REQUEST FOR PROPOSAL

Supply Installation & Commissioning of machineries for development of industry-scale liquid biofertilizer and biopesticide units under Cluster Development Programme (CDP), National Horticulture Board, West Jaintia Hills Cluster, Meghalaya

RFP Reference No.: CDP/2023/856/45

Date: 21st January, 2026

Meghalaya Basin Management Agency (MBMA)

Procurement Division (CDP)

C/o Meghalaya State Housing Financing & Cooperative Society,

Upper Nongrim Hills, Shillong, Meghalaya, India – 793003

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1. Executive Summary

1.1 Background

The Meghalaya Basin Management Agency (MBMA), which is a non-profit company, incorporated under the Planning Department, Government of Meghalaya is selected as implementing agency for implementing ***the Cluster Development Programme – Turmeric cluster in West Jaintia Hills, Meghalaya***. MBMA will implement **Integrated Verticals i.e.,**

(i) **Pre-production & Production,**
(ii) **Post Harvest Management and Value addition and**
(iii) **Logistics, Marketing and branding** with Turmeric as focus crop

Lakadong Turmeric which is known as one of the finest turmeric varieties in the world with a curcumin content of more than 7% (almost 2% higher than other varieties), has been grown in the district for many generations. It is very much sought after for use in the cosmetic, pharmaceutical and food industry. However despite this good demand, farmers have not, till date, been able to realize the full economic potential of this crop primarily because of the small volume of production, preponderance of small and marginal farmers, absence of focused research, low individual volumes exacerbated by lack of organized aggregation, weak post-harvest management and market facilities, lack of universal access to information, skills and technology, unreliable price discovery, dominance of middle men, trader cartelization, access to finance and most importantly, insufficient quality planting material in Lakadong Turmeric. Farming families of the Jaintia Hills have been preserving and multiplying Lakadong mother plants for many generations but of late the decline and non-availability of quality mother rhizomes is a growing cause for concern.

1.2 Objective

This document is a Request for Proposal (RFP) for Engagement of an Agency for Supply, Installation, Commissioning of Machineries and Equipment for development of industry-scale liquid biofertilizer and biopesticide units under Cluster Development Programme, National Horticulture Board, West Jaintia Hills Cluster, Meghalaya.

The Lakadong turmeric, though considered as the world's best of its therapeutic properties, it is however severely affected by soil-borne as well as foliar diseases. Fungal diseases have been mostly recorded on turmeric. However, bacterial and viral diseases are of minor importance. Rhizome rot takes a heavy toll in the majority of turmeric areas. Among foliar diseases, leaf blotch and leaf spot are important. Chemical fertilizers and pesticides have played a major role in enhancing agricultural production. Their instant action and low-priced have managed to bring them to the center of attention. However, the use of these agrochemicals has been associated with many toxic effects on plants, animals, human life and the environment.

The pre-production and production vertical includes the setting up of Biocontrol Laboratory. The main objective for setting up of Biocontrol laboratory is to emphasize on the mass production of bioagents and biofertilizers which are

ecofriendly products in plant protection and are safer substitutes for chemical fertilizers. These products help in improving the turmeric production as well as the control of pests and pathogens infesting turmeric plant thus, playing an integral and indispensable part of integrated pest and disease management. The use of Biofertilizers have also been initiated and encouraged to improve soil quality, promote crop growth, prevent and control crop diseases and enhance the structure of soil microbial community. Mass production of Bioagents and biofertilizers will be followed with the subsequent release to the farmers for treating the targeted pest and diseases by seed treatment, soil treatment and foliar application.

2. Invitation to the Bid

2.1 Issuer

The Meghalaya Basin Management Agency (hereinafter referred to as 'MBMA') invites proposals for the Engagement of an Agency for Supply commissioning of machineries for development of industry-scale liquid biofertilizer and biopesticide units under Cluster Development Programme, National Horticulture Board, West Jaintia Hills Cluster, Meghalaya, as per the scope of the Bid.

2.2 Address for Bid Submission & Correspondence

CEO
Meghalaya Basin Management Agency
Procurement Division (Cluster Development Programme)
C/o Meghalaya State Housing Financing & Cooperative Society,Upper Nongrim Hills, Shillong, Meghalaya, India – 793003

2.3 Key Events, Dates and Important Information

Sl. No.	Event/Information	Details
1	RFP Ref. No.	RFP Reference No.:
2	RFP Publication Detail	The tender form can be seen and downloaded from the website https://mbda.gov.in & https://mbma.gov.in
3	Date of Publishing of Bid	21st January 2026
4	Last Date & Time of Receiving Queries	10th February 2026, before 15:00 IST
5	Pre-Bid Meeting	17th February 2025, 15:00 IST
6	Place of Pre-Bid meeting	Meghalaya Basin Management Agency Procurement Division (Cluster Development Programme)

<table>
<tr><td></td><td></td><td>C/o Meghalaya State Housing Financing & Cooperative Society, Upper Nongrim Hills, Shillong, Meghalaya, India – 793003 or Online meeting (meeting link will be shared based in request through email to: cdpprocurement.mbma@gmail.com</td></tr>
<tr><td>7</td><td>Last Date and Time for Submission of Bids</td><td>26th February 2026, 15:00 IST</td></tr>
<tr><td>8</td><td>Date and Time of Opening of Pre-qualification & Technical Bids</td><td>26th February 2026, before 15:30 IST</td></tr>
<tr><td>9</td><td>Date & Time for opening of commercial Bids</td><td>To be notified later only to technically qualified bidders</td></tr>
<tr><td>10</td><td>Bid Validity Period</td><td>120 days from the last date for submission of bids.</td></tr>
<tr><td>11</td><td>EMD Amount</td><td><table><tr><th>Sl. No</th><th>Component</th><th>EMD Amount</th></tr><tr><td>1</td><td>Components - A</td><td>Rs 75,000/-</td></tr><tr><td>2</td><td>Components - B</td><td>Rs 5,00,000/-</td></tr><tr><td>3</td><td>Components - C</td><td>Rs 1,00,000/-</td></tr><tr><td>4</td><td>Components - D</td><td>Rs 12,000/-</td></tr></table>Exempted for Micro & Small Enterprises under MSME Vendors (Certificate Copy need to provided)</td></tr>
<tr><td>12</td><td>Performance Bid Security (PBG) Amount</td><td>5% of the contract value</td></tr>
<tr><td>13</td><td>Maintenance and support</td><td>3 Years</td></tr>
<tr><td>14</td><td>Contact person (Phone No.)</td><td>+91-9233775404 / +91-9774666353</td></tr>
<tr><td>15</td><td>Contact email</td><td>cdpprocurement.mbma@gmail.com & cdpmbma@gmail.com</td></tr>
</table>

2.4 Distribution of RFP Document

The RFP document can be downloaded from https://mbda.gov.in **and** https://mbma.gov.in portal free of cost.

2.5 Pre-Bid Conference

The MBMA shall organize a Pre-Bid Conference on the scheduled date and time in the Conference Hall of MBMA. MBMA may incorporate any changes in the RFP based on acceptable suggestions received during the interactive Pre-Bid Conference.

The decision of the MBMA regarding acceptability of any suggestion shall be final and shall not be called upon to question under any circumstances. The prospective bidders shall submit their questions in writing not later than date and time indicated under section 2.3 above. It may not be possible at the Pre-Bid Conference to answer questions which are received late. However, prospective Bidders are free to raise their queries during the meeting and responses will be conveyed to all the prospective bidders by way of hosting amendments/clarifications on the website i.e., at https://mbda.gov.in & https://mbma.gov.in The prospective participants have to inform MBMA on the email id mentioned in Section 2.3 for attending the pre-bid conference

2.6 Amendment of RFP Document

At any time before the deadline for submission of Bids, MBMA may, for any reason, whether at own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding document by amendment. All the amendments made in the document would be published on the website https://mbda.gov.in & https://mbda.gov.in. The Bidders are also advised to visit the website on regular basis for checking necessary updates. MBMA also reserves the right to amend the dates mentioned in clause 2.3 of this bid document

2.7 Deadline for submission of Proposal

The Bid response shall be submitted as per the date and time specified in section 2.3 of this document.

3. Eligibility Criteria

The Bidder must possess the requisite experience, strength and capabilities in providing the services necessary to meet the requirements as described in the RFP document. Keeping in view the complexity and volume of the work involved, the following criteria are prescribed as Pre-Qualification criteria for bidder interested in undertaking the project. The bidder must also possess the technical know-how and the financial wherewithal that would be required to successfully provide the required support services sought by MBMA. The bids must be complete in all respect and should cover the entire scope of work as stipulated in the RFP document. The invitation to bid is open to all bidders who qualify the eligibility criteria as given below.

3.1 Pre-Qualification Criteria

Sl. No.	PQ Criteria	Documents required

<table>
<tr><td>1</td><td>The Bidder should be a Company registered under the Companies Act, 1956/ Proprietary Firm / Partnership Firm</td><td>Copy of Incorporation Certificate issued by the Companies Registrar/concerned authority or any other certificate/document issued by government department in connection with proof of establishment or registration</td></tr>
<tr><td>2</td><td>Attested copy of Company's PAN, GST and ITR details</td><td>Documentary proofs should be submitted</td></tr>
<tr><td>3</td><td>Average Annual Turnover of the bidder during last three financial years 2021-22, 2022-23 and 2023-24 should be as per below table.
<table>
<tr><th>Sl. No</th><th>Component</th><th>Average Annual Turnover Amount</th></tr>
<tr><td>1</td><td>Components - A</td><td>Rs 10,00,000/-</td></tr>
<tr><td>2</td><td>Components – B</td><td>Rs 65,00,000/-</td></tr>
<tr><td>3</td><td>Components - C</td><td>Rs 13,50,000/-</td></tr>
<tr><td>4</td><td>Components - D</td><td>Rs 1,80,000/-</td></tr>
</table></td><td>Copy of the CA certificate of the company showing the same should be submitted</td></tr>
<tr><td>4</td><td>The applicant firm must have positive net worth for last 3 financial year.</td><td>Copies of CA certificate for the last three financial years.</td></tr>
<tr><td>5</td><td>Attested copy of Company's PAN and GST details. If registered under MSME kindly provide the MSME Certificate.</td><td>Attested copy of PAN Card and GST Certificate.
MSME Certificate if registered.</td></tr>
<tr><td>6</td><td>Letter of authorization from OEM (if applicable)</td><td>Letter from the OEM</td></tr>
<tr><td>7</td><td>The Product offered should meet all the technical and functional specifications given in the section "Technical Specifications". Non-compliance to any of the technical and functional specification will attract rejection of the proposal. Bidder should declare their compliance against each specification Copy-cut-paste type of compliance report will invite rejection of the quotation</td><td>Declaration of the same with proper page numbers of the supporting document should be provided</td></tr>
<tr><td>8</td><td>The interested firm may quote complete items of all components (A, B, C & D) or any one of the four components. Quotation with incomplete items of a Component will be rejected.</td><td>Quotation of each item should include the company printed colour brochure (distortion of company brochure will invite legal procedure) and valid Letter of Authorization from</td></tr>
</table>

		the OEM.
9	The bidder should not be blacklisted by any Government department/PSUs/Private sector	Self-declaration of the same
10	Earnest Money Deposit	Demand Draft/Bank Guarantee

3.2 Technical Part

Only bidders meeting the above minimum eligibility criteria shall be considered for technical evaluation. The selection of the firm shall be based on the following technical criteria

<table>
<tr><th>Sl. No.</th><th>Evaluation Parameter</th><th>Marks</th><th>Details</th></tr>
<tr><td>1</td><td>Past experience of the organization in supply, installation, commissioning & comprehensive maintenance of the similar machineries/equipment</td><td>10</td><td>More than 5 years = 10 marks
More than 3 years and less than 5 years= 7.5 marks
Less than 3 years = 5 marks</td></tr>
<tr><td>2</td><td>Empanelled with Govt. Department/ Ministry (State/ Central)</td><td>10</td><td>Yes = 10 marks, No= 0 marks</td></tr>
<tr><td>3</td><td>Financial strength of the bidder</td><td>20</td><td>Average annual turnover of the bidder in the last 3 financial years (2021-22, 2022-23 & 2023-2024) as per below details</td></tr>
<tr><td></td><td colspan="3">
<table>
<tr><th>Sl. No</th><th>Component</th><th>Average Annual Turnover Amount</th><th>Marks</th><th>Average Annual Turnover Amount</th><th>Marks</th><th>Average Annual Turnover Amount</th><th>Marks</th></tr>
<tr><td>1</td><td>Components - A</td><td>Rs 10 Lakhs to 20 Lakhs</td><td>2</td><td>Rs 20 Lakhs to 30 Lakhs</td><td>3</td><td>More than 30 Lakh</td><td>5</td></tr>
<tr><td>2</td><td>Components – B</td><td>Rs 65 Lakhs to 80 Lakhs</td><td>2</td><td>Rs 85 Lakhs to 1 Cr.</td><td>3</td><td>More than 1Cr.</td><td>5</td></tr>
<tr><td>3</td><td>Components - C</td><td>Rs 14 Lakhs to 25 Lakhs</td><td>2</td><td>Rs 25 Lakhs to 35 Lakhs</td><td>3</td><td>More than 35 Lakhs</td><td>5</td></tr>
<tr><td>4</td><td>Components - D</td><td>Rs 1.8 Lakhs to 2.5 Lakhs</td><td>3</td><td>Rs 2.5 Lakhs to 4 Lakhs</td><td>3</td><td>More than 4 Lakhs</td><td>5</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Technical compliance of the specification along with OEM authorization and standard certification as applicable to items in Section 5 (bill of materials), Quality accreditations, licensing- ISO, BSI, ISI/Appropriate certifications of the machineries, equipment etc</td><td>10</td><td>Marks will be allocated as per the compliance and specifications of the machines up to a maximum of 10 marks</td></tr>
</table>

<table>
<tr><td>5</td><td>Availability of qualified Technical Manpower for installation and commissioning of machineries.
(to be substantiated by providing declaration along with experience certificate)</td><td>5</td><td>Having technical manpower
10 or more = 5 marks
More than 8 less than 10 = 4 marks
More than 5 less than 8 = 3 marks
Less than 5 = 2 marks</td></tr>
<tr><td>6</td><td>Minimum No. of purchase orders /work order received each year, for Biocontrol equipment's as per BoM during last 5 years (to be substantiated by providing copies of Purchase Orders/Work Orders etc.)</td><td>20</td><td>No. Of Purchase Orders details mention below</td></tr>
<tr><td colspan="4"><table>
<tr><th>Sl. No</th><th>Component</th><th>Purchase Order</th><th>Marks</th><th>Purchase Order</th><th>Marks</th></tr>
<tr><td>1</td><td>Components - A</td><td>1 No</td><td>2</td><td>More than 1 No</td><td>5</td></tr>
<tr><td>2</td><td>Components – B</td><td>1 No</td><td>2</td><td>More than 1 No</td><td>5</td></tr>
<tr><td>3</td><td>Components - C</td><td>1 No</td><td>2</td><td>More than 1 No</td><td>5</td></tr>
<tr><td>4</td><td>Components - D</td><td>1 No</td><td>2</td><td>More than 1 No</td><td>5</td></tr>
</table></td></tr>
<tr><td>7</td><td>Support for repair/servicing / maintenance of the machines after warranty period</td><td>10</td><td>4 years = 10 marks
3 years = 8 marks
2 years= 5 marks
1 Years = 2 marks</td></tr>
<tr><td>8</td><td>Export certifications with proper documentations & IEC code</td><td>5</td><td>Having IEC = 5 marks or else 0 marks</td></tr>
<tr><td>9</td><td>Work experience & Installations of biocontrol lab equipment's in North Eastern Region of India during last 5 years
(to be substantiated by providing copies of work completion certificate)</td><td>10</td><td>Within North Eastern Region - 10 marks
Within India – 5 marks</td></tr>
</table>

3.3 Financial Part

The Financial evaluation will be done only for the bidders who are technically qualified as per the minimum passing score of 70 marks. The bidders need to provide the financial quotation as per the bill of materials specified in Section 5: Bill of Materials no extra cost/payment will be done by MBMA other than the amount that is quoted by the bidder.

4. Scope of Work

Biocontrol agents, Biopesticides and biofertilizers have emerged as a viable alternative. Biopesticides and biofertilizers in a broader sense are the formulations

of living microbes, botanicals and microbials. The use of microbial biopesticides and biofertilizers is one of the major components of IPM & INM, respectively as well as key components in organic and natural farming. These biopesticide and biofertilizer formulations are generally specific / non-specific in action and harmless to beneficial insects, animals and human beings with no residue problems and environmental hazards. Mass production and supply of microbial biopesticides and biofertilizers to the targeted farmers under the project to minimize the utilization of chemical fertilizers and chemical pesticides in crop cultivation and reduce the environmental pollution hazards.

The biopesticides to be produced in the proposed biocontrol laboratory are *Pseudomonas fluorescens and Trichoderma viride*. The biofertilizers to be produced are Nitrogen Phosphorus Potassium (NPK), Phosphate Solubilising Bacteria (PSB), Potassium Solubilising Bacteria (KSB), N2 – fixers like *Azotobacter, Azospirillum & Rhizobium*, While the bioagents to be produced are *Metarhizium anisopliae and Trichogramma chilonis*.

The MBMA is looking for engaging an agency that can provide services to MBMA related to the objectives mentioned above and also supply the mentioned machineries and consumables to MBMA and shall strictly follow the following guidelines.

a) Supply, installation, commissioning and on time delivery of the machineries and equipment as per the technical specifications of this tender document. It is the responsibility of the bidder to ensure that all related components are supplied.
b) Support for repair/servicing /maintenance of the Machinery.
c) In case of any defective parts of the machineries and other mentioned tools and equipment the supplier shall replace the defective part or the whole machine completely without any additional cost.
d) Complete delivery and transportation of machineries and equipment as mentioned in BoM as per requirement with on time delivery.
e) Complete installation, demonstration and training to the staff in operation of the machineries and other mentioned tools and equipment and its components at the time of installation of the equipment at user's site with operation and maintenance manual as per the requirement.
f) Training and capacity building in basic operation and maintenance of the machineries and other mentioned tools and equipment to the members managing the assets so that they will be in a position to be able to repair the machine in case of any breakdown.
g) Technical support shall be provided to for minor and major repairs of machineries and other mentioned tools and equipment and other associated components.
h) Annual maintenance and assistance for Five years and warranty as per standard manufacturing terms & conditions.
i) **Brand and User List**: The technical support and servicing facility available locally within NER region preferably at Guwahati and Shillong and nationally attached separately. Company has all India presence to support Service and all India Installation in reputed Pharma, Biotechnology & Government of India Institutions (the customer list to be provided).

5. Bill of Material (BoM)

COMPONENT A: EQUIPMENT FOR MOTHER CULTURE MAINTENANCE LABORATORY AND STORAGE FACILITIES

Sl. No.	Machinery	Main Components	Detailed Specifications	Quantity
1	**TRINACULAR PHASE CONTRAST MICROSCOPE (WITH ACCESSORIES)**	**Observation method**	Brightfield	1 No.
		Head	30° inclined, 360° rotating	
		Eyepieces	WF 10×/20 mm	
		Nosepiece	Quadruple	
		Objectives	4×, 10×, 40×, 100	
		Stage	150×139 mm (movement: 75×33 mm)	
		Condenser	Abbe N.A. 1,25, with iris diaphragm, focusable and central	
		Connection	USB (camera) and OTG cables	
		Focusing system	Coaxial coarse and fine knobs	
		Illumination	LED (white, 3,6 W)	
		Sensor	CMOS 1/2,5"	
		Output	USB (camera) and OTG cables	
		Voltage supply	100-240v	
		Software	ProView	
		Accessories	*Polarising set (filters only), *Dust cover, medium, L×H: 600×500 mm, *Solar charger for upright microscopes	
		Camera	5MP camera attached to third ocular port as it trinocular. Also attached to desktop to view the image on monitor.	
2.	**STEREO ZOOM BINOCULAR MICROSCOPE**	**Objective lenses type**	Achromatic	1 No.
		Objective lenses Magnification	1.0X	
		Numerical aperture of objective	0.10	
		Eye piece magnification	10X	
		Nominal Working distance	95 mm	
		Minimum value of magnification	5.0X	
		Maximum value of magnification	100X	
		Zoom ratio	7:1	
		Stage type	Manual mechanical stage with transmitted light bases and incident light	

		Stage size	150X140 mm	
		Zoom/Magnification operation	Manual	
		Type of lamp for illumination	LED	
		Display	Through system (System/ laptop)	
		Camera type	Video Camera	
		Camera connectivity interfaces	USB	
		Camera control	App/Software	
3.	**REFRIGERATOR 300 LIT CAPACITY WITH 1 KVA STABILIZER**	**Capacity**	330 litres	2 Nos.
		Annual Energy Consumption	500 Kilowatt Hours	
		Freezer Capacity	73 Litres	
		Type	Double door	
		Defrost System	Frost Free	
		Shelf Type	Toughened Glass	
		Number of shelves	3	
		1 KVA stabilizer		2 Nos.
4.	**HOT AIR OVEN**	**Temperature Range**	50°C above ambient to 250°C maximum with digital temperature controller	2 Nos.
		Temperature control precision	± 0.5 degree centigrade	
		Capacity	122 Lts	
		Door	Solid doors w/ silicone rubber gasket & lock	
		Shelves	2 – 3 Stainless steel shelves (Removable)	
		Inner chamber	Stainless steel	
		Air Circulation	Forced air circulation	
		Power Supply	220 Volts	
		Fan	Noiseless	
		Internal Dimension	450 mm x 450 mm x 600 mm	
		Construction	Double wall	
		Power consumption	2400W	
5.	**BOD INCUBATOR**	**Capacity**	150 L	1 No.
		External Chamber	MS / SS 304 / SS 316	
		Internal Chamber	Stainless Steel 304 (Optional SS 316)	
		Exterior body material	Powder-coated GI sheet	
		Insulation material	PUF	
		Humidity control	Ambient to 90%	
		Temperature Range	5°C to 60°C	
		Temperature Uniformity	+/- 0.5°C at 20°C	
		Air circulation	Fan with motor & durable coaxial blower	
		Display	Backlit LED Display	

		Temperature control	Microprocessor P.I.D controller, On / Off compressor control, PT 100 sensor	
		Overall width and height	455x610 mm	
		Inner Door material	Glass/Acrylic sheet	
		Shelves	Stainless steel Removable trays: 3 nos	
		Refrigerant	R134a / CFC Free	
		Power	220/ 230Volts A.C. supply	
6.	**HORIZONTAL LAMINAR AIRFLOW**	**Operational Requirements**	The basic equipment shall consist of a HEPA filter, pre filter, suitable blower assembly, necessary lighting, indicators and controls for the cabinet.	2 Nos.
		Material	Stainless steel	
		Internal workspace Dimensions (mm)	1200x600x600	
		Sterilizing	UV germicidal tube	
		Controller	Airborne particulate controller and UV microprocessor controller	
		Average air velocity	90+-20% FPM	
		Filter	HEPA filter with polypropylene construction	
		Lighting	Built-in fluorescent lighting with all-white surfaces	
		Design	Custom sturdy cart or stand, Cup sink and vacuum fittings, Polypropylene base cabinet and Ultraviolet light source with full sash	
		Power	220V/50HZ	
		Gas burner (with LPG connector for gas)		2 Nos.
7.	**HORIZONTAL AUTOCLAVE**	**Sterilizer chamber Capacity**	275 litres	1 No.
		Height	1500 mm	
		Diameter	550 mm	
		Depth	1200 mm	
		Width	600 mm	
		All piping	SS 304	
		LID	SS 304 w/Pressure locking device	
		Safety valve	For excess pressure inside jacket and steam generator	
		External Chamber	Corrosion resistant 304 Grade Stainless Steel, Painted	
		Construction Material	SS304	
		Tray	Perforated tray made of SS 304	
		Radial locking system	Chrome plated MS	

		Heaters	ISI mark immersion heaters	
		Stand	Chrome plated MS	
		Walled type	Double walled	
		Door	Single or Double Door w/ automatic pressure locking	
		Chamber condensate line	Fitted with steam trap and check valve	
		Design	Cylindrical	
		Boiler Specifications	Made of SS 304 sheet, Water inlet & outlet valves, Water level glass window, Boiler safety valve	
		Insulation	Glass wool	
		Inner chamber	Corrosion Resistant stainless steel	
		Multiport valve	Selection of sterilization	
		Working temperature	121 degree celsius	
		Sterilizing temperature	121 degree celsius	
		Working pressure (PSI)	17	
		Steam exhaust	5 minute	
		Sterilization period	25 minute	
		Sensor	PT100	
		Controller type	PID temperature control	
		Hydraulic tested on (PSI)	40	
		Pressure	Automatic pressure control switch, Analog dial type pressure gauge, Manual pressure release valves for chamber & jacket	
		Phase	3	
		Frequency	60 hertz	
		Power consumption	9 Kilowatt	
		Voltage	220	
		Standard fittings	Mains MCB, Silicon gasket, Vacuum breaker, Stream trap, Pressure safety valve, Boiler safety valve	
8.	**VERTICAL AUTOCLAVE (small)**	**Sterilizer chamber Capacity (usable volume)**	185 lts	1 No.
		Dimension	16 Dia x 24 ht (inch)	
		Sterilizer chamber material	Double walled SS304 or higher-grade steel	
		Sterilizer chamber type	Circular	
		Door sealing	By elastomeric rubber gasket suitable to withstand temperature upto 140 degree C & pressure upto 20-30 psi	
		Standard fitting	Low water indicator Automatic pressure switch Pedal lifting device	

			Steam release valve Water outlet valve Spring loaded safety valve Power cable with three pin top	
		Controller	Auto set to 15 psi and 121 ^{0}C	
		Working pressure	Upto 15 PSI	
		Working temperature	121^{0}C to 125^{0}C	
		Power	4KW	
9.	**UV- VIS DOUBLE BEAM SPECTROPHOTOMETER**	**Modes**	Basic, wavelength scan (Spectrum scan), multi wavelength, Time scan (kinetics), Quantitative, DNA/ protein	1 No.
		Wavelength range	190-1100nm	
		Spectral bandwidth	0.5/1/1.5/2.0/4.0/5.0 nm	
		Optical system	Double beam, blazed holographic grating (1200 lines/mm)	
		Wavelength accuracy	±0.3nm	
		Wavelength repeatability	±0.2 nm	
		Scanning speed	High, medium, low. Max 3000nm/minute	
		Photometric accuracy	± 0.3 %T or ± 0.002 A/h @ 1A	
		Photometric range	0 - 200 %T, -0.3 to 3A, 0 - 9999 Conc.	
		Stray light	< 0.05 %T @ 220, 340 nm	
		Stability	± 0.001 A/h @ 500 nm	
		Display	5 inches Graphic LCD (320 x 240 dots)	
		Sample compartment	Standard 8 cell with automatic cell changer – 10 mm path-length	
		Light source	Halogen and Deuterium lamps (Pre-Aligned)	
		Power	230 V ± 10% AC, 50 Hz, 150W	
		Dimensions	600 x 450 x 200 mm (Approx.)	
		Detector	Silicon photodiode	
		Keypad	30-key alphanumeric membrane keypad	
		Output port	USB port	
		PC software	PC scanning software	
		Desktop PC	4th generation i3 3.4GHz Processor CPU 500GB hard drive 19" monitor TFT Keyboard and mouse 2xpower cable Windows 11 home 64 bit	1 No.
10.	**DIGITAL COLONY COUNTER**	**Power**	50 Hz	1 No.
		Weight	3 Kg	
		Power source	12V adopter	

		Range	0-999999	
		Display Type	LED	
		Dish size	110mm	
		Dimension	(274x320x167) mm	
		Grid glass plate	110 mm	
11.	**ROTATORY SHAKER**	**No. of flasks & Size**	25x500ml	1 No.
		Platform Size	620x620mm	
		Outer dimension	630x670x310mm	
		Weight	75Kg	
		Motor Speed	30-250 rpm	
		Material	MS with powder coating	
		Mounting	Floor	
		Controller	Microprocessor	
		Power supply	230V, 50-60Hz	
		Clamp	Lotus clamp type, stainless steel	
		Parameter display	Speed with preset facility	
		Speed indicator	Digital/ LED display	
		Power consumption	500W	
12.	**SHAKER INCUBATOR**	**Material**	Double walled inner stainless steel 304 and outer body M.S. powder coated	1 No.
		No. of shelves	2	
		Inner trays	2, made of aluminum	
		Chamber Volume	250 Liters	
		Standard Plate	Platform size 16"x16"	
		Temperature range	4^0 - 75^0 C	
		Temp. controlled	Microprocessor PID Temp. controller	
		Type of movement	Orbital	
		Amplitude shaking stroke	20 mm	
		RPM range	50-200 RPM (Digital RPM indicator)	
		Flask capacity	24x250 ml	
		Electric supply	220/230V, 50/60Hz	
		Accuracy	+0.5	
		Power consumption	3 KW	
13.	**MICROWAVE OVEN**	**Capacity**	28 lts	1 No.
		Dimension	510x305x495 mm	
		Technology	Convection	
		Power consumption	1950 W	
14.	**INTERNAL DIGITAL WEIGHING BALANCE**	Capacity	1210 gm	1 No.
		Pan diameter mm	Approx 40x40 mm	
		Dimensions (WxDxH)	206x291x241 mm	
		Type	Carat scale	
		Display size and Operation	5.7 inch /keys	

		Power supply	50-60Hz and 110-220 V	
		Readability	1 mg	
15.	**ELECTRONIC WEIGHING SCALE LOAD CAPACITY 10KG**	**Rated load capacity**	10 KG	1 No.
		Resolution	1 gm	
		Display	LED	
		Number of display	Single	
		Tare provision	Manual	
		Power requirement	Mains operated battery operated	
		Power supply	Single phase	
		DC operating voltage	220 V	
		Pan/Platform shape	rectangular	
		Pan/platform size	145 mmx125mm	
		Dimensions of weighing machine (L X W X H) in mm x mm x mm	145 X 125 X 50	
16.	**AIR CONDITIONER WITH COOLING AND HEATING ARRANGEMENT WITH 4 KVA STABILIZER**	**Model type**	Inverter split AC	2 Nos.
		Capacity	1 ton	
		Cooling capacity	3550 W	
		Compressor	High EER Rotary- BLDC	
		Refrigerant	R32	
		Operating Modes	Auto, Cool, Dry, Fan	
		Dehumidification	Yes	
		Condenser coil	Copper	
		Remote control	Yes	
		Indoor WxHxD	805mm x285mm x194mm	
		Indoor unit weight	8.5 Kg	
		Outdoor unit weight	21.5 Kg	
		Other dimensions	Connecting Pipe [Type]: Cu-Cu(9.52 mm & 6.35 mm), Connecting Pipe Length: 3 m, Connecting Cable: 3.5 m, Indoor Gross Weight: 11.1 kg, Outdoor Gross Weight: 25.5 kg	
		Panel display	LED	
		Power requirement	AC 230 V, 50 Hx, Single phase	
		Other power features	Half Load Capacity: 1775 W, Half Load Power: 451 W	
		Power consumption	1130 W	
		Auto Air Swing, Anti-bacteria Filter, Dust Filter	Yes	
		Model type	Inverter split AC	
17.	**DEEP FREEZER**	**Temp range -**	**0^0C to -20^0C**	1 No.
		No. of doors	1	
		Door orientation	Top	
		Technology	Convertible	
		Voltage	230V	
		Frequency	50 Hz	

		Type of product	Hard top deep freezer	
		Wheel	yes	
		Capacity	150 Ltr	
		Refrigerant	R600a	
		Dimension	754x564x845 mm	
18.	**MIXER CUM GRINDER**	**Power and Voltage**	750W/230 V	1 No.
		Type	Stainless steel jars and blades	
		No. of jars	3+1	
		Jar capacity	1.75L, 1.0L and 0.5 L	
		Cord length	1.2 m	
		No. of speed settings	3	
		Type of lid	Removable	
		Overload protection	yes	
		RPM Motor with load	11500rpm	
		Non slip feet	Yes	
19.	**EXHAUST FAN 1**	**Motor**	Double ball bearings heavy-duty motor	3 Nos.
		Protection	With bird guard to protect the fan in running condition	
		Sweep size	230 mm	
		No. of blades	4	
		Motor speeds (No.)	1	
		Motor type	Normal speed	
		Blade finish	Metallic	
		Rated Speed	1400 revolution per minute	
		Air delivery	860 m^3/h	
		Noise level	(40 - 45) dB	
		Power Consumption	45 W	
		Rated Voltage	230V	
20.	**EXHAUST FAN 2**	**Airflow (m3/h)**	29000 CMH	3 Nos.
		Voltage	415v/ 50Hz	
		Power (KW)	0.55 KW	
		Phase	3 phase	
		Diameter blades (inch)	35 (inch)	
		Blades Rotational Speeds (RPM)	540	
		Number of blades	6	
		Net weight (Kg)	50	
		Dimension (LxWxH)	1060x1060x550 (mm)	
21.	**MAGNETIC STIRRER WITH HOT PLATE**	**Capacity**	2 Lts	1 No.
		Plate size	32x29x29 cm	
		Heating power	300W	
		Top material	Stainless steel	
		Coating	Heavy powder coated	
22.	**UV CHAMBER WITH UV TUBE LIGHTS**	**Capacity**	150 cards	1 No.
		Salient features	Sterilization chamber made of mild steel and is divided into two equal parts by horizontal partition. Each partition provided with a drawer which has a semi-circular base. In the inner surface	

			of the semicircular base the drawer is provided with longitudinal flanges of 2mm thick and 9cm apart. These flanges prevent the egg bearing cards to glide one over the other from the curve surface. The ceiling of each drawer is provided with UV tube-light. Each tube-light is connected with a timer.	
23.	**PRINTER**	**Product dimension**	40.8D x43.5W x24.4H cm	1 No.
		Material	Plastic	
		Printer media size	5.8x 8.3 (maximum)	
		Included components	Printer, CD DVD Tray, Power cable and USB Cable, ink bottles	
		Scanner Type	Flatbed	
		Memory storage capacity	256 MB	
		Max Input Sheet Capacity	100	
		Compatible devices	Smartphones	
		Max colour Print Resolution	5760x1440	
		Sheet size	21x29.7	
		Wattage	14 Watts	
		Graphics Card Description	Integrated	
24.	**ELECTRIC COOKING HEATER**	**Hot plate type**	Coil hot plate	1 No.
		Number of burners	1	
		Dimension (wxhxd)	(27.94x 7.62x36) cm	
		Power consumption	2000 W	
		Input voltage	220-240 V	

Kindly share brochure of all items for technical validation

COMPONENT B: MOTHER CULTURE FERMENTOR, BACTERIAL AND FUNGAL PRODUCTION FERMENTERS AND ITS ESSENTIAL ACCESSORIES

Sl. No	Machinery	Main Components	Detailed Specifications	Quantity
1.	**IN-SITU STERILIZABLE FERMENTER (TOP DRIVEN for Bacteria)**	**Total Capacity of Vessel:**	750 L	1 No.
		Working capacity	500 L	
		Description	In-situ Sterilizable Fermenter vessel with contact parts SS316 and non-contact parts SS304, supplied with bright and multi colored PLC based 7" HMI Touch Screen Control panel for monitoring and control of pH / Temperature/ DO/ and Agitation as per requirement. Data can be saved and transferred to your computer. The Fermenter/Bioreactor is ISO 9001:2015. ISO13485:2016, IEC, UL,	

			WHO-GMP and CE certified, freestanding, floor mounting, stand-alone, plug-&-play design, along with all utilities (boiler, Chiller & compressor suitable to fermenter setup. For detail specification pls refer Page No. 28-29)	
		D/H Ratio:	1:2.5	
		Design pressure	3.75kg/cm²at full vacuum	
		Design temperature	0 to 150°C	
		Material of Construction (MOC) Vessel shell	S.S.316 L	
		thickness 6mm Jacket shell	S.S.304, thickness 5mm	
		Top Dish	SS316L and thickness 6mm	
		Top port (S.S.316L)	Fermenter vessel will consist of SS316L Ports: inlet port, air inlet and outlet /Vent port, pressure gauge port, inoculums port, one additional port, Light glass, etc. Fermenter vessel consists of multi-channel Ports for dozing of chemicals: Acid, alkali port, additional port	
		Side Ports (S.S.316L)	Temperature sensor, pH sensor, DO2 sensor & sampling, Valve. Harvesting port in the bottom of the vessel. MOC: S.S.316L, Size: 25mm. Inner Surface: 240 grit finished & mirror polished Ra<0.8micron; Gaskets and O'rings: Silicon/EPDM material	
		Sight Glass Assembly	size:30x300mm, MOC-S.S. 316L, glass thickness:15mm.	
		Provision of Ports for Fermenter	Provided on the top plate for safety valve, Agitator assembly, light glass, pressure gauge. An additional two nos. of ports have provided. Air sparger, 3 nos. of Standard ports for acid, Alkali and feed. At 1/3 height from bottom-25mm standard ports for pH, temperature probes and a sampling valve, In the bottom dish - Drain valve, in jacket- Steam/water entry-standard ports- 2nos, Jacket drain: standard–I no.	
		Mixing System/Agitator Assembly	SS316 L Top Driven Stirrer Assembly with shaft with mechanical seal, bearing housing having two number of bearings, Height Adjustable Rushton	

			turbine Impeller 3 number having 6 blades	
		Motor	2.5HP Motor, RPM: 50- 500, AC motor with single mechanical seal, AC motor with drive	
		Sparger Type	Ringtype25mm; Sparger coil for aeration provided with fine pinhole sat bottom towards inner side of the vessel for uniform distribution of Air.	
		Inlet/Exhaust Filters	0.22µm absolute Hydrophobic PTFE bacterial filter with SS housing.	
		MOC of Condenser	Shell in Tube TypeSS316L Exhaust Condenser fitted on the top of the flange with 0.22micron PTFE filter for out gas and air filtration. Water inlet and outlet for circulation of cold water to maintain the reaction volume or cool down the vapors going out with exhaust gases	
		Baffles	SS316L Four numbers Baffles provided for breaking the vortex for proper mixing. Baffles are removable Type.	
		Drain valve	1.5" Diaphragm valve	
		Lantern & Bearing housing assembly	Housing with two bearing	
		No. of legs	4, SS304	
		Heating Assembly	SS-304 with Heat Exchanger with heater assembly.	
		Air Filter	Aeration from compressor, air pressure controlled with Glass Metered Needle Valve Rotameter 0 to 500 LPM and fitted with 0.22µ Inlet filter air filter. The filter is PTFE, Hydrophobic and Autoclavable Type. Consists of Inlet and outlet filter: 0.2 Micron PTFE, cartridge, 5 inch, In- situ sterilizable	
		Control Panel /Instrumentation:	System will consist of a bright & multi colored PLC based 7" HMI Touch Screen Control panel to manage fermenter, boiler, chiller and air compressors. USB port/Interface to transfer the data in computer and software.	
		Aeration Control	Provided with glass metered needle valve Rotameter of 500L /min (Inlet PTF 0.22 micron Hydrophobic Filter) with airflow pressure gauge with safety valve.	

		Temp Control &Temperature Sensor:	TFT controlled temperature monitoring & control system. Temp system: Automatic temp. & sterilization control, Pt100 with port Range: 0to150°C, measurement & Control precision: ±0.1°C. (Preferrable Make: Broadly James, USA).	
		Sterilization Control	PLC based panel with HMI display screen for media sterilization system. Fully automatic, range:0to150°C.	
		RPM Control:	Variable RPM control within 50 to 400 RPM. Auto control of temperature and variable RPM of agitator by providing four solenoid valves with variable frequency drive with control panel.	
		pH Control & pH sensor:	Type: Gel filled, sterilizable,120 mm, in-situ, with S.S. 316L housing, controlled – manual & automatic, Range:0-14, Accuracy: -±0.1 (Preferrable Make: Broadly James, USA).	
		Online OD measurement	In-situ sterilizable sensor	
		Peristaltic Pump	3 Nos. of Peristaltic pumps (for addition of Acid/ Base and Feed with suitable silicon tubing for acid/alkali addition into the vessel. The system having Auto pH Calibration by using Buffers solutions.	
		Foam/ Level Controller	SS316L Conduction probes for automatic Level Foam control. Time Proportionate Control. Provided with one number peristaltic pump with antifoam sensor and cable.	
		Power Supply:	230V+10%50HZ, AC	
2.	**IN-SITU STERILIZABLE FERMENTER (BOTTOM DRIVEN for Fungi)**	**Total Capacity of Vessel:**	750 L	1 No.
		Working capacity	500 L	
		Description	In-situ Sterilizable Fermenter vessels with contact parts SS316 and non-contact parts SS304, supplied with bright and multi colored PLC based 7" HMI Touch Screen Control panel for monitoring and control of pH / Temperature/ DO/ and Agitation as per requirement. Data can be saved and transferred to your computer. The Fermenter/Bioreactor is ISO 9001:2015. ISO13485:2016, IEC, UL, WHO-GMP and CE certified,	

			freestanding, floor mounting, stand-alone, plug-&-play design, along with all utilities (boiler, chiller & compressor suitable to fermenter setup. For detail specification pls refer Page No. 28-29).	
		D/H Ratio:	1:2	
		Design pressure	3.75kg/cm²at full vacuum	
		Design temperature	0 to 150°C	
		Material of Construction (MOC) Vessel shell	S.S.316 L	
		thickness 6mm Jacket shell	S.S.304, thickness 5mm	
		Top Dish	SS316L and thickness 6mm	
		Top port (S.S.316L)	Fermenter vessel will consist of SS316L Ports: inlet port, air inlet and outlet /Vent port, pressure gauge port, inoculums port, one additional port, Light glass, etc. Fermenter vessel consists of multi-channel Ports for dozing of chemicals: Acid, alkali port, additional port	
		Side Ports (S.S.316L)	Temperature sensor, pH sensor, DO2 sensor & sampling, Valve. Harvesting port in the bottom of the vessel. MOC:S.S.316L, Size: 25mm. Inner Surface: 240 grit finished & mirror polished Ra<0.8micron; Gaskets and O'rings: Silicon/EPDM material	
		Sight Glass Assembly	size:30x300mm, MOC-S.S. 316L, glass thickness:15mm.	
		Provision of Ports for Fermenter	Provided on the top plate for safety valve, light glass, pressure gauge. An additional two nos. of ports have provided. Air sparger, 3 nos. of Standard ports for acid, Alkali and feed. At 1/3 height from bottom-25mm standard ports for pH, temperature probes and a sampling valve, In the bottom dish- Agitator assembly, Drain valve, in jacket- Steam/water entry-standard ports-2 nos., Jacket drain-standard–I no.	
		Mixing System/Agitator Assembly	SS316 L Bottom driven Stirrer Assembly with shaft with mechanical seal, bearing housing having two number of bearings, Height Adjustable Pitch Blade turbine Impeller 2 number	

			having 6 blades for fungal fermentation.	
		Motor	2.5HP Motor, RPM: 50- 500, AC motor with single mechanical seal, AC motor with drive	
		Sparger Type	Ringtype25mm; Sparger coil for aeration provided with fine pinhole sat bottom towards inner side of the vessel for uniform distribution of Air.	
		Inlet/Exhaust Filters	0.22µm absolute Hydrophobic PTFE bacterial filter with SS housing.	
		MOC of Condenser	Shell in Tube TypeSS316L Exhaust Condenser fitted on the top of the flange with 0.22micron PTFE filter for out gas and air filtration. Water inlet and outlet for circulation of cold water to maintain the reaction volume or cool down the vapors going out with exhaust gases	
		Baffles	SS316L Four numbers Baffles provided for breaking the vortex for proper mixing. Baffles are removable Type.	
		Drain valve	1.5" Diaphragm valve	
		Lantern & Bearing housing assembly	Housing with two bearing	
		No. of legs	4, SS304	
		Heating Assembly	SS-304 with Heat Exchanger with heater assembly.	
		Air Filter	Aeration from compressor, air pressure controlled with Glass Metered Needle Valve Rotamter 0 to 500 LPM and fitted with 0.22µ Inlet filter air filter. The filter is PTFE, Hydrophobic and Autoclavable Type. Consists of Inlet and outlet filter: 0.2 Micron PTFE, cartridge, 5 inch, In- situ sterilizable	
		Control Panel /Instrumentation:	System will consist of a bright & multi colored PLC based 7" HMI Touch Screen Control panel to manage fermenter, boiler, chiller and air compressors. USB port/Interface to transfer the data in computer and software.	
		Aeration Control	Provided with glass metered needle valve Rotameter of 500L /min (Inlet PTF 0.22 micron Hydrophobic Filter) with airflow pressure gauge with safety valve.	

		Temp Control &Temperature Sensor:	TFT controlled temperature monitoring & control system. Temp system: Automatic temp. & sterilization control, Pt100 with port Range: 0to150°C, measurement & Control precision: ±0.1°C. (**Preferrable Make: Broadly James USA).**	
		Sterilization Control	PLC based panel with HMI display screen for media sterilization system. Fully automatic, range:0to150°C.	
		RPM Control:	Variable RPM control within 50 to 400 RPM. Auto control of temperature and variable RPM of agitator by providing four solenoid valves with variable frequency drive with control panel**.**	
		pH Control & pH sensor:	Type: Gel filled, sterilizable,120 mm, in-situ, with S.S. 316L housing, controlled – manual & automatic, Range:0-14, Accuracy: -±0.1(**Preferrable Make: Broadly James, USA)**	
		Online OD sensor	In-situ sterilizable sensor	
		Peristaltic Pump	3 Nos. of Peristaltic pumps (for addition of Acid/ Base and Feed with suitable silicon tubing for acid/alkali addition into the vessel. The system having Auto pH Calibration by using Buffers solutions.	
		Foam/ Level Controller	SS316L Conduction probes for automatic Level Foam control. Time Proportionate Control. Provided with one number peristaltic pump with antifoam sensor and cable.	
		Power Supply:	230V±10%50HZ, AC	
	Sanitary aseptic transfer Pipeline for Fermenters	• Piping, tubing, valves, pressure gauge & safety valve for process operations. Water Piping size (1" line), steam trap size (1" line), pneumatic angle valves size (1"), air flow regulator and air (1.5" line with Filter housing 1.5"). • Diaphragm valves (1.5" line), ball valves (1.5"), and relief valves size(1/2"), Variable, • Pressure gauges dial size 2.5", Rating: 0 to7 kg/cm² • Top condenser type: Shell & tube type (SS316L), vertical with cold water circulation inlet/outlet through, S.S.304 jacket, top condenser SS316L.		2 sets

		• SS304 pipeline fittings, ball valves, Non-Return valves, circulation Pump, Relief valve, Heat exchanger, air flow control, Housing Filters, silicone tubing, SS clamps etc.		
	Accessories:	System would be provided with 3 No. standard Borosilicate acid/base/feed addition bottles with PTFE filters of 25 mm dia, silicone tubing: 3x6 and 6x9 mm of 5 meter each, SS clamps etc.		
3.	**MOTHER CULTURE FERMENTER**	**Capacity**	3 litre	2 Nos.
		Working capacity	2 litre	
		Material	borosilicate (pyrex) glass made	
		Controls	Micro controller/ PLC/TFT based Auto Temperature/RPM/pH/DO/Antifoam/ Air Flow etc	
		Display	5.7" Graphic TFT Display for microprocessor based systems and 7"/10" HMI Display for PLC based systems.	
		Top Flange/Head Plate	SS 316L with 25 mm ports for pH/DO and temp/heater/Sample Ports of 19mm, feed/ inoculation ports etc	
		Condenser	SS 316L heat exchanger fitted on the top of the flange with 0.22micron PTFE filter for out gas and air filtration. Water inlet and out let for circulation of cold water to maintain the reaction volume	
		Aeration	Through Glass Metered needle valve Rota meter with ring type air Sparger with inbuilt/external air pump/ compressor	
		Inlet/Exhaust Filters	0.22 micron hydrophobic PTFE filters from 50 mm dia to 2" capsule filters	
		Drive	Top/bottom driven direct/ magnetic coupled motor having 20 to 2800 RPM for Microbial Fermentation mode	
		Impellers	Removable type Rushton turbine impeller with Six/ Four SS316L blades for Microbial applications	
		Baffles	Removable Type Two/ Four number SS316L Baffles provided in Microbial Culture vessels	
		Agitation	Variable speed control through PLC/Microprosser control and Display on HMI/TFT	

		Peristaltic Pumps	One fixed speed peristaltic pump fitted on the control panel for the addition of feed or substrate, two fixed speed peristaltic pumps for Acid/Base dosing	
		Heating	Inbuilt Electric heating element fixed /incapsulated in a SS316L tube on the top of flange/ heating blanket	
		Temperature Control	PID control through microprocessor with TFT display / PLC with HMI having control accuracy of +0.2 Deg. C.	
		Software	Data Acquisition/SCADA Software with RS 232C Serial communication/USB Interface to PC for trends/graphs and tabular form DATA AQUISITION with inbuilt memory for data storage	
		Power Supply	230V+ 10%,AC,50 Hz	
4.	**SEED FERMENTER (for Fungi and bacteria)**	**Capacity**	30 liters	2 Nos.
		Working capacity	25 litres	
		Type	Jacketed vessel; SS In-situ autoclavable	
		Top plate	SS 316L with 25 mm ports for pH/DO2/foam/temp/heater/Sample port feed/ inoculation ports etc	
		Control	Micro controller/ PLC/TFT based Auto Temperature/RPM/pH/ DO2/Antifoam/ Air Flow etc with password protection	
		Control Parameters	• Temperature: Min 0^0 - Max 50^0 • Agitation speed: min 50 RPM to 500 RPM • Working pressure: Max 3.75 kg/cm^2 • pH control, DO monitoring, Mass flow control, Antifoam control, Back pressure control, Gas analyser, Redox monitoring, Feed control, Software logging, turbidity sensor	
		Electric control panel	Control panel of material MS/SS both within high Speed PLC and HMI	
		Drive	AC/Servo drive to avoid the possible contamination from mechanical seals. Fermenter vessels with SS 316L with glass window. Optionally top driven motor with double Mechanical seal	
5.	**MEDIA PREPARATION VESSEL**	**Storage Vessel Capacity**	500 Ltr	2 Nos.
		Material of construction	SS316 or SS 304	

		Agitation System	Mechanical mixer/ Magnetic- Top/ Bottom Mounted	
		PLC control	HMI or SCADA	
6.	**AUTOMATIC FILLING MACHINE**	**Main drive Motor**	0.5 – 1 HP	2 Nos.
		Application	Liquid	
		Filling mode	Automatic	
		No. of filling heads	four	
		Filling range	500ml- 5000 ml	
		Net weight	Approx. 120 KG	
		Machine Make	All contact part SS 304/SS 316	
		Syringe	Flexible to fill from 500ML to 5000ML without any change parts. Entire range can be set on the same machine with nominal adjustments for different pack sizes. Change-over time minimum applicable.	
		Filling Speed	500ml @ 24 fills/min; 1000ml @20 fills/min; 2000 ml @15 fills/min; 5000ml @11 fills/min	
		Machine operation	The machine has its own pumping system to connect with the main/buffer tank of the product to be filled. The volume to be filled is measured by the German servo motor, which consists of geared system as in below. The Main system can be explained with the normal gear system model diagram where bottom is the suction and top is the discharge. The discharge is connected with the positive shut-off nozzle which when opens the Spur Gear Servo Motor which starts rotating due to the flow of oil pumped through the pumping system given with the machine and the non-contact sensor mounted on servo motor starts counting electronics pulses which gives feedback to the PLC (Programmable Logic Controller) for the volume to be dispensed. Fast flow "cut-off" and Final flow "cut-off" can be set through PLC (through HMI which is provided on the control panel) with interval between the two for each nozzle with increments of 1ml up to 5 Liters.	

7.	**AUTOMATIC SINGLE HEAD SCREW CAPPING MACHINE**	**No. of sealing head**	Single head screw (No container No cap arrangement) Magnetic Antilock Dai for cap & pressing also	2 Nos.
		Machine make	SS 304 matt finished body	
		Machine dimension	1525 mm (L) x 850 mm (W) x 1900 (H) Approx.	
		Conveyor length	6 feet	
		Standard make Motor	1 HP Single Ph Motor synchronizes conveyor, star wheel & platform turret	
		Screw Cap specification	Depends on bottle size, cap size and type of cap	
		Container size	Round shape (250 ml, 500 ml, 1000 ml)	
		Salient features	Low noise level, low power consumption	
			Adjustable height of conveyor belt	
8.	**TABLET TOP STICKER LABELLING MACHINE**	**Machine description**	The machine is used for full/partial wrap around labelling on different size of round & square containers. It is capable of labelling up to 60 containers per minutes depending on products and label size. The automatic model is equipped with roller spacing device resulting in a simple operation with "No change parts required".	1 No.
		Bottle type for labeling	Round/ square shaped bottles that have packing size of 250 ml to 1000 ml	
		Direction of movement	Left to right	
		Output speed	High production Speed approx. 50 BPM	
		Material Make	Mild steel structure cladded with stainless steel sheet	
		Height of Conveyor	860 mm to 910 mm	
		Salient features	PLC Based operation. Production data storage facility. Low noise level, low power consumption.	
9.	**INDUCTION SEALING MACHINE**	**Machine description**	The machine is used for sealing of round & square containers of different sizes. It utilizes the electromagnetic induction principle to produce instant high heat to manually adhere the melted Wad type aluminium foil sheet to the bunghole of PP / HDPE / LDPE / PET bottles / jars. The machine is provided with generator and special tunnel type head for highspeed sealing	1 No.

			mounted on a mobile frame with an internal water circulator ensuring superior functionality of the machine. The advantage of this machine is that there is no surface heat for sealing the caps so that the bottles or caps cannot get damaged & the bottle / jar lid gets sealed as they travel on the conveyor	
		Sealing diameter	20mm to 135 mm	
		Material	Material makes of Stainless steel 304	
		Power	100W	
		Sealing speed	40 BPM	
		Dimension	700 x 600 x 16500 Millimetre (mm)	
10.	**STEAM GENERATOR**	**Temperature**	121^0C	2 Nos.
		Capacity	200 Kg/hr	
		Fuel type	Electric	
		Power rating	18 KW	
		Machine type	Automatic Electric Steam Generator	
		Boiler Material	Stainless steel, SS 304 plate	
		Steam output Quality	Dry, saturated steam	
		Steam Outlet Size	DN25 – DN50 (based on capacity)	
		Feed Water Inlet:	**DN15 – DN25**	
		Drain Outlet:	**DN15 – DN25**	
		Control & Safety System		
		Control Panel:	Digital / PLC-based automatic control	
		Steam Pressure Control:	Fully automatic with PID controller	
		Water Level Control:	Automatic feed water system	
		Overpressure Protection:	Safety valves with pressure relief	
		Dry Run Protection:	Auto shutdown when water level is low	
		Alarm System:	Audible & visual alarms for safety	
		Phase	Single Phase	
		Voltage	220V	
		Working Pressure	5Kg/cm^2	
11.	**AIR COMPRESSOR**	**Tank capacity**	100 Liters	2 Nos.
		Max pressure	8 bars	
		Max flow rate	114 CFM	
		Insulation	Double	
		Compressor noise level (Db)	68 Db	
		Power	2 phase/440V Ac, 50 Hz, 25 amps starter, oil free	

12.	**CHILLER CIRCULATOR (10 TR)**	**Voltage**	230V+/-10%, AC,50Hz	2 Nos.
		Power input	230V+/-10%,AC,50HZ	
		Features	Digital Type	
		Power Supply	230V+/-10%,	
		Temperature	5 deg to below ambient	
		Chiller shape	Rectangular	
		Cooling capacity	5-50 Liters	
		No. of Compressor	1 No.	
		Weight	Approx. 20 Kg	
		Phase	Single phase	
		Body material	Tank SS, Body GI/MS powder coated	
		Type	Water cooled	
		Water flowing rate	7-15 lt/min	
13.	**COOLING TOWER 70 TR WITH CIRCULATION PUMPS**	**Cooling capacity**	70 TR	1 No.
		Shape	Square/ round	
		Tower material	Fiberglass reinforced polyester	
		Power Supply	Three phase	
		Type	Induced Draft cooling tower	

Kindly share brochure of all items for technical validation

COMPONENT C: POWER SUPPLY, POWER BACKUP AND WATER SUPPLY

Sl. No	Machinery	Main Components	Detailed Specifications	Quantity
1.	**WATER PURIFYING SYSTEM**	**Stages of filtration**	Three stage integration pre-filtration of 10µ/5µ/1µ/0.5µ/iron filter, activated carbon, antiscalant, enough to protect and enhance the life of the precious cartridges	1 No.
		Flow rate	50 LPH	
		Method of purification	Reverse osmosis	
		Frequency range	30-40 Hz	
		Voltage	120V	
		Display	5.7"TFT/LED Display	
		Feed Water Specifications	• Potable Tap water with pressure 0.5 kg to 1.5 Kg (1-6 bar or better) • Conductivity: upto 2000µS/cm • Chlorine: <3ppm SDI <12 TOC<2000ppb, CO2:<50ppm, Silica <30ppm, • Temperature: 4 to 40 Degree C, • Flow rate: up to 75 L/hr • Drain: > 90L/hr, • System include Pre-Filtration Cartridge (1,5 & 10 µ) with Booster Pump and 01 Bio filter (point-of-use Biofilter of 0.2micron) to remove residual biologically active contaminants	
		Type-I Grade Water	• Resistivity: 18.2 MOhm.cm at 25°C • Conductivity: 0.05µS/cm	

		Specifications	• TOC: <5ppb* • Particulates(>0.1µm&<0.22µm): <1/ml • Bacteria(1cfu/100ml): <0.01cfu/ml • Endotoxins/Pyrogens (EU/ml): <0.001 • RNase (ng/ml): <0.001 • DNase (pg/µl): <0.005 • Dispense Rate(Programmable): > 2L/min • UF Membrane(NMWL/MWCO): 5000 • End Point Filter: 0.2,0.1µ (EFA: 250cm/260cm)	
		Type-II Grade Water Specifications	• Resistivity: 10-15 MOhm.cm at 25°C • Conductivity: 0.1- 0.06µS/cm • Dispense Rate (Programmable): upto 2L/min • TOC: <20ppb** • Particulates (>0.1µm &<0.2µm): <1/ml • Bacteria (cfu/10ml): <0.1cfu/ml • Deionization: Mixed Bed Resins/EDI	
		Type-III Grade Water Specifications	• Conductivity: <20µS/cm • Product Flow Rate(L/hr): 5/10/15/20/25/30 • Tank: Integrated/ Inbuilt • Feed/RO/%Rejection Monitoring: Yes • Cell Constant: K= 0.01/0.1/1.0	
2.	**POWER GENERATOR**	**Nominal Rated capacity**	100 KVA	1 No.
		Output voltage and frequency	415V/ 50 Hz	
		Power generator installation	Fixed (power generators are permanently installed)	
		No. of phase	Three phase	
		Fuel consumption at 100% load	21.9 l/hr	
		Fuel tank capacity	230L	
		Dimension	3220 x 1300 x 1795 mm	
		Type of engine cooling	Liquid cooled	
		No. of cylinder	4	
		Engine power	156 hp	
		Rated speed	1500 rpm	
		Noise level	< 75 dBA	
		Insulation class	Class H	

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COMPONENT D: FOR EQUIPMENT (GLASSWARE AND PLASTICWARE)

Sl. No	Product	Specifications	Quantity
1	Hygrometer (Dial type)	• Measuring range: 10% RH to 100% RH • Resolution: 1% RH • Accuracy: +1-5% in the range of 30% to 75% RH	2 Nos.

2	Thermometer	• Measuring range: 10% RH to 100% RH • Resolution: 1% RH • Accuracy: +1-5% in the range of 30% to 75% RH	2 Nos.
3	Neubauer Haemocytometer	• Counting chamber: 1 • RBC pipette: 2 • WBC pipette: 2 • Coverslips: 2 (0.5mm) • Package dimension: 3.1x2.0x0.8 inches	1 No.
4	Digital pH Meter	• pH range: 0 to 14.00 pH • Temperature: 32 to 1940F (0 to 900C) • Max Resolution: pH: 0.01pH • Temp: 0.10 • Basic accuracy: pH: ±(0.01 pH +1d) or ± 0.2 pH • Temp: ± 1.80F (±10C) • Power: Two 3V CR3032 button batteries	1 No.
5	Steel Racks	• Dimensions: 36″x12″x72″ with six compartments • Material: Steel • Compartments/shelves: 6	10 Nos.
6	Corcyra Cage	• Material: Wooden/water proof plank • Size: 43x23x12 cm • Lid: 20 mesh iron wire	20 Nos.
7	Corcyra Egg Laying Cage	• Material: Wooden/water proof plank • Size: 35x25 x 18 (cm) • Description: Fine wire mesh provided on top and bottom fitted with 3mm diameter hole wire mesh 7on one top, a rounded opening 3cm diameter is provided which can be closed with wooden plug. On one side a rounded opening 11cm with an arrangement for drop closer with the help 7of MDF sheet cover is provided for manually putting in/taking out the material.	5 Nos.
8	Storage Drum	• Material: Plastic • Capacity: 30 litres • Lid: Present • HxB: 46x38 cm	2 Nos.
9	Fibre Mesh	• Material: Fibre (PVC coated) • Length: 6x4 ft • Mesh size 30	1 No.
10	Pressure Cooker	• Capacity: 22 litres • Material: Aluminium • Finish type: Mirror, polished • Product dimension: 47.7D x 31.5W x 39.2H cm • Base thickness: 4.06-4.88 mm thick • Item weight: 6900 gm • Handles: Sturdy movable lifting handle: 2 nos. Unbreakable stay cool plastic handles. Solid steel handle bracket	1 No.

11	Trolley Tray	• Material: stainless steel • Trolley Dimension: H: 30",76 cm; W: 9.2",23.3cm; L: 17.5" 44.5cm • Tray dimension: H: 2.5", 6.5 cm, W: 10" 23.3cm, L: 17.5" 44.5 cm • Capacity: 20 kg per tray	2 Nos.
12	Culture tubes	• Type: Flat bottom with screw cap • Capacity: 30 ml • Material: Borosilicate glass	1 No. (100 no./ case)
13	Microscopic glass slides	• Size: 76x26x1 mm • Material: Borosilicate glass	1 No. (5x50 no./case)
14	Microscopic cover slips	• Shape: Square • Size: 18x18 mm	1 No. (50x100 no./case)
15	Beakers	• Capacity: 1000 ml • Material: Borosilicate glass • Size: Approx O.D. x Height (mm)= 105x145	1 No. (20 no./ case)
		• Capacity:100 ml • Material: Borosilicate glass • Size: Approx. OD x height (mm)= 50x70	1 No. (40 no./case)
		• Capacity: 250 ml • Material: Borosilicate glass • Size: Approx O.D. x Height (mm)= 70x95	1 No. (20 no./case)
16	Conical flasks (borosilicate glass)	• Capacity: **1000ml** • Approx O.D. x Height mm= 131 x 220 • Approx Neck O.D. mm = 42 • Narrow mouth with rim	1 No. (20 no./case)
		• Capacity: **2000 ml** • Approx O.D. x Height mm= 166x280 • Approx Neck O.D. mm = 52 • Narrow mouth with rim	1 No. (20 no./case)
		• Capacity: **500 ml** • Narrow mouth with rim • Approx O.D. x Height = 105 x 180 mm • Approx Neck O.D. mm = 34	2 Nos. (34 no./case)
		• Capacity: **250 ml** • Narrow rim with mouth • Size: Approx O.D. x Height = 85x145 • Approx Neck O.D. mm = 34	2 Nos. (34 no./case)
17	Culture petri dishes, S-line (90x15 mm)	• Material: Borosilicate glass • Size: Approx I.D. (D1) x Height (H1) = 86x12 mm • Bottom Approx O.D. (D2) x Height (H2) = 84 x 15 mm	1 No. (100 no. per case)
18	Reagent bottles (narrow mouth with screw cap)	• Capacity: 500 ml • Approx ODx Height (mm): 86 x 177 • Material: Borosilicate glass	1 No. (10 no./ case)
19	L- shaped Spreader (Autoclavable)	• Size: Approx OD x Length = 60x150 mm • Material: Polystyrene	1 No. (20 no./ case)

20	Metaloop	• Size: 2.2 mm • Diameter: Calibrated to 0.01 ml • Material: nichrome loop in SS rod	1 No. (8 no./case)
21	Inoculation/Dissecting needles	• Material: Stainless steel • Handle: Plastic	1 No. (50 no. /case)
22	Cork borer	• Stainless steel • Size (diameter): 0.5cm, 0.75 cm, 1 cm, 1.5 cm, 1.85 cm and 2.0 cm	1 No. (6 no./case)
23	Micropipette	• Capacity =100-1000 µl	1 No.
		• Capacity= 20-200 µl	1 No.
24	Pipette tips	• Size: 1000 µl • Material: Transparent, Polypropylene	1 No. (1000 tips/ pack)
25	Empty tip box	• Size: for 1000 µl pipette tips • Positions: 100 • Material: Polypropylene	2 No.
26	Pipette tips	• Size: 200 µl • Material: transparent, Polypropylene	1 No.
27	Empty tip box (200 µl)	• Size: For 200 µl pipette tips • Material: Polypropylene • Position:100	2 Nos.
28	Micropipette stand	• Type: Z-shaped linear stand • Capacity: 5 racks • Colour: Transparent	1 No.
29	Measuring cylinder	• Capacity: 1000 ml • Material: Polypropylene	1 No. (4 no./ pack)
		• Capacity: 250 ml • Material: Polypropylene	1 No. (6 no./pack)
		• Capacity:100 ml • Material: borosilicate glass	4 Nos. (4 no./ pack)
30	Utility tray	• Material: Polypropylene • Size: 375mmX300mmX75mm	6 No.
31	Utility tray	• Material: Metal enamel coated • Size: 18x12 inch	6 Nos.
32	Spatula	• Size: 12 inch • Material: Stainless steel • Type: One end flat and one end spoon	4 Nos.
33	Glass rod	• Type: Transparent, borosilicate • Size: 150x6 mm	5 Nos.
34	Spirit lamp	• Material: Stainless steel • Shape: Round • Capacity: 120 ml	4 Nos.

35	Coated Magnetic stir bar	• Coated material: PTFE • Size: 8x25 mm	1 No. (5 no./ pack)
36	Carboy with Stopcock	• Material: LDPE • Capacity: 50 lts	5 Nos.
37	Jerrican	• Material: HDPE • Capacity: 5 lts • Colour: White	2 Nos.
38	Quartz cuvettes	• Material: UV quartz • Pathlength: 10mm • Capacity: 3.5 ml	2 Nos.
39	Graduated Glass pipette	• Borosilicate graduated pipette with pipette bulb (Rubber) • Capacity: 1 ml, 2ml, 5ml 10 ml, 20 ml, 25 ml	1 No. (Pack of 6)
40	Hand lens	• Lens material: Glass • Magnification strength: 10x • Handle material: Plastic	5 Nos.
41	Wash bottle	• Material: LDPE • Capacity: 500 ml • Colour: white	1 No. (Pack of 6)
42	Funnel	• Material: Polypropylene autoclavable • Sizes: 2', 3' and 4' diameter	15 Nos. (5 Nos /size)
43	Stainless steel potato masher	• Material: stainless steel • Dimension (WxHxD): (9x24x8) cm	2 Nos.
44	Knife	• Blade type: single-edged • Blade length: 5 inch • Material: stainless steel • Handle material: Ergonomic non-slip plastic handle	2 Nos.
45	Buckets	• Material: Plastic • Capacity: 15 lts	4 Nos.
46	Plastic basin	• Multi utility round basin • Material: Plastic • Capacity: 9 liters • Size: 370 (dia) x100 (H) mm approx..	10 Nos.
47	Plastic strainer	• Material: Plastic • Dimensions (cm): 21Lx21Wx7.5 H • Mesh size: 10, 15, 25, 30, & 40	5 Nos.
48	Camel brush	• Material: Wood, Animal hair • Handle type: Beavertail handle • Item weight: 30.2x14.2x1.2 cm	1 No. (Pack of 7pc)

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BIDDER SHOULD BID FOR ALL ITEMS OF EACH COMPONENTS (A, B, C & D) OR ALL COMPONENTS.

6. Instruction to the Bidders

6.1 Procedure for Submission of Bids

Technical Bid (Envelope 1): The documents comprising of the pre-qualification documents and technical documents need to be enclosed in a separate envelope which is properly sealed and inscribed as **"Technical Bid for Supply Installation & Commissioning of machineries for development of industry-scale liquid biofertilizer and biopesticide units under Cluster Development Programme (CDP), National Horticulture Board, West Jaintia Hills Cluster, Meghalaya. "**

Financial Bid (Envelope 2): The documents comprising of the financial bid need to be enclosed in a separate envelope which is properly sealed and inscribed as "**Financial Bid for Supply Installation & Commissioning of machineries for development of industry-scale liquid biofertilizer and biopesticide units under Cluster Development Programme (CDP), National Horticulture Board, West Jaintia Hills Cluster, Meghalaya.".** *Do not open before date and time of opening of financial bid*

Main Envelope: The technical envelope (envelope 1) and financial envelope (envelope 2) should be put into a single envelope which is properly sealed and marked as **"Proposal for Supply Installation & Commissioning of machineries for development of industry-scale liquid biofertilizer and biopesticide units under Cluster Development Programme (CDP), National Horticulture Board, West Jaintia Hills Cluster, Meghalaya**.". – *Do not open before date and time of opening of technical bid*

The proposal should be submitted to:

Chief Executive Officer,
Meghalaya Basin Management Agency (MBMA)
Procurement Division (CDP)
C/o Meghalaya State Housing Financing & Cooperative Society,
Upper Nongrim Hills, Shillong, Meghalaya, India – 793003

6.2 Authentication of Bid

The response Bid shall be signed by the bidder or a person or persons duly authorized to bind the bidder to the contract. A letter of authorization shall be supported by a written Power-of-Attorney accompanying the bid. All pages of the bid, except for un-amended printed literature, shall be initialed and stamped by the person or persons signing the Bid.

6.3 Validation of interlineations in Bid

The Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

6.4 Cost of Bidding

The Bidder shall bear all costs associated with the preparation and submission of its bid including cost of presentation for the purposes of clarification of the bid, if so desired by the MBMA. MBMA will in no case be responsible or liable for those costs, regardless of the outcome of the tendering process.

6.5 Language of Bids

The Bids prepared by the bidder and all correspondence and documents relating to the bids exchanged by the bidder and MBMA, shall be written in English language. Any printed literature furnished by the bidder may be written in another language so long the same is accompanied by a duly attested English translation in which case, for purposes of interpretation of the bid, the English translation shall govern

6.6 Documents Comprising the Bids

The Bid prepared by the Bidder shall comprise the following components. The Bids not conforming to the requirements shall be summarily rejected.
In support of eligibility, a Bidder must submit the following documents (besides the other requirements of the tender), original copies or attested copies, as the case may be, in the absence of which the Bid will be rejected.

Technical Bid:

1. Section 8: Format 1 - General Information about the Bidder
2. Section 8: Format 2 - Declaration Regarding Clean Track Record
3. Section 9: Format 1 - Technical Bid Letter
4. Section 9: Format 2 - Deviations from Tender Terms & Conditions
5. Section 9: Format 3 - Project Experience Details
6. Section 11: Annexure - I: Bidding Document Acknowledgement Form
7. Section 11: Annexure - II: Proforma of Bank Guarantee towards Performance Security
8. Bidders should compliance as per Section 4 & 5: Scope of Work & Bill of Materials for Detail Technical Specifications

Financial Bid

The Commercial Bid, besides the other requirements of the Tender, shall comprise the following:

- Filled Bill of Materials with items and quantity with price quotation – **Section 10: Format for Response to tender: Financial Bid**

6.7 Bid Prices

The Bidder shall prepare the Bid based on details provided in the Tender Document. It must be clearly understood that the scope of work is intended to give the Bidder an idea about the order and magnitude of the work and is not in any way exhaustive and

guaranteed by the MBMA. The Bidder shall carry out all the tasks in accordance & due diligence and it shall be the responsibility of the Bidder to fully meet all the requirements of the Tender Document.

6.8 Firm Prices

Prices quoted in the Bid must be firm and final and shall not be subject to any upward modifications on any account whatsoever. However, the MBMA reserves the right to negotiate the prices quoted in the Bid to effect downward modification.

6.9 Bid Currency

Prices shall be quoted in Indian Rupees (INR)

6.10 Bid Security (Earnest Money Deposit)

The EMD amount is to be paid through DD/BG in favour of **M/S MBMA CDP ESCROW A/C**. The EMD of the unsuccessful bidder will be returned within 30 days from the issuance of work order to the successful bidder. However, the EMD of the successful bidder will be adjusted against the performance security.

6.11 Bid Validity Period

Period of Validity of Bids shall remain valid for 120 days after the date of opening of Bids prescribed by the MBMA. A Bid valid for a shorter period may be rejected as non-responsive. However, the prices finalized after opening the tenders shall not increase throughout the period of implementation and operation. The prices of components quoted in the Financial Bid by the Bidder shall remain valid for the project period. Extension of Period of Validity in exceptional circumstances, MBMA may request the Bidder(s) for an extension of the period of validity. The request and the responses thereto shall be made in writing.

6.12 Withdrawal of Bids Written Notice

The Bidder may withdraw its Bid after the Bid submission, provided that MBMA receives written notice of the withdrawal, prior to the last date prescribed for receipt of Bids. The Bidder's withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions said earlier. A withdrawal notice may also be sent by fax but followed by a signed confirmation copy, post marked not later than the last date for receipt of Bids.

6.13 Evaluation of Pre-Qualification Bid, Technical Bid and Commercial

- A two-stage procedure will be adopted for evaluation of bids, with the pre-qualification (as per pre-qualification criteria) and technical evaluation at the first stage and financial evaluation at second stage.
- Technical bids will be evaluated as per technical bid evaluation criteria and a technical score will be given to the technically qualified bidders.
- The commercial Bids of only the technically qualified Bidders will be opened and evaluated as per specified criteria.
- Conditional Bids are liable to be rejected.

The evaluation process of the Tender, proposed to be adopted by MBMA is indicated under the clauses 6.14, 6.15, 6.16 and 6.17. The purpose of these clauses is only to provide the Bidders an idea of the evaluation process that MBMA may adopt. However, MBMA reserves the right to modify the evaluation process at any time during the Tender process, without assigning any reason, whatsoever and without any requirement of intimating the Bidders of any such change.

6.14 Evaluation of Pre-Qualification Bid

The Agency shall be selected through a competitive bidding process. A two-stage selection process will be adopted in evaluating the proposals. In the first stage, a technical evaluation will be carried out. In the second stage, a financial evaluation will be carried out. The L1 (lowest financial quote) agency shall be selected while the L2 agency will be kept in reserve.

6.15 Evaluation of Technical Bid

Technical Proposal will be evaluated on the basis of parameters mentioned above. Only those Applicants whose Technical Proposals score 70 marks or more out of 100 marks shall qualify for further consideration of financial evaluation.

6.16 Evaluation of Financial Bids

On opening the financial bids, the Evaluation Committee shall read out the financial bids to all the technically qualified bidders and note the same. All the financial bids shall then be ranked according to the financial bid in increasing order with the bidder quoting the least amount ranked L1, bidder quoting next higher figure as L2 and so on. In case there is any tie in financial bids of one or more bidders, the bidder having the higher technical score will be given better ranking. In case the technical scores are also equal, all the technically qualified bidders shall be asked to resubmit the financial bid. However, in this case, the revised financial bids should be less than the lowest financial bid quoted earlier by the technically qualified bidders. L1 will be declared as successful bidder and his offer will be processed further.

6.17 Rectification of Errors

Arithmetical errors in the Financial Bid will be rectified on the following basis.

- If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and will be considered for future calculations.
- If there is a discrepancy between words and figures, the amount in words shall prevail.

Note: In any other case of discrepancy, MBMA reserves the right to pick the value which it considers as beneficial to the Government.

6.18 Contacting the MBMA

Contact by Writing: No Bidder shall contact MBMA on any matter relating to its Bid, from the time of Bid opening to the time the Contract is awarded. If the Bidder wishes to bring additional information to the notice of MBMA, it should be done in writing.

Rejection of Bid: Any effort by a Bidder to influence the MBMA in its decisions on Bid evaluation, bid comparison or contract award may result in rejection of the Bidder's Bid.

6.19 Rejection Criteria

Besides other conditions and terms highlighted in the tender document, bids may be rejected under following circumstances:

Pre- Qualification Rejection Criteria:

- Bids submitted without or with improper EMD
- Bids which do not conform to unconditional validity of the bid as prescribed in the Tender.
- Pre-Qualification bid containing commercial details
- If the information provided by the bidder is found to be incorrect / misleading at any stage / time during the tendering process.
- Any effort on the part of a bidder to influence the bid evaluation, bid comparison or contract award decisions.
- Bids received by MBMA after the last date prescribed for receipt of bids
- Bids without signature of person (s) duly authorized on required pages of the bid
- Bids without power of authorization and any other document consisting of adequate proof of the ability of the signatory to bind the Bidder.
- Failure to furnish proofs for information provided.

Technical Rejection Criteria:

- Technical bid containing commercial details.
- Revelation of prices in any form or by any reason before opening the commercial bid
- Failure to furnish all information required by the RFP document or submission of a bid not substantially responsive to the tender document in every respect
- Failure to furnish proofs for information provided
- Bidders not quoting for the complete scope of work as indicated in the tender documents, addendum (if any) and any subsequent information given to the bidder.
- Bidders not complying with the technical and general terms and conditions as stated in the RFP Document other than the deviations
- The bidder not conforming to unconditional acceptance of full responsibility of providing services in accordance with the scope of work of this tender
- If the bid does not confirm to the timelines indicated in the Bid.

Commercial Rejection Criteria:

- Incomplete price bid
- Price bids that do not conform to the tender's price bid format
- Total price quoted by the bidder does not include all statutory taxes and levies applicable.

6.20 Concessions permissible under statutes

Bidder, while quoting against this tender, must take cognizance of all concessions permissible under the statutes including the benefit under Central Sale Tax Act, 1956, failing which it will have to bear extra cost where Bidder does not avail concessional rates of levies like customs duty, excise duty, sales tax, etc. MBMA will not take any responsibility towards this. However, MBMA may provide necessary assistance, wherever possible, in this regard.

6.21 Income Tax Liability

The Bidder will have to bear all Income Tax liability both corporate and personal tax.

6.22 GST Liability

The Bidder will have to bear all GST.

6.23 Performance Security

- The successful bidder should submit 5% of the contract value as a performance security valid for a period of 8 Months.
- Performance security will be return after completion of contract within 2-3 months.

7. General Conditions of Contract

7.1 Ownership of Equipment

The MBMA shall own all the equipment, licenses and any solution supplied by the Bidder arising out of or in connection with this Contract.

7.2 Payment

The fee amount will be equal to the amount specified in format for Tender Response – Commercial Bid

7.3 Delivery Installation & Commission Address

Wahiajar, West Jaintia Hills

7.4 Payment Terms & schedule

Payment Terms – A

Sl. No.	Payment Deliverable	Payment Percentage
1	Advance payment on Signing of Contract against Bank Guarantee of 110% of the advance amount, which should be valid for a minimum period of 12 months	20% of the contract value within 30 days
2	On successful delivery of machinery, tools & equipment and consumables.	50% of the contract value within 30 days
3	On Successful installation of machineries	10% of the contract value within 30 days
4	On successful commissioning of the Lab	10% of the contract value within 30 days
5	Final acceptance test report from the MBMA	10% of the contract value within 30 days

OR

Payment Terms - B

Sl. No.	Payment Deliverable	Payment Percentage
1	On successful delivery of machinery, tools & equipment and consumables.	70% of the contract value within 30 days
2	On Successful installation of machineries	10% of the contract value within 30 days
3	On successful commissioning of the Lab	10% of the contract value within 30 days
4	Final acceptance test report from the MBMA	10% of the contract value within 30 days

Bidders can select any one of the payment terms while submitting the proposal.

7.5 Delivery Schedule

All the deliverables as per the scope of work should be completed within **6 months (180 days)** from the date of issue of work order/signing of contract.

7.6 Penalty

a) Failure to execute the entire contract within 200 days from the date of issue of work order will attract a penalty of 1% per 7 days on the full value of the contract up to a maximum of 10%. Delays beyond that period will be viewed as violation of the contract terms and will be dealt accordingly.
b) The response time for attending the complaint raised by MBMA has to be within 48 hours and resolution time for the same has to be within the next 48 hours. Failure to comply with the above timeline will attract a penalty of Rs. 2000/- per day.
c) Any delay on the part of MBMA should be intimated and sorted out immediately without affecting the progress of works

7.7 Force Majeure

Force Majeure shall not include any events caused due to acts/omissions of such Party or result from a breach/contravention of any of the terms of the Contract, Bid and/or the Tender. It shall also not include any default on the part of a Party due to its negligence or failure to implement the stipulated/proposed precautions, as were required to be taken under the Contract.

The failure or occurrence of a delay in performance of any of the obligations of either partyshall constitute a Force Majeure event only where such failure or delay could not have reasonably been foreseen or where despite the presence of adequate and stipulated safeguards the failure to perform obligations has occurred. In such an event, the affected party shall inform the other party in writing within five days of the occurrence of such event.MBMA will make the payments due for Services rendered till the occurrence of Force Majeure. However, any failure or lapse on the part of the bidder in performing any obligationas is necessary and proper to negate the damage due to projected force majeure events or tomitigate the damage that may be caused due to the above-mentioned events or the failure to provide adequate disaster management/recovery or any failure in setting up a contingencymechanism would not constitute force majeure, as set out above.

In case of a Force Majeure, all Parties will endeavor to agree on an alternate mode of performance in order to ensure the continuity of service and implementation of the obligations of a party under the Contract and to minimize any adverse consequences of Force Majeure.

8. Format for Response to the Tender

This section provides the outline, content and the formats that the Bidders are required to follow in the preparation of the Pre-Qualification Bid.

8.1 Format 1 - General Information about the Bidder

Details of the Bidder (Company)				
1	Name of the Bidder			
2	Address of the Bidder			
3	Status of the Company (Public Ltd/ Pvt. Ltd)			
4	Details of Incorporation of the Company	Date:		
		Ref. #		
5	Details of Commencement of Business	Date:		
		Ref. #		
6	Valid Goods and Service Tax (GST) registration no.			
7	Permanent Account Number (PAN)			
8	Name & Designation of the contact person to whom all references shall bemade regarding this tender			
9	Telephone No. (with STD Code)			
10	E-Mail of the contact person:			
11	Fax No. (with STD Code)			
12	Website			
13	Financial Details (as per audited Balance Sheets) (in crore)			
14	Year	2021-22	2022-2023	2023-2024
15	Net Worth			
16	Turn Over in INR			

8.2 Format 2 - Declaration Regarding Clean Track Record

To
Chief Executive Officer,
Meghalaya Basin Management Agency,
C/o Meghalaya State Housing Financing Cooperative Society,
Nongrim Hills, Shillong- 793003

Sir,

I have carefully gone through the Terms & Conditions contained in the RFP Document[No.____] regarding Engagement of an Agency for The Supply commissioning of machineries for development of industry-scale liquid biofertilizer and biopesticide units under Cluster Development Programme. I hereby declare that my company has not been debarred/black listed by any Government/Semi-Government organizations in India. I further certify that I am competent officer in my company to make this declaration.

Yours faithfully,

(Signature of the
Bidder)Printed
Name Designation
Seal Date:
Business
Address:

9. Format for Response to Tender: Technical Bid

9.1 Format 1 – Technical Bid Letter

To
Chief Executive Officer,
Meghalaya Basin Management Agency,
C/o Meghalaya State Housing Financing Cooperative Society,
Nongrim Hills, Shillong- 793003

Subject: Engagement of an Agency for The Supply commissioning of machineries for development of industry-scale liquid biofertilizer and biopesticide units under Cluster Development Programme, National Horticulture Board, West Jaintia Hills Cluster, Meghalaya.

Reference: RFP No:<RFP Reference Number>Dated
<dd/mm/yyyy>

Sir,
We, the undersigned Bidder, having read and examined in detail all the Tender documentsdo hereby propose to provide the services as specified in the Tender document number
<Tender Reference Number>Dated <dd/mm/yyyy>along with the following:

1. Earnest Money Deposit (EMD)

We have submitted EMD for the sum of Rs……/- (Rupees .....only). This EMD
is liable to be forfeited in accordance with the provisions of RFP.

2. Deviations

We declare that all the services shall be performed strictly in accordance with the Tender documents except for the variations, assumptions and deviations, all of which have been detailed out exhaustively in the following statements, irrespective of whatever has been stated to the contrary anywhere else in our Tender:

- Statement of Deviations from Tender Terms and Conditions is as specified in GeneralTerms and Conditions

Further, we agree that additional conditions or assumptions, if any, found in the Tenderdocuments other than those stated in deviation schedule shall not be given effect to.

3. Contract Performance Guarantee Bond

We hereby declare that in case the contract is awarded to us, we shall submit the ContractPerformance Guarantee Bond in the form prescribed in the RFP.

4. Bid Validity Period

We agree to abide by this Bid for a period of 120 days after the date fixed for Bid opening orfor any further period for which Bid validity has been extended and it shall remain binding upon us and Bid may be accepted at any time before the expiration of that period.

We hereby declare that our Bid is made in good faith, without collusion or fraud and theinformation contained in the Bid is true and correct to the best of our knowledge and belief.

We understand that our Bid is binding on us and that you are not bound to accept a Bid youreceive.

Yours faithfully,

(Signature of the
Bidder)Printed
Name Designation
Seal Date:
Business Address:

9.2 Format 2- Deviations from Tender Terms & Conditions

The given format should be followed while marking out the deviations from Tender terms and conditions:

Sl. No.	Section No.	Clause No.	Page No.	Statement of deviations and variations.	Remarks
1					
2					
3					
4					
5					
6					

9.3 Format 3 - Project Experience Details

Sl. No.	Item	Details
General Information		
1	Customer Name/Government Department	
2	Name of the Contact Person and Contact details for the project	
Brief description of scope of project		
Size of the project		
3	Contract Value of the project (in crore)	
4	Capital Expenditure involved (by the govt./ client)	
5	Total cost of the services provided (by the Bidder)	
6	Please provide copies of Work Order or Certificate of Completion.	
Project Details		
7	Name of the project	
8	Start Date and End Date	
9	Current Status (work in progress, completed)	
10	Contract Tenure	
11	No. of locations	
12	Man-month effort involved	
13	Type of Project	
14	Solution architecture deployed & core Components	
15	Scope	
16	Any other necessary information	

10. Format for Response to Tender: Financial Bid

Sl. No	Machine Name	Quantity	Unit Price	GST	Total Price
A.	COMPONENT A: EQUIPMENT FOR MOTHER CULTURE MAINTENANCE LABORATORY AND STORAGE FACILITIES				
1					
2					
3					
4					
5					
B.	COMPONENT-B: MOTHER CULTURE FERMENTER, BACTERIAL AND FUNGAL FERMENTERS AND ITS ESSENTIAL ACCESSORIES				
1					
2					
3					
4					
5					
C.	COMPONENT C: POWER SUPPLY, POWER BACKUP AND WATER SUPPLY				
1					
2					
3					
4					
5					
D.	COMPONENT-D: FOR EQUIPMENT (GLASSWARE AND PLASTICWARE)				
1.					
2.					
3.					
4.					
5.					
Total cost					

** Bidder can add new rows as required

** The Financial quotation provided here will be considered as final and no further changes and extra charges are permitted and will not be considered for payment.

11. Annexure

11.1 Annexure - I: Bidding Document Acknowledgement Form

To Dated:

Chief Executive Officer,
Meghalaya Basin Management Agency,
C/o Meghalaya State Housing Financing Cooperative Society,
Nongrim Hills, Shillong- 793003

Dear Sir,

We hereby acknowledge receipt of a complete set of Bidding Documents consisting of Annexure (along with their Appendices) enclosed to the "Invitation for Bid" pertaining to providing of services against tender no……...

We have noted that the closing date for the receipt of the tender by the MBMA is at <> hrs. (IST) and opening at <> hrs. (IST) on the same day.

We guarantee that the contents of the above said Bidding Documents will be kept confidential within our organization and text of the said documents shall remain the property of the MBMA and that the said documents are to be used only for the purpose intended by the MBMA.

Our address for further correspondence on this tender will be as under:

Tel. No: …….....

Fax. no: ……..... Telephone no: ……...

Personal attention of: …….....

(if required)

Yours faithfully,

(Bidder)

Note: This form should be returned along with offer duly signed

Annexure – II: Proforma of Bank Guarantee towards Performance Security

PERFORMANCE GUARANTEE

Ref. No.: …… Bank Guarantee No.: ……

Dated: …….

To
Chief Executive Officer,
Meghalaya Basin Management Agency,
C/o Meghalaya State Housing Financing Cooperative Society,
Nongrim Hills, Shillong- 793003

Dear Sir,

In consideration of Meghalaya Basin Management Agency, Govt. of Meghalaya, having its office at Nongrim Hills, Shillong- 793003, Meghalaya (hereinafter referred to as `MBMA', which expression shall, unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and assignees) after receipt of the work order dated with M/s_____having its_____registered/head office at_____ (Hereinafter referred to as the 'CONTRACTOR') which expression shall, unless repugnant to the context or meaning thereof include all its successors, administrators, executors and assignees) and MBMA having agreed that the CONTRACTOR shall furnish to MBMA a performance guarantee for Indian Rupees……..for the faithful performance of the entire CONTRACT.

We (name of the bank) registered under the laws of having head/registered office at (hereinafter referred to as "the Bank", which expression shall, unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and permitted assignees) do hereby guarantee and undertake to pay immediately on first demand in writing any /all moneys to the extent of Indian Rupees. (in figures) (Indian Rupees (in words)) without any demur, reservation, contest or protest and/or without any reference to the CONTRACTOR. Any such demand made by MBMA on the Bank by serving a written notice shall be conclusive and binding, without any proof, on the bank as regards the amount due and payable, notwithstanding any dispute(s) pending before any Court, Tribunal, Arbitrator or any other authority and/or any other matter or thing whatsoever, as liability under these presents being absolute and unequivocal. We agree that the guarantee herein contained shall be irrevocable and shall

1. continue to be enforceable until it is discharged by MBMA in writing. This guarantee shall not be determined, discharged or affected by the liquidation, winding up, dissolution or insolvency of the CONTRACTOR and shall remain valid, binding and operative against the bank.

2. The Bank also agrees that MBMA at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the CONTRACTOR and notwithstanding any security or other guarantee that MBMA may have in relation to the CONTRACTOR's liabilities.

3. The Bank further agrees that MBMA shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said CONTRACT or to extend time of performance by the said CONTRACTOR(s) from time to time or to postpone for any time or from time-to-time exercise of any of the powers vested in MBMA against the said CONTRACTOR(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said CONTRACTOR(s) or for any forbearance, act or omission on the part of MBMA or any indulgence by MBMA to the said CONTRACTOR(s) or any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

4. The Bank further agrees that the Guarantee herein contained shall remain in full force during the period that is taken for the performance of the CONTRACT and all dues of MBMA under or by virtue of this CONTRACT have been fully paid and its claim satisfied or discharged or till MBMA discharges this guarantee in writing, whichever is earlier.

5. This Guarantee shall not be discharged by any change in our constitution, in the constitution of MBMA or that of the CONTRACTOR.

6. The Bank confirms that this guarantee has been issued with observance of appropriate laws of the country of issue.

7. The Bank also agrees that this guarantee shall be governed and construed in accordance with Indian Laws and subject to the exclusive jurisdiction of Indian Courts of the place from where the purchase CONTRACT has been placed.

Notwithstanding anything contained herein above, our liability under this Guarantee is limited to Indian Rupees (in figures) (Indian Rupees (in words)) and our guarantee shall remain in

8. force until. (Indicate the date of expiry of bank guarantee) Any claim under this Guarantee must be received by us before the expiry of this Bank Guarantee. If no such claim has been received by us by the said date, the rights of MBMA under this Guarantee will cease. However, if such a claim has been received by us within the said date, all the rights of MBMA under this Guarantee shall be valid and shall not cease until we have satisfied that claim.

In witness whereof, the Bank through its authorized officer has set its hand and stamp on this.....day of .....20 at.....

WITNESS NO. 1

_____

(Signature)
Full name and official
Address (in legible letters)
with Bank stamp

Attorney as per power of
Attorney No.....

WITNESS NO. 2

_____

(Signature)
Full name and official
Address (in legible letters)

_____

(Signature)
Full name, designation and
address (in legible letters)

Dated…….