy operation, cordless.

7. Electrical & Charging

Feature	Description
Charging	Rechargeable battery with mains charging adaptor.
Protection	Charging port fitted with over-charge and short-circuit protection.
Operation	Cordless operation without external power during printing.

8. Durability & Safety

Feature	Description
Body	Rugged industrial body suitable for factory environments.
Casing	Shock-resistant outer casing for long service life.

Safety	Solvent-sealed cartridge docking to prevent leakage.

9. Accessories / Included Standard Supply

Item	Quantity
Printer (handheld)	1 unit
Solvent ink cartridge	1 unit
Battery	Installed
Charger / power adaptor	1 unit
Touch-screen stylus	1 unit (if applicable)
Cleaning kit and wiping cloth	1 set
User manual (English)	1 unit
Carrying case	Recommended as supplied

10. Maintenance

Feature	Requirement
Print Head	Maintenance-free design – no purging tank or flushing station required.
Cartridge	Replacement requires no tools.
Cleaning	Only with supplied wipes / approved solvent cloth.

11. Warranty

Item	Warranty Period (Minimum)
Printer Body	1 Year
Electronics	1 Year
Encoder	1 Year
Battery	1 Year

✔ Quantity Summary

Item	Description	Quantity

Handheld Industrial Printer with Encoder & Solvent Cartridge	Portable high-resolution coding printer	6 Units

F1.18. Weighing Machines in Factory to Weigh Products

1. Purpose

- Designed for accurate weighing of finished goods, raw materials, and intermediate products in a coconut processing factory.
- Suitable for continuous industrial use, packaging sections, in-process checkpoints, and dispatch.

2. Capacity & Accuracy

Parameter	Value
Maximum capacity	500 kg
Accuracy	50 g / 100 g selectable
Platform size	1000 × 1000 mm
Platform material	SS 202 stainless steel top platter

3. Construction

- Heavy-duty mild steel base frame for durability in industrial environments.
- SS 202 platter for hygienic product contact and easy cleaning.
- High precision strain gauge load cell for stable and repeatable weight measurement.
- Overload protection up to 150% of rated capacity.

4. Display System

- 7-segment bright red LED display
- Digit height: 0.56" (14.22 mm)
- Display digits: 6 digits
- Clear visibility under factory lighting.

5. Controls & Keys

- 4 function keys: TARE, ZERO, MODE, PRINT
- Auto sleep mode for battery saving.

6. Power Supply & Consumption

Parameter	Value (Per Unit)	Total Requirement (6 Units)

Power supply	190V – 270V AC, 50 Hz	190V – 270V AC, 50 Hz
Power consumption (Operating)	5 W (low power)	30 W (6 machines * 5 W/machine)
In-built charger	Yes	Yes
Rechargeable battery	6V / 4.5Ah maintenance-free, supports weighing during power outages.	6 x (6V / 4.5Ah)

7. Operational Environment
   - Temperature range: 0°C to 45°C
   - Humidity: up to 85% RH (non-condensing)
   - Suitable for wet and semi-wet production floor usage.
8. Indicator Housing
   - ABS or metal enclosure, wall-mountable for ease of visibility and safety.
   - Splash-resistant panel suitable for factory wash-down zones.
9. Functional Features
   - Auto zero tracking / manual zero
   - Digital / external calibration
   - Fast response time for continuous weighing activity.
   - Anti-slip feet for stable platform placement.
10. Connectivity & Data
    - RS232 / Printer port (optional) for printout or label system connection.
    - IoT connectivity enabled for:
      - Data logging to factory server / cloud
      - Batch and shift-wise reporting
      - Wireless or Ethernet interface (as per final configuration)
11. Safety
    - Full overload protection for load cell
    - Battery short-circuit and overcharging protection
    - Non-slip platform top to prevent material sliding
12. Maintenance & Cleaning
    - Washable SS 202 platter

- Indicator protected against dust and moisture (IP Rating: IP65 recommended)
- Load cell protected from industrial impact and floor vibration

13. Warranty

- Minimum 1-year warranty on load cell, indicator, and electronics
- Vendor must provide spare parts availability assurance

14. Additional Specifications (Necessary)

Parameter	Value
IP Rating (Indicator)	IP65 (Recommended)
IP Rating (Platform/Load Cell)	IP67 (Recommended)
Certification	OIML R76 / Legal Metrology Certified
Operating Mode	Check Weighing / Simple Weighing

✔ Quantity Schedule

Item	Specification	Quantity
Industrial Weighing Machine	500 kg capacity with IoT connectivity	6 (Six)

F1.19. Hydraulic Lifts 1.5–2 Ton capacity

HYDRAULIC GOODS LIFT SPECIFICATIONS (SCHEDULE 1)

Parameter	Specification
Quantity Required	4 Units
Capacity Range	1.5 – 2 Ton (2000 kg rated load per lift)
Purpose	Vertical transportation of materials, crates, pallets, and goods between G + 1 factory levels.
Duty Cycle	Continuous industrial operation (suitable for 24x7)

Technical Specifications Summary

Parameter	Specification
Rated Load	2000 kg

Capacity	
Number of Levels	G + 1 (Ground + First Floor)
Lifting Height	4500 mm
Overall Lift Height	6000 mm
Platform Size	1500 (W) × 1200 (L) mm
Entry / Exit	Front side loading and unloading
Platform Construction	4 mm thick industrial checkered plate, Anti-skid & self-draining, High resistance to corrosion/impact
Structure & Cabin	Mild Steel (MS) structure and cabin with 125 I-Beam guide rails
Hand Rail Height	900 mm

Lifting and Power System

Component	Specification
Hydraulic Cylinder	63 mm bore & 56 mm rod
Lifting Mechanism	4×4 leaf chain (high tensile strength)
Rollers/Pins/Pulleys	EN-8 hardened material (500–800 N/mm² tensile strength)
Motor	3 HP, 3-phase, AC motor, 1440 RPM (Indian)
Gear Pump	19 LPM
Lift Valve	YUKEN make
Pressure Gauge	Fiable make
Hose	Polyhose (up to 230 bar pressure handling)

Electrical System & Controls

Component	Specification
Control Panel	1 No. per lift
Push Button Control	1 No. per floor

Limit Switch	1 No. per floor (for automatic stopping)
Control Voltage	24 V (for operator safety)
MCB	Schneider or L&T
Contactor	L&T 25 Amps
Overload Relay	L&T 8 Amps

Total Power Requirement

Description	Requirement per Unit	Total Requirement (4 Units)
Motor Power	3 HP	12 HP
Electrical Supply	3-phase, AC	3-phase, AC
Control Voltage	24 V DC	24 V DC

Safety Features

- Automatic stopping via floor-mounted limit switches.
- Emergency stop facility.
- Overload and hydraulic pressure protection.
- Anti-skid platform.
- Lateral movement prevention with rugged I-Beam rails.
- Safety-certified hoses and hydraulic fittings.

Installation and Vendor Scope

Item	Requirement
Installation	Included for all 4 lifts. Full testing & commissioning prior to handover.
Civil Works (Mandatory Vendor Scope)	Vendor must carry out complete civil work, including: Foundation pit/concrete base, Anchoring of MS structure, Grouting/chemical bolts, Masonry/RCC cutting, Floor finishing, Leveling/alignment of lift shaft, and Safety barricading during installation.
Completion	Civil works must be completed before commissioning and handover.

Warranty & Documentation

Item	Requirement

Warranty	Minimum 1-year warranty on full lift system (hydraulic, electrical, mechanical, and power pack).
Documentation	Vendor must supply: Operating manual, Preventive maintenance guide, Spare parts list, and As-built drawings.

F1.20. Crate Washer

Specification for Automatic Industrial Crate Washer

1. Function & Application

Feature	Description
Primary Use	Automatic cleaning, rinsing, and sanitizing of plastic crates used in food processing, packaging, and factory operations.
Cleaning Scope	Removal of debris, stains, oils, dust, and microorganisms.
Efficiency	Designed to minimize water and detergent consumption.
Duty Cycle	Suitable for continuous 24×7 industrial operation.

2. Capacity & Crate Handling

Parameter	Specification	Additional Information
Crate Size Compatibility	Up to 600 × 400 × 300 mm	Customizable based on specific requirements.
Throughput Capacity	300 – 1,000 crates per hour	Depends on contamination level and wash duration settings.
Conveyor Design	Inclined stainless-steel conveyor	Enables efficient water drainage and a space-saving layout.
Conveyor Angle	15° – 30°	Customizable based on factory layout and vertical clearance.

3. Construction & Materials

Feature	Specification
Material	Complete machine in Stainless Steel SS304 or SS316 (Customer option).
Environment Suitability	Highly suitable for wet food-processing environments.

Durability	Hygienic, corrosion-resistant, and machine frame designed for durability and vibration-free operation.

4. Multi-Zone Washing System

The system employs a multi-stage process for comprehensive cleaning:

1. Pre-Wash (Optional): Initial stage for the removal of loose debris before the main wash.
2. Main Wash: High-pressure spray of heated water mixed with detergent via dedicated nozzles.
3. Final Rinse: Spray of clean water or a sanitizing solution to remove detergent residue.
4. Optional Air Knife Drying: Hot air or blowers for the removal of residual water before the crate exits the machine.

5. Washing Performance

Feature	Specification
Wash Temperature	Up to 75–85 °C
Spray Pressure	4 – 8 bar
Nozzle Arrangement	Fixed or oscillating nozzles
Cleaning Coverage	100% external surface coverage and internal crate penetration.

6. Water Efficiency & Filtration

Feature	Description
Water System	Closed-loop water recirculation system.
Filtration	Integrated filtration and mesh trapping system for solids & dirt removal.
Consumption	Significantly reduces detergent and fresh water consumption.
Maintenance Access	Easy access for cleaning of tanks and filters.

7. Drive, Power & Control

Component	Specification

Power Supply	3-phase, 415 V, 50–60 Hz (to be confirmed based on location).
Control System	PLC-controlled with HMI touchscreen interface.
Cycle Control	Variable control for wash speed, conveyor speed, temperature, detergent dosing, and wash duration.
Automation	Multiple program presets for different crate types/soiling levels + manual override capability.
Safety	Emergency stop buttons at entry and exit points.

8. Operational & Safety Features

Feature	Description
Access & Security	Stainless-steel access doors equipped with safety interlocks.
Thermal Protection	High-temperature thermal shutdown protection.
Pump Protection	Dry run protection for all pumps.
Maintenance Safety	Non-slip platform around the machine for safe maintenance access.
Electrical Protection	IP-rated electrical enclosure suitable for wash-down zones.

9. Installation Requirements

Requirement	Provision
Utilities	Water inlet, steam/heater connection, and drain line provisions required at the installation site.
Foundation	Steady, level foundation is required for vibration-free operation.
Footprint	Machine footprint to be sized according to required capacity and factory layout.
Documentation	Supplier must provide detailed piping layout and cable routing plan.

10. Maintenance

- Access: Tool-free access for routine cleaning of nozzles and filters.
- Cleaning: Wash tanks and pipelines are designed for easy Clean-In-Place (CIP) or foam wash procedures.
- Components: Utilizes stainless-steel bearings and corrosion-resistant fasteners for longevity.

11. Warranty & Support

- Warranty: Minimum 1-year warranty on the complete machine, including pumps, electrical controls, and the conveyor system.
- Training: The supplier must provide comprehensive training for both operators and the maintenance team.

✔ Additional Recommended Tender Notes

The successful vendor must provide the following details and provisions:

Item	Requirement
Consumption Data	Specification of detergent consumption per hour, water footprint (Liters/hour), and connected electrical load (kW).
Spares	Provision of spare nozzles, filters, gaskets, and a complete recommended spare parts list.
Technical Drawings	Provision of: General Arrangement (GA) drawing, Piping and Instrumentation Diagram (P&ID), Electrical Single Line Diagram (SLD), and a comprehensive Commissioning Protocol.

F1.21. Roasting Machine

1. Industrial Roasting Machine (General Purpose)

Parameter	Specification	Notes
Function	Uniform heat roasting of powders, kernels, granules, spices, etc.	Ensures even roasting without burning.
Rated Throughput	100 kg/hour	Continuous automatic roasting.
Heating Uniformity	±2°C temperature deviation	Across the batch.
Material	Stainless Steel (SS304)	Roasting chamber and

(Contact)		product-contact parts.
Material (Frame)	Mild Steel (MS)	With heat-resistant paint & powder-coated finish.
Motor Power	2 HP	
Operating Voltage	220 V AC, 50 Hz	Factory-fitted industrial wiring.
Heating System	Vendor technology (Electric / Diesel / LPG / Induction / Steam coil)	Digital temperature controller; adjustable range.
Automation	Auto temperature control, Timer adjustment, Start/Stop panel	Optional VFD for drum speed control.
Drum/Agitation	Rotating drum / paddle / auger (model dependent)	Prevents burning, sticking, and uneven roasting.
Approx. Weight	200 – 300 kg	
Safety	Thermal overload protection, Earthing, Emergency stop	MCB / Overload relay included.
Warranty	Minimum 1-year	Full machine, including motors, heaters & controls.

2. Coconut Chips Roasting Machine (Specialised)

Parameter	Specification	Notes
Function	Specifically for roasting coconut chips / toasted coconut pieces	Optimised to maintain crispness, flavour, and colour.
Rated Throughput	100 kg/hour	Sliced coconut chips.
Roasting Method	Uniform hot air circulation	Maintains moisture removal & crisp texture without darkening.
Agitation	Drum/paddle gentle tumbling system	Prevents chip breakage.
Material (Contact)	Stainless Steel SS304	All food-contact areas, including hopper and discharge chute.

Material (Frame)	MS powder coated / heat-resistant finish	Inspection window for batch monitoring.
Motor Power	2 HP	
Operating Voltage	220 V AC, 50 Hz	
Heating Type	Vendor capability (Electric / Gas / Hot air)	Forced hot-air circulation blowers for consistent colour/texture.
Automation	Fully automatic roasting cycle, Adjustable drum speed	Auto buzzer/timer completion alert; compatible with hopper conveyors.
Hygiene	Tool-less drum access, Smooth SS inner surfaces	Food-grade weld and finish.
Safety	Double-layer body (reduced surface heat), Emergency button, Thermal overload	IP-rated control panel.
Warranty	Minimum 1-year	Heating system, motor, panel & structural body.

-----Combined BOQ Summary

Item	Capacity	Power	Body Material	Quantity
Industrial Roasting Machine	100 kg/hr	2 HP	SS304 + MS	As per BOQ
Coconut Chips Roasting Machine	100 kg/hr	2 HP	SS304 + MS	As per BOQ

F1.22. Jacketed kettles with agitators

1. General Overview

Parameter	Specification
Quantity	2
Function	Heating, mixing, emulsifying, and blending of food-grade liquids/semi-solids.
Applications	Coconut milk, syrup, nutritional blends, beverages, creams, viscous mixtures.

Suitability	Sanitary food processing plants with continuous production.
Effective Capacity	1000 Litres
Total Volume	>1000 Litres (to prevent overflow during agitation)
Orientation	Vertical cylindrical
Installation	Floor-mounted (skid / leg stand design)
Estimated Weight	≈ 180 – 300 kg (configuration dependent)

2. Construction & Materials

Component	Material Specification	Finish / Design
Product Contact Parts	Stainless Steel SS304 or SS316L (Food Grade)	Internal: Mirror-polished $\le 0.6 \mu m$ Ra (Hygienic)
Tank Body, Jacket, Agitator	SS304/SS316L	External: Semi-matte / polish
Outer Shell / Cladding	Stainless Steel (Industrial Finish, SS304 for heat cladding)	-
Bottom	Conical or dish-end bottom	For complete drainage and CIP compatibility
Gaskets & Seals	Food-grade (EPDM / PTFE)	-

3. Heating System (Jacket)

Feature	Specification
Type	Double-layer jacketed heating with insulation
Heating Medium	Compatible with steam / hot water / oil circulation
Temperature Range	Ambient to $0–100^\circ C$ or as per process requirement
Insulation	High-density mineral wool or PU insulation (minimizes heat loss)
Cladding	SS304 outer cover (Heat-resistant)

4. Agitation / Mixing System

Feature	Specification
Motor Power	3 HP
Shaft & Blades	SS304/SS316L
Mixing Type	Homogenizer / emulsifier / dispersion / paddle (as per product)
Speed Control	Fixed or VFD-controlled (Variable Frequency Drive - Recommended)
Product Compatibility	Suitable for high-viscosity and shear-sensitive products

5. Control & Safety Systems

Category	Feature	Details
Temperature Control	Controller	PID / Digital temperature controller
	Sensor	Food-grade PT-100 sensors
	Safety	Auto heat cut-off when set temperature is achieved
Electrical Input	Voltage	110 / 220 / 380 / 440 V (Plant Standard: 415 V, 3-phase Recommended)
	Frequency	50 Hz
Local Panel	Enclosure	Stainless-steel (IP55+)
	Controls	Start / Stop, Temperature control, Agitator motor controls, Emergency stop
	Protection	Overload & short-circuit protection
Safety Features	General	Emergency stop button, Over-temperature protection
	Vessel	Pressure relief valve, Vacuum vent provisions
	Operator	Safety guard on agitator, Thermal insulation on jacket

6. Vessel Features & Utility Piping

Feature	Specification / Material
Pressurized	Designed for pressurized operations where required

Operation	(Pressure relief valve included)
Internal Access	Manhole for inspection and access
Sampling	Sample valve (SS sanitary) for process sampling
Inlet/Outlet Ports	SS304/316L sanitary tri-clamp connections
Top Ports	Agitator mounting, Ingredient addition, Vent, CIP inlet
Bottom Outlet	SS sanitary valve for complete discharge
Jacket Ports	Steam / hot oil / hot water inlets & outlets

7. Hygiene and Maintenance

Feature	Requirement
Cleaning	Designed for CIP (Clean-In-Place) compatibility
Internal Surface	Smooth inner surfaces to avoid residue
External	Washable motor guard and external body

8. Warranty & Support

Item	Requirement
Warranty	Minimum 1-year on complete tank, motor, gearbox, jacket, and control panel
Support	Spare parts and technical support must be assured

9. Included Standard & Optional Accessories

Accessory	Standard/Optional	Details
Homogenizer / Agitator	Standard (Included)	Food-grade SS
Safety valve	Standard (Included)	On pressure jacket
Temperature sensor & controller	Standard (Included)	Digital
Sampling valve	Standard (Included)	SS
Sight glass / light	Optional	-
Level indicator	Optional	Float or radar type

F1.23. Pallet Stretch Wrapping Machine

Semi-Automatic Pallet Stretch Wrapping Machine Specifications

1. Function & Application

Parameter	Specification
Function	Wrapping loaded pallets using stretch film to secure goods during transport and storage.
Applicable Industries	Food, beverage, commodity, machinery, chemical, and logistics.
Compatibility	Forklifts, pallet trucks, and warehouse dispatch systems.

2. Capacity & Performance

Parameter	Specification
Wrapping Speed	20–40 pallets per hour
Max Pallet Wrapping Speed	30 pallets per hour (max)
Application Material	Plastic stretch film
Packaging Type	Film wrapping for pallet loads

3. Construction & Dimensions

Parameter	Specification
Overall Dimensions (L × W × H)	2800 × 1650 × 2400 mm
Machine Weight	≈ 550 kg
Design Grade	Semi-Automatic
Film Carriage	Pre-stretch 250% – 300% (for maximum film utilization and cost efficiency)

4. Power & Electricals

Parameter	Specification
Power Consumption	1.35 kW

Voltage	110 / 220 V (single phase) — *site supply to match vendor configuration*
Drive Type	Electric with friction wheel drive
Core Electronics	PLC-based control panel

5. Film & Wrapping Specifications

Parameter	Specification
Maximum Film Width	500 mm
Film Thickness Range	0.04 – 0.12 mm
Film Roll Compatibility	Standard industrial stretch film
Film Tension	Adjustable

6. Operating Controls & Usability Features

Category	Features
Controls	PLC panel with control settings, Variable wrapping speed control, Film overlap/wrap height programmable, Adjustable top and bottom wrapping turns, Emergency stop button, Soft-start and soft-stop for load stability.
Usability	Easy operation and low maintenance, Automatic cycle start on button press, Compatible with a wide range of pallets and load shapes, User-friendly HMI / control switches, Stable wrapping of light and heavy-weight pallets.

7. Safety & Protection

- Overload protection on motors
- Low-voltage and short-circuit protection
- Safety stop if film breaks
- Safety buzzer before rotation starts
- Forklift-friendly design for safe movement of machine

8. Core Components

- PLC control
- Heavy-duty turntable and column structure
- Friction-wheel drive for carriage movement

- High-durability roller chains / guides
- Industrial wiring with cable protection

9. Warranty & Support

Parameter	Specification
Warranty	12-month warranty on full machine, motors, PLC and mechanical systems.
Vendor Support Requirements	Machinery testing report, Online/remote technical support during installation & commissioning, Free spare parts kit (standard supply recommended).

10. Recommended Installation Conditions

- Solid concrete floor for turntable stabilization
- Adequate space for pallet entry through forklift / pallet truck
- Electrical protective earthing at installation point

Schedule G

Sl No	Machinery Details	Qty
01	Quality Control (QC & QA Lab) Setup	01
02	Industrial Air Conditioning	01
03	DG Set 320 kVA	01

G1. QUALITY CONTROL (QC & QA LAB) SETUP

Sl. No	Equipment	Qty	Key Technical Specifications	Purpose in Coconut/Food QC
G1.1	Analytical Balance	1 No.	Capacity: 200–300 g; Readability: 0.1 mg; Internal calibration; SS pan; LCD display; Repeatability $\le$0.1	Precise measurement for chemical analysis, sample preparation, and moisture/ash determination.

			mg; GLP/GMP compliant	
G1.2	Precision Balance	1 No.	Capacity: $\ge$10 kg; Readability: 1 g; External calibration; Rugged industrial type	Measuring bulk samples for milling yield, batch preparation, or higher weight ingredient checks.
G1.3	Moisture Analyzer (Halogen)	1 No.	Capacity: 50–100 g; Readability: 0.001 g; Halogen heating; Auto shut-off; GLP compliant	Rapid and accurate determination of moisture content in coconut powder, desiccated coconut, and other food products.
G1.4	Hot Air Oven	1 No.	Temp range: Ambient to 300°C; Capacity: 90–150 L; PID controller; SS inner chamber; Uniform air circulation	Used for moisture determination (official method), drying glassware, and sterilization.
G1.5	Soxhlet Fat Extraction Unit	1 Set	Six-place unit; Heating mantle included; Borosilicate glassware; AOAC compliant	Determining the total fat/oil content in coconut products (e.g., desiccated coconut, coconut flour).
G1.6	Bench Top pH Meter	1 No.	Range: 0–14 pH; Accuracy: $\pm$0.01 pH; ATC; Minimum 3-point calibration	Measuring the acidity/alkalinity of coconut milk, coconut water, and other liquid food samples.
G1.7	Digital Refractometer	1 No.	Range: 0–85 °Brix; Accuracy: $\pm$0.1 °Brix; Automatic temperature compensation; Food-grade	Measuring the total soluble solids (Brix) in coconut water, coconut syrup, and liquid concentrates.
G1.8	Digital Titration Setup	1 Set	Motorized burette; Accuracy $\pm$0.1%; Magnetic stirrer included; Suitable for FFA & peroxide value	Performing titrations, specifically for Free Fatty Acids (FFA) and Peroxide Value (PV) in coconut oil.
G1.9	Oil Quality Testing Kit	1 Set	Accessories for FFA, Peroxide Value, Iodine Value, Smoke Point; BIS / AOAC methods	Comprehensive assessment of key quality parameters for coconut oil and other

				extracted fats.
G1.10	Laboratory Grinder	1 No.	SS contact parts; Fine grinding up to 100 mesh; Suitable for food samples	Preparation of solid samples (e.g., coconut cake, spices) for moisture, fat, or other chemical analysis.
G1.11	Laboratory Refrigerator	1 No.	Capacity: 300–400 L; Temp range: 2–8°C; Digital display	Storage of chemical reagents, standards, and temperature-sensitive samples.
G1.12	Water Distillation / RO Unit	1 No.	Output: 5–10 L/hr; Conductivity <5 µS; Wall mounted / floor standing	Supply of purified/deionized water essential for preparing solutions and conducting accurate chemical tests.
G1.13	Fume Hood / Exhaust System	1 No.	Chemical-resistant construction; Blower & ducting; Face velocity as per lab safety norms	Safety measure for handling volatile solvents (like petroleum ether/hexane for fat extraction) and strong acids/bases.
G1.14	Desiccator	1 No.	Vacuum or non-vacuum type; Suitable for moisture and drying tests	Storage of samples and chemicals to prevent re-absorption of moisture after drying/weighing.
G1.15	Magnetic Stirrer with Hot Plate	1 No.	Digital temperature control; Chemical-resistant top plate	Heating and stirring solutions, essential for dissolving reagents and sample preparation.
G1.16	Water Bath (Digital)	1 No.	Capacity: 5–10 L; Temp range: Ambient to 100°C; Digital controller	Maintaining a constant temperature for various reactions, incubations, and sample conditioning (e.g., oil melting/preparation).
G1.17	Laboratory Glassware Set (Class-A)	1 Set	Volumetric flasks, burettes, pipettes with filler, beakers, conical flasks, measuring cylinders	Essential calibrated glassware for accurate volume measurement in titration and standard preparation.

G1.18	Calibration Weights Set	1 Set	E2 / F1 class; Suitable for analytical & precision balances	Periodic calibration and verification of the accuracy of both the analytical and precision balances.
G1.19	Chemical Storage Cabinet	1 No.	Acid & alkali resistant; Ventilated design; Lockable	Safe and segregated storage of hazardous and general laboratory chemicals.
G1.20	SS Sample Trays & Containers	Lot	Food-grade stainless steel; Suitable for oven drying & storage	Durable, non-reactive containers for handling and storing food samples, especially during drying processes.
G1.21	Laboratory Sieve Set	1 Set	Mesh sizes: 60–120; SS construction	Particle size analysis, especially for coconut flour or desiccated coconut grading.
G1.22	Digital Probe Thermometers	2 Nos.	Range: –50 to +300°C; Food & laboratory grade	Checking the temperature of equipment (oven, water bath) and samples/products.
G1.23	Timers / Stopwatches	2 Nos.	Digital; Count-up & countdown	Accurate timing of test procedures, reactions, and drying periods.
G1.24	UPS / Voltage Stabilizer	1 Set	Suitable capacity for balances, pH meter, moisture analyzer & titrator	Protecting sensitive electronic equipment from power fluctuations and ensuring stable operation for accurate results.

SUMMARY & SCOPE

- Total items: 24
- Category: Minimalistic but Complete QC Lab for Basic Coconut & Food Processing
- Coverage: The list covers essential tests for Moisture Content, Oil/Fat Content, Oil Quality (FFA, PV, IV), pH, Brix (Soluble Solids), Titration Chemistry, alongside necessary Sample Preparation, Safety, and Audit Compliance infrastructure.
- Compliance: Equipment specifications are generally compliant with

GLP/GMP and methods like AOAC/BIS for reliable results.

- Expandable: The setup provides a solid foundation and can be easily upgraded to include Microbiology testing, Kjeldahl protein analysis, and NABL (National Accreditation Board for Testing and Calibration Laboratories) compliance in a subsequent Phase-2 expansion.

G2. INDUSTRIAL AIR CONDITIONING

Section: Design, Supply, Installation, Testing & Commissioning of Cold Storage Room (Fruits & Vegetables)

1. Scope of Work

-
- The scope of this tender includes design, engineering, supply, installation, testing, and commissioning of a prefabricated cold storage (walk-in chiller) suitable for storage of fruits and vegetables. The system shall be designed for reliable operation under Indian tropical conditions and suitable for continuous commercial use.
-
- The scope broadly includes:

Component	Description
Prefabricated Insulated Cold Room	PUF panels
Refrigeration System	Air-cooled
Cooling Units	Evaporator units and condensing units
Electricals & Controls	Electrical control panels and controllers
Accessories	Doors, insulation, and general accessories
Installation	Interconnecting piping, insulation, testing, and commissioning

- 2. Design Parameters (Basis of Design)

Parameter	Specification
Cold Room Internal Size	Approx. 27 ft (L) × 38 ft (W) × 12 ft (H)
Ante Room	Not applicable
Application	Fruits & vegetables
Room Operating Temperature	+2°C to +15°C

Ambient Design Temperature	+43°C
Product Entry Temperature	Up to +30°C
Pull-down Time	Maximum 24 hours
Refrigeration Type	Air-cooled system

- 3. Insulation & Civil Interface Specifications3.1 Wall & Ceiling Panels

Parameter	Specification
Insulation Material	Polyurethane Foam (PUF)
Panel Thickness	Minimum 100 mm
Density	Minimum 40 ± 2 kg/m³
Panel Jointing	Cam-lock system (wall-to-wall, ceiling-to-ceiling)
Finish (Exposed Side)	Pre-painted, powder-coated GI sheet
Finish (Unexposed Side)	Pre-painted, powder-coated GI sheet
Thermal Conductivity	≤ 0.024 W/m•K

- 3.2 Floor Insulation

Parameter	Specification
Insulation Thickness	Minimum 60 mm PUF slabs
Note	Final floor finish (concrete / Kota stone) to be in client’s scope unless specified otherwise

- 4. Door Specifications

Parameter	Specification
Type	Insulated hatch / hinged door
Clear Opening Size	Approx. 1000 mm × 2100 mm
Construction	PUF insulated door with food-grade finish
Accessories	Heavy-duty hinges, locking handle, door heater (if required), gasket sealing
Thermal Leakage	Minimal, suitable for chiller application

- 5. Refrigeration System – Technical Specifications5.1 Refrigeration

Capacity

Parameter	Specification
Cooling Capacity	Approx. 8.6 kW
Evaporating Temperature	Around –5°C
System Configuration	Dual system redundancy preferred (two units operating)

- 5.2 Compressor Unit

Parameter	Specification
Type	Semi-hermetic reciprocating compressor
Duty	Continuous industrial refrigeration
Application	Medium-temperature chiller
Power Supply	3-phase

- 5.3 Refrigerant

Parameter	Specification
Type	Environment-compliant refrigerant suitable for chiller applications (e.g., R404A or equivalent)

- 6. Condensing Unit Specifications

Parameter	Specification
Type	Air-cooled condensing unit
Coating	Epoxy-coated for corrosion resistance
Configuration	Minimum 2 condensing units (for redundancy / load sharing)
Installation Location	Outdoor / ventilated area
Mounting	On suitable foundation / frame (client scope unless specified)

- 7. Evaporator (Unit Cooler) Specifications

Parameter	Specification
Construction	Stainless steel / corrosion-resistant casing
Fans	Minimum 2 axial fans, approx. 400 mm diameter
Air Throw	Suitable for uniform cooling of full room volume

Defrosting	Compatible with standard defrost methods
Hanging Arrangement	Included

- 8. Electrical & Control System

Parameter	Specification
Power Supply	380 V – 420 V, 3 Phase, 50 Hz
Control Panel	Dedicated control panel for each refrigeration system
Controller Features	Digital temperature controller, Temperature indication & set-point control, Safety cut-outs
Expansion Device	Thermostatic / electronic expansion valve
Electrical Protections	Overload, short-circuit, phase protection

9. Installation, Testing & Commissioning

-
- The scope shall include:

Activity	Details
Panel & Door Installation	Installation of PUF panels and doors
Unit Installation	Installation of condensing and evaporating units
Piping	Refrigeration copper piping between indoor & outdoor units
Insulation	Suction line insulation
Drainage	Drain piping up to reasonable distance
System Testing	Pressure testing with nitrogen, Vacuumization, Refrigerant charging
Commissioning	Trial run and commissioning
Performance Check	Performance testing to achieve specified temperature

10. General Technical Requirements

Requirement	Details
Equipment Status	All equipment shall be new, unused, and of latest design
Design Standard	System shall be designed for energy efficiency and reliability

Compliance	Components shall comply with relevant IS / ISO standards
Workmanship	Workmanship shall be suitable for food storage applications
Bidding Note	The bidder may offer equivalent or superior components

11.Scope Inclusions – Cold Storage Room

- The scope of work for the Cold Storage / Walk-in Chiller Room shall include design, supply, installation, testing, and commissioning of the complete system, including the following:

Scope Area	Specific Inclusions
Design & Engineering	Based on specified room dimensions, temperature range, ambient conditions, and product requirements.
Insulated Panels	Supply of prefabricated PUF insulated wall and ceiling panels, including cam-lock systems, accessories, suspension profiles, and flashing.
Floor Insulation	Supply and installation of PUF floor insulation slabs as specified.
Doors	Supply and installation of insulated cold storage door(s) complete with hardware, gaskets, and fittings.
Refrigeration System	Supply of air-cooled refrigeration system, including condensing units, evaporator (unit coolers), compressors, fans, and associated components.
Controls	Supply and installation of electronic control panels, digital temperature controllers, sensors, and safety protections.
Unit Placement	Installation of evaporator hanging arrangements and outdoor condensing unit placement.
Piping	Refrigeration copper piping between indoor and outdoor units, including suction line insulation.
Drainage	Drain piping for condensate water up to the specified internal length.
System Preparation	Pressure testing of refrigeration piping using nitrogen and vacuumization of the refrigeration system.
Commissioning	Initial refrigerant charging and system balancing. Electrical interconnections between refrigeration components and control panels (excluding main power incomer).

Testing & Handover	Testing, trial run, and commissioning of the cold storage room to achieve and maintain the specified temperature range. Performance verification, including pull-down time and temperature stability checks. Handing over of the cold storage room in fully operational condition.

G3. DG SET 320 KVA

(CPCB IV+ COMPLIANT) - SPECIFICATION SHEET

General Specifications	Details
Rating (Prime Power)	320 kVA / 256 kWe
Phase	3-Phase
Voltage	415 V
Frequency	50 Hz
Power Factor	0.8 lagging
Rated Speed	1500 RPM
Output Current	445 A
Performance Class	ISO 8528-5 G2

1. ENGINE SPECIFICATIONS

Parameter	Specification
Type	6-cylinder, in-line, turbocharged, and charge-air cooled
Cooling	Liquid-cooled (50:50 premix coolant)
Displacement	8.9 L
Bore × Stroke	114 × 145 mm
Compression Ratio	16.7:1
Starting	24 V DC electric start
Fuel	High speed diesel
Certified Output	395 HP (for rated power)

Combustion Air Intake (@100% load)	$\sim$689 cfm
Mean Piston Speed	7.2 m/s
Lube Oil Type	CK4 grade
Lube Oil Sump Capacity	19.97 – 30 L
Total Lubrication Capacity	31.7 L
Coolant System Capacity	36 L
Exhaust Pipe Diameter	6 in
Exhaust Temperature	$\sim$539 °C

2. ALTERNATOR SPECIFICATIONS

Parameter	Specification
Type	Brushless, self-excited, screen-protected
Insulation Class	H-class
Voltage Regulation	±1 %
Features	Low waveform distortion, High motor-starting capacity

3. ENCLOSURE AND ACOUSTICS

Parameter	Specification
Compliance	CPCB-IV compliant
Maximum Sound Level	$\le$ 75 dBA @ 1 m (75 % load)
Enclosure Type	CRCA powder-coated weatherproof
Insulation	Fire-retardant rockwool
Features	Lockable access doors, Lifting hooks

4. DIMENSIONS & WEIGHT

Parameter	Specification
Overall Dimensions (L × W × H)	5000 × 1500 × 2465 mm
Cool-pack Engine Weight (wet)	918 kg

Enclosed DG Weight	approx. 4500 kg

5. OTHER KEY SYSTEMS

System	Specification / Features
Base Frame	Heavy MS skid-mounted frame
Vibration System	Anti-Vibration Mount (AVM) pads included
Fuel System	Integrated fuel tank in base frame ($\sim$515 L capacity), Fuel level indicator, Drain provision, External filling port
Batteries	2 × 12 V heavy-duty starting batteries, Battery leads and base included
Silencer	Industrial low-noise exhaust silencer with rain cap, High noise-attenuation type
Control Panel	Weatherproof steel manual panel, Microprocessor-based digital controller (LCD), MCCB integrated
Controller Features	Voltage, current, frequency display, Engine oil pressure, coolant temp, fault history, Overload, short-circuit, engine protection, Remote start/stop, AMF-compatible port
Warranty	Minimum 1-year warranty (engine, alternator, control system, enclosure, accessories)

SUPPLY PACKAGE (MANDATORY INCLUSIONS)

Component	Status
Integrated fuel tank	$\checkmark$ Included
Batteries and leads	$\checkmark$ Included
Silencer	$\checkmark$ Included
AVM pads	$\checkmark$ Included
Acoustic enclosure	$\checkmark$ Included
Manual control panel	$\checkmark$ Included
First fill of lube oil	$\checkmark$ Included

VENDOR SCOPE OF WORK (INSTALLATION & COMMISSIONING)

Category	Mandatory Tasks
Mechanical / Electrical	Supply, installation, commissioning, and hand over in fully operational condition. Positioning, alignment, Fuel line/Exhaust pipeline connection, Battery cabling/termination, Output panel termination, Testing, and Commissioning.
Civil Works	Complete construction of basement/foundation for DG set. Anti-vibration–compatible RCC foundation as per manufacturer guidelines. Cable trench provisions where required.
Earthing	DG body earthing, Neutral earthing, Earth pits and earth bus bar installation, Earth resistance testing and certification.
Handover Condition	Only after successful load-test demonstration and earthing compliance approval. Free commissioning support and operator training to be provided.

Schedule H

Sl No	Machinery Details	Qty
01	Training Skill Development Setup	01

H1. TRAINING SKILL DEVELOPMENT SETUP

Training & Skill Development Setup

Feature	Specification
Built-up Area	16 m × 16 m (≈ 256 sq.m | 2,755 sq.ft)
Seating Capacity	120 participants + 10% extra provisions
Usage	Classroom training, skill development programs, workshops, presentations

1. Space Planning & Seating Layout Seating Requirement

Requirement	Quantity (Persons)
Base Seating	120
Extra Provision (10%)	12

Total Seating	132

Table Configuration (Single-Side Seating)

- Principle: Each table seats 4 people on one side only (classroom style).

Recommended Table Size (per table)

Dimension	Measurement
Length	1800 mm (6 ft)
Width	600 mm (2 ft)
Height	750 mm (standard desk height)

- Accommodation: This size comfortably accommodates:
  - 4 chairs (≈ 450 mm per person)
  - Writing space + laptop/notebook usage
  - Proper legroom without congestion

Number of Tables & Chairs

Item	Calculation	Quantity
Total Seating Required	132	132
Seating Per Table	4 persons	4
Number of Tables Required	132 ÷ 4	33 tables
Number of Chairs Required	(Equal to Total Seating)	132 chairs

2. Furniture Specifications Training Tables

Specification	Details
Frame	SS (Stainless Steel) tubular frame, corrosion-resistant
Top	Waterproof, scratch-resistant, high-density laminated or compact board
Finish	Matte / anti-glare surface suitable for writing
Edge Protection	Rounded edges with protective beading
Load	Minimum 80–100 kg per table

Capacity	
Durability	Suitable for continuous institutional use
Maintenance	Easy to clean, moisture-resistant

Chairs

- Ergonomic training chairs
- Heavy-duty plastic or cushioned seating
- Powder-coated or corrosion-resistant frame
- Stackable type preferred
- Anti-skid rubber shoes

3. Projector – Technical Specifications (Only)

Feature	Specification
Display Technology	LCD (3LCD)
Native Resolution	4096 × 2160 pixels
Supported Screen Resolution	3840 × 2160 pixels
Aspect Ratio	16:9
Image Contrast Ratio	Minimum 35,000:1
Refresh Rate	Up to 240 Hz
Noise Level	≤ 36 dB
Wireless Connectivity	Wi-Fi (IEEE 802.11 a/b/g/n/ac)
Operating Voltage	100 V AC
Power Consumption	Approx. 301 W
Mounting Type	Tabletop mount (ceiling-mount compatible)
Form Factor	Portable
Control	Remote control included

Connectivity Interfaces	Special Functional Features
HDMI	Automatic vertical and horizontal keystone

	correction
USB 2.0 Type-A	Quick Corner image adjustment
3.5 mm Audio	Built-in speaker
	High-performance display / game mode
	Long-life light source

Other Training Aids

- Instructor dias/podium with wiring provision
- Whiteboard / projection screen (as required)
- Ceiling-mounted or wall-mounted projector arrangement
- Audio output provision (expandable)

4. Air Conditioning System

- Comfort cooling suitable for 132 occupants
- Split AC / Cassette AC configuration (as per heat load)
- Uniform air distribution
- Low-noise indoor units
- Independent control switches
- Electrical and drainage piping included

5. Building & Civil Construction Scope (Inclusive)Structural System

Component	Specification
Structure	Steel posts / columns with bracing
Roofing	Metal decking sheets with insulation
Walling	Prefabricated panels (Aerocon panels or equivalent)
Flooring	Industrial-grade finished flooring suitable for high footfall

Interior Works

- False ceiling (grid / gypsum / equivalent)
- Interior and exterior painting
- Acoustic considerations for training environment
- Proper ventilation provisions

Doors

- Two (2) doors
- Industrial / flush type doors
- Suitable width for crowd movement
- Hardware and fittings included

6. Electrical & Utility Works (Complete)
   - Internal electrical wiring
   - LED lighting suitable for classroom use
   - Power sockets for projector and accessories
   - Switchboards and distribution boards
   - Earthing and safety protection
   - Provision for future AV expansion
   - All cabling concealed and neatly finished

7. Safety & Compliance
   - Fire-retardant materials where applicable
   - Emergency lighting provision
   - Clear aisle spacing for evacuation
   - Compliance with applicable electrical and building safety standards

8. Scope Inclusion Statement

The scope includes design, supply, fabrication, installation, testing, and commissioning of the complete Training & Skill Development Setup, including civil works, furniture, electricals, air conditioning, and teaching infrastructure, on a turnkey basis.

Schedule I

Sl No	Machinery Details	Qty
01	Material Handling Equipments	01

I 1. MATERIAL HANDLING EQUIPMENT

SUPPLY, INSTALLATION & COMMISSIONING MATERIAL HANDLING EQUIPMENT (MHE)

1. Scope of Work

The scope of this tender covers the supply and commissioning (wherever applicable) of Material Handling Equipment required for food-processing and warehouse operations. The equipment should be suitable for hygienic food-grade environments and designed for continuous industrial use.

2. Material Handling Equipment – Quantity and Technical Specifications

S.No.	Equipment Name	Qty	Key Specifications
Manual Handling Equipment			
2.1	Manual Pallet Jack	1	2.5 Ton Capacity. Heavy-duty, PU wheels, Fork approx. 1150 mm (L) × 550 mm (W).
2.2	Wide Pallet Truck	1	2.5 Ton Capacity. Extended fork width approx. 685 mm, length 1220 mm. PU wheels.
2.3	Heavy-Duty Pallet Jack	1	3 Ton Capacity. Reinforced structure, PU wheels, heavy-duty hydraulic system.
2.4	Pallet Jack with Hand Brake	1	2.5 Ton Capacity. Integrated hand braking system for ramps. PU wheels.
2.5	Hand Pallet Scale	1	2000 kg capacity. Integrated electronic weighing system with digital display.
2.6	Pneumatic Hand Trucks	1	200–300 kg capacity. Two-wheel, mild steel, pneumatic air-filled tyres.
Platform Trucks & Carts			
2.7	Heavy-Duty 6-Wheel Platform Truck	1	1000 kg min capacity. Mild steel, platform approx. 1200 mm × 750 mm. Anti-slip surface.
2.8	Stainless Steel Platform Truck (SS304)	1	800 kg min capacity. Food-grade SS304, approx. 750 mm × 1200 mm. Corrosion-resistant.
2.9	Stainless Steel Utility Carts	1	300–500 kg capacity. SS304, shelved/flat-top design, swivel castor wheels with brakes.
2.10	Foldable Cage Trolley	1	400–500 kg capacity. SS/MS construction, collapsible sides.
2.11	Industrial Wheelbarrows	1	150 kg min capacity. Heavy-duty, pneumatic wheels, reinforced body.
2.12	Scissor Lift Trolley – Hydraulic	1	350 kg capacity. Adjustable lifting height 300 mm to 900 mm.

Storage & Accessories			
2.13	Warehouse Pallet Racking System	1	Min. capacity for approx. 50 pallets. Two-level, powder-coated finish. Includes anchors & safety locks.
2.14	Plastic Pallets (HDPE)	1	1 Ton min dynamic load. HDPE, 1000 mm × 1200 mm, four-way forklift entry. Hygienic.
2.15	Industrial Storage Bins / Crates	1	40–60 liters capacity. HDPE stackable, smooth internal surfaces.
2.16	Hydraulic Drum Lifter / Tilter	1	Up to 350 kg capacity. Safe lifting, tilting, and pouring for oil drums.
2.17	PVC Conveyor Rollers (Spares)	1	PVC rollers suitable as spares for internal conveyor systems.
2.18	Plastic Dunnage / Floor Grid	1	Interlocking plastic floor grids for wet areas. Min. height 50 mm, anti-slip.
Dock & Safety Infrastructure			
2.19	Dock Leveler – Manual	1	Approx. 6 tons rated capacity. Rugged steel construction, safety lip, anti-slip surface.
2.20	Loading Ramp (MS Fabricated)	1	Min. 10 tons capacity. Approx. 8 meters length. Anti-skid surface, safety curbs.
2.21	Safety Equipment – Warehouse & MHE	1	Floor marking tapes, convex safety mirrors, warning signs, visual safety aids.
2.22	Maintenance Tools & Spares Kit	1	Comprehensive kit for routine MHE maintenance (wheels, bearings, seals, etc.).
2.23	Battery Chargers & Electrical Panel Setup	1	Chargers/panels for BOPT/stackers. Includes protection and cabling.
2.24	2 TON ELECTRIC FORKLIFT (ROUGH TERRAIN)	1	Specifications are given below

The scope broadly includes:

Category	Description

Manual Equipment	Manual material handling equipment
Food-Grade Equipment	Stainless steel food-grade handling equipment
Electric Equipment	Semi-electric and battery-operated handling equipment
Storage Systems	Warehouse storage and racking systems
Dock Infrastructure	Dock handling and loading/unloading infrastructure
Spares & Safety	Safety equipment and maintenance spares

2.24. TECHNICAL SPECIFICATION OF ELECTRIC FORKLIFT 2 TON (ROUGH TERRAIN)

Specification	Requirement
Condition	Brand new, unused
Type	Electric Forklift – Rough Terrain
Product Category	Material Handling Equipment
Applicable Industries	Food & Beverage Factory, Manufacturing Units, Warehouses, Common Facility Centres

- 3.2 Capacity & Performance

Specification	Requirement
Rated Load Capacity	2000 kg (2 Ton)
Load Centre Distance	500 mm
Maximum Lifting Height	Minimum 4500 mm (preferably up to 6000 mm)
Mast Type	2-Stage or 3-Stage Mast
Fork Length	1220 mm
Fork Width	Approx. 70 mm

- 3.3 Power & Drive System

Specification	Requirement
Power Source	Electric
Motor Type	AC Motor
Drive Type	4x4 / AWD (Suitable for rough terrain)

Terrain Adaptability	Indoor flooring, Outdoor pavement, Uneven / rough terrain

- 3.4 Tyres & Mobility

Specification	Requirement
Tyres	Solid / Pneumatic / Rough terrain tyres (as applicable)
Steering	Power assisted steering
Turning Radius	Suitable for warehouse operation

- 3.5 Safety & Ergonomics

Feature	Inclusion
Operator seat	With seat belt
Overhead guard	Yes
Alarms	Horn and reverse alarm
Emergency stop switch	Yes
Lights	LED headlights and taillights
Load backrest	Yes

- 3.6 Electrical System

Specification	Requirement
Battery Type	Industrial traction battery
Battery Voltage & Capacity	Suitable for minimum 6–8 hours operation per charge
Charger	Compatible automatic charger (to be included in scope)

- 3.7 Build & Finish

Specification	Requirement
Chassis	Heavy-duty, suitable for outdoor operation
Finish	Corrosion-resistant painted body
Color	As specified by purchaser

- 3.8 Warranty & Support

Specification	Requirement

Minimum Warranty	18 months from date of commissioning
Service Support	Availability in Andhra Pradesh / South India
Spare parts availability	Minimum 5 years

4. QUANTITY

Sl. No.	Description	Quantity
1	2 Ton Electric Rough Terrain Forklift	1. No.

5. INSTALLATION & COMMISSIONING

Activity	Detail
Delivery & Setup	Forklift shall be delivered, tested and commissioned at site
Training	Supplier shall provide operator training
Documentation	User manual and service manual to be supplied

2. Technical & Eligibility Requirements

Requirement	Details
Experience	Proven experience in manufacturing and/or supplying and installation of food-processing, warehouse, or material handling machinery.
Equipment Status	All equipment supplied shall be new, unused, and of latest design.
Compliance	All load-bearing equipment must comply with relevant Indian Standards (IS), ISO standards, or equivalent international standards.
Material	Stainless steel equipment shall be manufactured using SS304 food-grade material or the OEM standards (where applicable)
Design Criteria	Equipment design shall ensure operator safety, ease of cleaning, corrosion resistance, and long service life.
Support	The bidder shall ensure availability of after-sales service, warranty support, and spare parts.

Chapter – 5

Price Schedule (to be utilized by the bidders for quoting their prices)

Note: In Financial Bid, item wise and schedule wise total bid value to be quoted in INR and online only. Corresponding soft copy of Cost sheet to be uploaded in financial bid. Uploading of Cost sheet along with Technical Bid leads to technical disqualification.

Sch		Description	Qty	Price	Taxes	Other charges	Total Bid Price
A	1	Effluent Treatment Plant	1				
A	2	Rain Water Harvesting Setup	1				
A	3	Water Processing Set up including RO Water tank Plant 8000 LPH along with Sump 50000 KL	1				
B	1	Rooftop Solar Setup 650 Kva	1				
C	1	Electrical Installation & Equipments including 700 KVA transformer	1				
D	1	Coconut Primary Processing: Storage containers attached with Electric chain Hoist system and Coconut Dehusking & Deshelling Setup	1				
E	1	Pairing System Setup with Conveyor	1				
E	2	Coconut Oil Extraction Setup with provision for Testa & Virgin Oil	1				
F	1	Coconut Meat Processing and Milk	1				

		extraction Setup					
G	1	Quality Control (QC & QA Lab) Setup	1				
G	2	Industrial Air Conditioning	1				
G	3	DG Set 320 KVA	1				
H	1	Training Skill Development Setup	1				
I	1	Material Handling Equipments	1				
		Grand Total					

Note: The bidders note that, the prices should include of all costs including supply, installation, training, commissioning and Warranty obligations. The bidders to advised to visit the unit and take actual measurements for installation.

Chapter – 6

Contract Form

BID CONTRACT FORM

Bid contract Agreement made on _____

day of _____. Contract Reference

No:

BETWEEN

The CEO, Andhra Pradesh MSME Development Corporation, 2nd Floor, PVS Towers, Mangalagiri – 522503, Andhra Pradesh, India (hereinafter called “the Purchaser”) on behalf of Godavari Coconut Association, (SPV), Flat 5, Sambunipeta colony, Ward 10, Palakollu, Fhazul Bag Peta, West Godavari, Andhra Pradesh – 534260, the end user constituted as Special Purpose Vehicle under Govt. of India, Ministry of MSME, MSE-CDP guidelines (herein after referred as End User)

and

_____ a company/firm incorporated under the laws of India and having its registered office at _____, who is a successful bidder in the contract (hereinafter called “the Supplier”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Supplier having successful in the Contract, agreed to supply the following machinery as per the tender documents, followed by installation, Testing, Commissioning, Trial Run of Machinery & Equipment, training of staff along with providing Warranty and Maintenance services as per the Contractual obligations to Godavari Coconut Association, (SPV), Flat 5, Sambunipeta colony, Ward 10, Palakollu, Fhazul Bag Peta, West Godavari, Andhra Pradesh – 534260, PAN NO – ABJCS6646R.

Schedule ____consists of __ Machineries

Sl No.	Machinery Details	Qty	Total Price inclusive of all charges as per contractual Agreement in Rupees
01			
02			
03			
04			
05			
	Total Contract Value		‘’

2. **Performance Security**: The Supplier, being the successful bidder is submitted the Performance Security(s) in the form of Bank Guarantee favouring **M/s Godavari Coconut Association**, (SPV), Flat 5, Sambunipeta colony, Ward 10, Palakollu, Fhazul Bag Peta, West Godavari, Andhra Pradesh – 534260 from the

Indian Nationalised Bank having branch in West Godavari as for the following:

Sl No	Amount of Rs. Performance Security	PBG Details	Validity Period

The End User will release the Performance Security to the Seller on successful completion of the contract. The PBG may be encashed if the seller fails to deliver in time, deficiency in services etc.,

3. **Delivery Schedule**: Supply and commissioning to be completed within 120 days on award of the contract.
4. **WARRANTY**: The applicable OEM warranty not less than one year to be provided to supplied items.

SUPPLIER'S RESPONSIBILITY:

Supplier is wholly responsible for supply, installation and other services as per the contractual agreement. For smooth execution the following are to be adhered:

4.1 **Site Inspection**: As the specialized machinery requires proper ergonomics, the supplier should give their designs in advance for site preparation. Regular visits and supervision by Supplier are must as entire responsibility lies on them.

4.2 **Installation precautions**: The Supplier is wholly responsible for the machinery installation as per the OEM guidelines. Proper due care to be taken to avoid any mishap. Proper site preparation, Proper Packing, Planned Transportation, Suitable Insurance, Proper electrification & earthing, Manpower training, etc., will helps in smooth installations. The supplier to ensure and written communication with Purchaser and end-user simultaneously will helps in proper coordination.

4.3 **Machinery User Manuals, Drawings, Flow Charts etc.,** The machinery drawings, flow charts, user manuals, Periodic Maintenance schedules, list of spare parts, any other documents for the smooth functioning of equipment to be supplied by the Supplier. The medium of language is English for this purpose.

4.4 **Obsolete Machinery:** The Supplier to supply the latest machinery or machinery having suitable life and not any obsolete Machinery.

4.5 **Technology Upgradation**: The supplier is under obligation to upgrade in technological developments happened during the Warranty Period.

4.6 **Registered Office in Andhra Pradesh:** The Supplier may open a registered office in Andhra Pradesh and after sales support to be done through this office. Machinery Tax invoicing is on the name of Godavari Coconut Association, (SPV), Flat 5, Sambunipeta colony, Ward 10, Palakollu, Fhazul Bag Peta, West Godavari, Andhra Pradesh – 534260, PAN NO – ABJCS6646R.

4.7 **PAYMENT TERMS**: The Supplier to submit the formal request along with necessary documents as per the contract terms for release of payments to the Purchaser. The Purchaser, ie., The CEO, APMSME Development Corporation to initiate the payment process on receipt of completed documents as per the following manner:

Sl No	Details	Payment Value & Conditions
2.4.1	On signing of Contract	30% of the contractual value
2.4.2	On intimation of Machine readiness	30% of Machinery cost on confirmation from the OEM that machine is ready to dispatch and after demonstration of its working condition to end users or their authorized representative. In case of Imported machinery, payment will be released through conditional Letter of Credit (LC) on shipment from the OEM country of origin.
2.4.3	On Installation of Machinery	30% of the Contractual value on confirmation and submission of requisite documents from End User.
2.4.4	On completion of contract	Balance 10% of the contractual value released on fulfilling of terms & conditions of contract on confirmation and submission of requisite documents from End User.

4.8 In Consideration of the payments to be made by the Purchaser to the Supplier as mentioned, the Supplier hereby covenants with the purchaser to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the contract.

4.9 The Purchaser hereby covenants to pay the supplier in consideration of the provision of the Goods and Services and

the remedying of defects therein, the contract price or such other sum as may become payable under the provisions of the contract at the times and manner prescribed by the contract.

5. Special Conditions: The Supplier to deliver the gods and performance of the services in accordance with time schedule. Any deviation may be dealt in the following manner:

5.1 **Force Majeure**: In the event of unforeseeable circumstances that prevent Supplier from fulfilling the contract, the supplier shall promptly notify the Purchaser for taking remedial actions.

5.2 **Liquidated Damages:** If the Supplier fails to fulfil the contractual obligations, a fine of 1% for week till the completion/termination of contract will be imposed subject to a maximum of 5% of the total contract value. Besides the supplier may be blacklisted as per the existing rules & regulations.

5.3 **Termination Insolvency**: If the Supplier becomes bankrupt or otherwise insolvent prior or during the contract, the Purchaser may terminate the contract as per the law.

6. **Resolution of Disputes**: In the event of any unfortunate dispute, the Purchaser and the Supplier shall make every effort to resolve amicably by direct formal negotiations. If the dispute is not resolved in a month’s duration, either party may seek remedy as per the Arbitration & Reconciliation Act 1996 and Arbitration & Reconciliation (Amendment) Act 2021.

IN WITNESS WHERE OF the Purchaser and the Supplier have caused this agreement to be duly executed by their duly authorized representatives the day and year first above written.

For and on behalf of Supplier For and on behalf of Purchaser

M/s The CEO AP MSME MD or

President/Authorized representative Authorized representative

Firm Seal Office Seal

In the presence of

M/s Godavari Coconut Association,
President

Firm Seal

Chapter – 7

Other Standard Forms, if any, to be utilized by the Purchaser and bidders

Annexure I

APMSMEDC Ref. No.....

Bid Security (EMD) Form

(To be issued by a bank scheduled in India and having at least one branch in Mangalagiri)

Whereas..... (Here in after called "the Bidder") has submitted its bid
Dated ..... (Date) for the execution of..... (Here in after called "the Bid")
KNOW ALL MEN by these presents that WE ..... of..... having our
registered office at..... (hereinafter called the "Bank") are bound unto the CEO, Andhra Pradesh MSME Development Corporation. (hereinafter called "The APMSMEDC") in the sum of ..... for which payment well and truly to be made to the said APMSMEDC itself, its successors and assignees by these presents.

The conditions of this obligation are:

1. If the bidder withdraws its bid during the period of bid validity or

2. If the bidder, having been notified of the acceptance of its bid by the APMSMEDC during the period of bid validity:
   a. fails or refuses to execute the contract form if required; or
   b. fails or refuses to furnish the performance security, in accordance with the bid requirement;
   c. submits fabricated documents

We undertake to pay the APMSMEDC up to the above amount upon receipt of its first written demand, without the APMSMEDC having to substantiate its demand, provided that in its demand the APMSMEDC will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

Place: Date:

Signature of the Bank and seal.

Tender Ref. No.....

Annexure II

Performance Security Form

(To be issued by a bank scheduled in India and having at least one branch in Mangalagiri) To..... (Address of SPV)

WHEREAS..... (Name of Vendor) hereinafter called “the Vendor” has
undertaken, in pursuance of Contract No..... Dated ... (Date), to

supply..... called
“the Contract”.

AND WHEREAS it has been stipulated by you in the said Contract that the Vendor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the Supplier’s performance obligations in accordance with the Contract.

WHEREAS we have agreed to give the Vendor a Guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Vendor, up to a total of Rs. ..... and we undertake to pay you, upon your first written demand declaring the Vendor to be in default under the Contract and without cavil or argument, any sum or sums within the limit of Rs..... (Amount of Guarantee)
as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the ..... day of (Date)

Place:

Date:
Signature and seal of guarantors

Form P-1: Bidder Information, Company Registration Certificate

(on company’s letter head)

1	Name of the organization	
2	Company Registration Certificate No., & Year of Establishment	
3	MSME UDYAM No.	
4	PAN No	
5	GST No	
6	Registered Office Address	Phone/Mobile No e-mail:
7	Manufacturing/Service unit Address	

		Phone/Mobile No e-mail:
8	Manufacturing/Service Unit's address in Andhra Pradesh (if any)	Phone/Mobile No e-mail: No of Support Engineers in AP:
9	Details of Purchasing of Tender document.	On line transfer details UTR No. and date
10	Details of EMD furnished	
11	Previous experience of supply with Govt of Andhra Pradesh and Govt of India (Attach the Experience certificates)	
12	Additional information if any	

Note: Bidder to attach copies of the certificates mentioned in

Form 1.

Place:

Bidder's signature

Date: and seal.

Form P-2: Certificate regarding Read & Understood the Contract Documents, etc,

(on bidder company's letter head)

CERTIFICATE

–

I/We, M/s _____, certify the following:

i. I/We have read and understood the tender document and corrigendum (if any) published in CPPP portal vide tender id No _____.
ii. Certified that, to arrive with the correct pricing, I/we have visited the

site and understood the turnkey project requirements as per the Project requirements on meeting with the SPV management.

iii. On successful award of contract, I/we execute the contract as per the terms and conditions of the contract.

Place:
Bidder's signature
Date: and
seal.

Form P-3 Manufacturer Authorisation forms

APMSMEDC Tender

ref.no. Manufacturer

Details:

Authorized Dealer/Distributor:

Manufacturer Authorization

The authorization should be in the nature of a letter, memorandum or certificate regularly granted by the manufacturer to its channel partners, authorized solution providers, system integrators, distributors, etc. or a specific letter issued for purposes of this bid. Such communication should include statements / undertakings from the said manufacturer to the following effect:

1. Guarantee and warranty coverage in respect of the goods and services manufactured by the said manufacturer shall be honored by that manufacturer, their channel partners, distributors, authorized service centers as the case may be.
2. The manufacturer updates the bidder and their technical personnel with relevant technical literature, training and skill transfer workshops etc. on a regular basis.
3. The manufacturer provides back-to-back technical

support to the said bidder on a continuing basis.

4. The said bidder is authorized to provide service and solutions using hardware, firmware and software.
5. In No case, we willl not withdraw our responsibility for our Dealer, Channel Partner, authorized representative, etc., and continue to support till the warranty coverage exists upon the machine installation.
6. This MAF is authorized for 3 years from the issuing date against this tender.

Manufacturer Authorisation given for the following Machinery:

Sl No	Machinery Details	MAF Issued

Note:
The letter of authority should be signed by a person competent and having the power of attorney to bind the manufacturer. OEMs can provide maximum of two MAFs only to their authorized representatives and dealers. If case of direct OEM participation in the tender, OEM are not authoritised to give any authorization form in such cases.

Form P-4: Details of service centers in AP or undertaking

S.No	Full Address of service center	Contact person with phone No.	No. of support engineers
A	B	C	D

Form P-5: Bidder Financial Details

(On company's letter head)

Certified that our firm has having the following financial details:

Sl. No.	Financial Year	Sales Turnover in Rs.	Profit after Tax in Rs.	Net worth in in Rs.
	(1)	(2)	(3)	(4)
1	2022-23			
2	2023-24			
3	2024-25			

Place: Bidder's signature
Certified by CA
Date: and seal. and seal.

Form P-6: List of supplies item wise in the last three Financial Years

(Item wise to be furnished along with Technical Tender)

S.No	Customer Full Address	Year of supply	Items supplied to the customer	Qty	PO No
A	B	C	D		

Form P-7: Declaration Regarding Clean Track Record

To,
The CEO
Andhra Pradesh MSME
Development Corporation 2nd
Floor, PVS Towers, Mangalagiri -
522503

Sir,

I have carefully gone through the Terms & Conditions contained in the Tender Document [No._____]. I hereby declare that my Company/Consortium Partners has not been debarred/ black listed as on Bid calling date by any State Government, Central Government, Central & State Govt. Undertakings/enterprises/ Organizations and by any other Quasi Government bodies/Organizations, in India for non-satisfactory past performance, corrupt, fraudulent or any other unethical business practices. I further certify that I am competent officer in my company to make this declaration.

Yours faithfully,

(Signatu
re of the
Bidder)
Printed
Name
Designat
ion
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t
e
:
Business Address:

Form P-8: Undertaking in compliance with GFR Rule 144(xi)

Ref:

Date:

To,
The CEO
Andhra Pradesh MSME
Development Corporation 2nd
Floor, PVS Towers, Mangalagiri -

522503

Dear Sir,

Sub: Tender for Supply & Installation of Coconut cluster and ancillary equipment in West Godavari

Ref: Tender Reference _____

I/We, < Bidder / OEM Name> have read the clause regarding restrictions on procurement from a Bidder/ OEM of a Country which shares a land border with India.

I/We hereby certify that I/We, <OEM/Bidder Name> is not from any such country or, if from such a Country, has been registered with the following Competent Authority:

1. Details of competent authority:
2. Registration Certificate Ref. No.: (copy to be enclosed)
3. Products for which registered: (registration should be valid for the offered product)

I/We hereby certify that I/We in the event of becoming a successful bidder shall not sub- contract works to any Contractor from a Country which shares a land border with India unless such Contractor is registered with the Competent Authority, as per GFR rule 144(xi).
.

I/We hereby certify that I/We fulfill all requirements in this regard and eligible to be considered
For <OEM/Bidder> Authorized signatory:
Name of the authorized person:
Designation:
Name of Bidder: Stamp of Bidder:

NOTE:

1. The letter should be submitted on the Letter head of the Bidder / OEM and should be signed by the Authorized signatory.
2. Any deviation would lead to summary rejection of bids.
3. Where Applicable, evidence of valid registration of the Competent Authority shall be attached.

Form T -1

Item-wise technical compliance statement as per technical specifications mentioned in Chapter - 4 of this document (taking into consideration all the amendments issued to this document, if any) is to be submitted in the following format:

Item	Description	Specification of proposed item along with Part Code, Qty. & Description if any (Part code details must be provided if available)	Compliance (Complied /Higher/ Lower)	Reference for proof of compliance (Required docs to be uploaded along with technical bid)
		_		

We shall comply with, abide by, and accept without variation, deviation, or reservation all requirements detailed in Section IV: Schedule of Requirements in the Tender Document, except those mentioned above. If mentioned elsewhere in our bid, contrary terms and conditions shall not be recognized and shall be null and void.

.....

.....
(Signatur
e with
date)

.....
.....
(Name and designation) &
Office Seal