

Government of Punjab

Tender Notice Reference No. D/3/2022-23/ 16629 dated 14-09-2022

Director Animal Husbandry, Punjab, Livestock Complex, Sector - 68, S.A.S. Nagar- 160062 (Punjab) invites online bids for the following :-

Sr. No.	Name of Item	Quantity
1	Chiller Unit- 200L Capacity	One
2	Chiller Unit- 20 L Capacity	One
3	Oil-Free Rotary Screw Air Compressor	One
4	Oxygen and Nitrogen cylinder	6 each
5	Distribution System For Chiller, Oil Free Rotary Screw Air Compressor, Oxygen and Nitrogen Cylinder	----
6	Steam boiler system	One
7	Peristaltic Pump (Flow Rate- 6 litres per minute)	One
8	UPS Along with Battery Backup	One
9	Automatic Labelling Machine and Printer	One

Closing date & time : 10/10/2022 & 5:00 pm.

For details log onto : <http://eproc.punjab.gov.in> & www.husbandrypunjab.org

NOTE : Any Corrigendum (S) to the Tender Notice Shall be published on the above websites only.

(Dr. Subash Chander)
Director Animal Husbandry,
Punjab.

FAX No: 0172-2217084

Telephone No. 0172- 2217083

Tendering Procedure.

It will be a two stage tendering. The technical tenders and financial/commercial tenders will have to be submitted AS PER E -TENDERING PROCEDURE.

The Technical Bids should contained detail information on the following: -

- Nature of Ownership.
- Composition of the Firm.
- Bankers Name & Address.
- GST No.
- PAN/TAN No.
- Tax clearance.
- Whether Manufacturer/Sole Selling Agent/Distributor/Authorized Dealer.
- Experience in line.
- Capability/Capacity to service the requirement.
- Details of relevant infrastructure.
- Arrangements of after sale service.
- List of Clients.
- Quality Assurance/Monitoring system followed.

Certificates where needed should be attached duly attested.

Financial/Commercial Bids.

Financial Bid should contain the price quoted per unit. The following information should be clearly given in the Financial Bid:-

- Price per Unit.
- Place of Delivery.

- Status of Taxation/Duties etc.
- Lead time/Delivery Period.
- Packing & forwarding.
- Mode of Transportation.
- Payment condition.
- Warranty/Guarantee.
- Validity of Offer.
- Acceptance of Terms of N.I.T.
- Details of Earnest money attached.

Financial Bids will be opened only of those tenderers, who qualify and are found suitable during the processing of Technical Bids.

TERMS AND CONDITIONS

1. E-Tenders are invited for the supply of the items listed from 1 to 9 for the department through the e-tendering process of Govt. of Punjab. For additional details such as items specifications, important dates etc visit the website: <http://eproc.punjab.gov.in> Tender form, specifications, terms and condition can be obtained from this website on payment of Rs. 1000/- (online payment) as per e-tendering procedure.
2. Tender shall be accepted only from manufacturers/authorized dealers. In case the offer is for ISI marked, an attested copy of the ISI License which is valid on the date of offer must accompany the offer.
3. The tenderer must submit the Authorization letter from the Principal Manufactures.
4. The tender will be in double bid system i.e. Technical/Pre-qualification Bids and Financial/Commercial Bids .The Technical Bid should contain comprehensive technical details of the item (Brochure/Catalogue), profile of the manufacturer/supplier, main current clients, experience, tentative delivery period. Financial/Commercial Bids should contain the price (inclusive GST), terms and conditions. Technical Bids would be opened first and Commercial Bids will be opened subsequently of only those tenders who qualify in the Technical Bids. Incomplete/conditional Tenders not received as per e-tendering procedure will be out rightly rejected.
5. Firms/ manufacturer should have annual turnover of minimum 5 crore during last three previous years. In support thereof authenticated copies of Income Tax Returns along with Balance Sheets of Annual Turnover of last 3 financial years duly certified by Chartered accountant. Copy of GSTIN must be attached.
6. The bidder must enclose attested copies/proof of consisting, Pan Card, TAN No., Service Tax No., GST, EPF, Registration/Authorization of the firm etc.

7. The bidder firm should not be black listed/debarred by any department/ organization (Affidavit attached with tender)
8. The e-tenders should be submitted online till 10-10-2022 upto 5:00 pm and the same will be opened on 11-10-2022 at 11:00 am.
9. The e-tender must be accompanied with earnest money amounting Rs.20,000/- (Rs.Twenty Thousand Only) (online payment) as per e-tendering procedure.
10. Tenderers are also required to submit a hard copy of the technical bids of this tender on or before the closing date 10-10-2022, upto 5:00 pm at the Directorate, Animal Husbandry, Punjab , Livestock Complex, Sector-68, SAS Nagar. Each and every page of the Terms and Conditions and tender form should be duly signed by the tenderer.
11. The Director, Animal Husbandry, Punjab, SAS Nagar reserves the right to accept or reject one or all offers/tenders and holds the discretion to increase/decrease the quantity of any or all the items.
12. Samples of items (where required as per specification) should be submitted to the Office of Punjab Veterinary Vaccine Institute, Ludhaiana before closing date of tender 10-10-2022 upto 5:00 pm and sample receipt certificate should be enclosed along with tender documents. Otherwise tender will be rejected straightway.
13. Successful tenderers will have to submit a Security deposit of 10 % (only FDR will be accepted valid upto completion of the Guarantee/ warranty) of the ordered value within the stipulated period of time after issuance of orders.
14. For participating in the above e-tender, the contractors shall have to get themselves registered with <http://eproc.punjab.gov.in>. and get user ID & password. Bidders who have not registered with e-procurement portal need to get registered by paying the requisite registration fee for e-tender participation and obtain Class 3 Digital Signature Certificate (DSC) which are mandatory to participate in the e-tendering process. For any clarification/difficulty regarding e-tendering Process please contact on helpdesk at Punjab State e Governance Society, Plot No. D-241, Industrial Area, Phase 8, Sector 74, Mohali , Phone No. 0172-2970263 & 0172-2970284. E-mail: eproc@punjab.gov.in and niceproc.punjab@gmail.com
15. Bidders are also required to pay tender processing charges of Rs. 2,280/- or an estimated amount as per tender which are to be deposited. (This tender processing fee/charges are other than the firm registration amount for Digital Signature Certificate DSC).
16. E-Tender details can also be obtained from the Departmental website www.husbandrypunjab.org.
17. Rates should be quoted in Indian Rupees only, FOR anywhere in Punjab/Chandigarh.
18. All applicable taxes should be included in the quote.
19. Brochure/leaflets/catalogues for equipments/ items should be submitted alongwith tender.
20. Trouble free performance of the equipment for a minimum period of five years from date of commissioning should be guaranteed . Any defect intimated should be attended to and rectified within 7 days of receipt of such communication within guarantee period otherwise failure to address the complaint within 7 days, a penalty of 1% of the cost of the equipment will be charged The guarantee shall include cost of spares and labour. All cost incurred during guarantee / warranty will be borne by the supplier.
21. After the completion of guarantee / warranty period comprehensive AMC should be quoted separately for next five years in the financial bid.
22. If any bidder gives wrong statement or deviates from any condition, his/her Security Deposit will be forfeited and action will be taken against the concerned bidder. Any bidder supplying any wrong information in the intentions to cheat/commit fraud will be liable for penal action and also liable for blacklisting.

- 23 The Drugs and Cosmetics Act, 1940, if applicable in this tender, the condition of this act must be followed by the firm.
- 24 The supplier should give an undertaking that they will be responsible to carry out the preventive maintenance and to repair the equipment during guarantee and post guarantee period.
- 25 Full details of after sale service offered during the post guarantee period should be furnished along with tender specified.
- 26 Information of actual users of the equipment in India supported with evidences and performances should be furnished along with tender.
- 27 If required the working of the equipment must be demonstrated in any place to be specified by the supplier.
- 28 The supplier shall train to the satisfaction of the purchaser one or two technicians at site/ factory for operating, servicing and undertaking minor repairs without extra cost.
- 29 The security deposited by firms will be released after the Guarantee/ warranty period is over of the machinery/ equipment. For other material security deposited by firms will be released after obtaining the NOC from consignee.
- 30 Public Procurement (Preference to make in Punjab) Order 2019 and Public Procurement (Preference to Make in India) Order 2017, will be applicable on this tender, if any bidder found himself fit under this order then Bidder have to submit an affidavit as per provision of mentioned orders.
- 31 Order of Punjab Government regarding relaxation to Start ups will be applicable on this tender.

Detailed Specification for E-tender

(1) CHILLER UNIT– 200L CAPACITY

(ONE)

Make: Blue Star, Voltas, Reynalds, Thermo Fisher, Lauda, Huber, Julabo, Prasad GWK chillers

General Specifications:

- Should have High cooling outputs , Compact design and versatile options
- Should have Centrifugal High Quality pump with internal Bypass
- Evaporator and Pump should be of Stainless steel construction
- Should have level switch for protection of Pump when water level is low
- Should have integrated water filter and antibacterial additive
- Insulated water tank should be made of SS 316

- The chiller should be installed at our facility as per our requirement- all the necessary accessories required for installation should be provided by the firm.
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Technical Specifications		
SL No	Working temperature min.	5-8°C
1	Working temperature max.	40°C
2	Ambient temperature min.	25°C
3	Ambient temperature max.	45 - 50 °C
4	Temperature stability	±1K
5	Should have Aluminium Condenser for good temperature Exchange	
6	Internal tubings should be Electric welded Polymer tubing up to 16 bar/ Non metallic	
7	Internal Parts Should be made of Stainless SS 316	
8	Exterior Parts should be made of GI Powder coated Body	
9	Volume water reservoir (SS Tank)	200 L
10	Cooling output at 25°C water outlet temperature	50-65 kW
11	Cooling output at 20°C water outlet temperature	55 to 65 kW
12	Cooling output at 15°C water outlet temperature	50 to 60kW
13	Cooling output at 10°C water outlet temperature	55 kW / 15 Tons
14	Noise level	Less than or equal to 70 dB(A)
15	Power consumption	10 to 15 kW
16	Pump pressure max. /SS Construction	4-5 bar
17	Pump flow max. (pressure)	200- 230 L/min
18	Pump connection thread	HT DN40
19	Safety protection class	IP54
20	Operating Voltage	400V, 50Hz
21	Control : Safety Device, water level Control, Temperature Level control Refrigerator: High Pressure , Low Pressure cut off and other standard protections for systems.	
22	Power Supply Cable: To be drawn by the supplier company as per the requirement (Power is available at about 20 Meter Distance)	

- Unit shall be used for cooling 800 litres and 80 litres fermenter, inactivation vessel, Adjuvant vessel and WFI system.
- The Chiller shall be Air Cooled type with multiple / Single Compressors, Air Cooled Condenser, In-built weather proof Electrical Panel, Electrical Isolators, all electrical

parts to conform IP-55, transformer for control circuit, service modem connectivity, open protocol master panel for hook up with BMS with network ready, server centric and web base Client Compatibility.

- The unit should contain a flow control with flow read out that allows adjusting the flow to meet the application requirements & monitor the flow rate to application and set flow alarms via controller.
- The controller should house an LCD multi line alphanumeric display.
- The controller should also have an LCD level indicator to identify the level of internal fluid.
- Anti-Drain back feature should be available that prevents fluid from flowing back to the reservoir when the chiller is installed.
- Auto Refill feature should be available that ensures automatic refilling from a facility-supplied water source to ensure that the proper fluid level is maintained.
- Analog and digital communications option should be available for remote operation, monitoring and data logging. Should include a Full flow filter to ensure clean fluid to protect the application and maximize recirculation system life
- Should have an easily removable condenser grill and air filter allow for quick and simple cleaning to optimize chiller performance and maximize component life.
- Should house an integrated funnel fill for easy filling.
- A drain port should be located at the back of the unit for operator convenience.
- The design should allow two sides of the unit to be blocked, allowing placement in a corner while maintaining full refrigeration performance.
- There should be external piping and fittings from chiller to external reservoir to process and back, top up line for reservoir and drain line from the reservoir, non-return valve, solenoid valve, pressure gauges etc. And piping to the all the vessels of use along with the return piping. All the welding should be orbital welding.
- Civil/structural work included in the installation and commissioning.
- Compliance - CE
- 2 years warranty.

The Scope of the work include the following:

- a. Supply, Design, Installation and Commissioning of the Chiller Unit, interconnection piping & fitting (external piping and fittings from chiller to external reservoir to process and back, top up line for reservoir and drain line from the reservoir, Non Return Valve, Solenoid Valve, Pressure gauges etc. And piping to the all the vessels of use along with the return piping.) including the base frames or brackets & Control Panel etc.
- b. Utility equipment supplier of chiller to provide utility piping with insulation wherever required with terminal valve up to 1 (One) meter near the equipment location.
- c. Supply of all necessary instrumentation.

- d. Civil / Structural work included in the installation and commissioning.
- e. Vendor shall quote the necessary essential spares required for one year along with the offer.

- f. Provide service in case of breakdown within 48hrs of call.
- g. Provide preventive maintenance once a month during the warranty period.

Inspection and testing:

- A. The system shall be offered for visual performance trials & hydrotest at the manufacturer's premises for inspection by client / authorized representative.
- B. Client / authorized representative shall at all times have an access to supplier's / suppliers sub contractor's workshop to witness fabrication stages.
- C. Internal inspection record shall be maintained by supplier / suppliers sub-contractor at all times, if any stages are found lacking by way of proper records, client reserves the right to ask supplier to modify / amend the fabrication stage at no extra cost.
- D. All material test certificates shall be reviewed by client during FAT which will be conducted at vendor's manufacturing facility at the expenses of manufacturer/vendor by at least three representatives of Animal Husbandry department, Punjab.
- E. Performance trial shall be done at Vendors premises with qualified water and shall be performed at site after installation.

Guarantee:

- A. The system supplied shall be guaranteed for trouble free operation for the period of 24 months from the date of commissioning. All defects due to faulty design, material and workmanship and also the performance deficiencies which may come up during guarantee period shall be rectified by the vendor at his cost and to the purchaser's satisfaction.
- B. All guarantees from equipment suppliers will be vested in the client.
- C. Where damage is caused to any other item by any failure of the item guaranteed, then the guarantee shall also include the costs incurred in rectifying that damage.

Documentation:

- A. P&ID clearly demarcating Battery limit terminations.
- B. GA Drawing.
- C. Equipment Layout.
- D. Foundation Drawings.
- E. Quality Assurance Plan.
- F. SLD for electrical circuit.

- G. GA & wiring diagram of control panel.
- H. PLC control logic, OIU Screens. Operators guide & Ladder logic.
- I. Piping drawing within battery limit.
- J. Design Qualification Document

During commissioning activities:

- K. Operation & maintenance manual for all mechanical, electrical & instrumentation items.
- L. Characteristic performance curves for all pumps, blowers.
- M. Calibration certificates for all instruments.
- N. Operation & ladder logic details for PLC.
- O. Internal inspections & acceptance reports.
- P. Test & Guarantee certificates.
- Q. Operation Manual for programming software of PLC & OIU.
- R. D.Q,I.Q, & P.Q documents of items system being supplied by tenderer.

VENDOR QUALIFICATION

- Trouble free performance of the project for a minimum period of two years from date of commissioning should be guaranteed. Any defect intimated should be attended to and rectified within 15 days of receipt of such communication within guarantee period. The guarantee shall include cost of spares and labour.
- Vendor should have been manufacturing and supplying the system for at least last 3 financial years.
- User reference list of clients complying with GMP.
- Vendor should be either manufacturer or authorized agent of the manufacturer and should submit authority letter from the manufacturer to participate in this particular tender.

(2) CHILLER UNIT- 20 L CAPACITY (ONE)

Make:Blue Star, Voltas, Reynalds, Thermo Fisher, Lauda, Huber, Julabo, Prasad GWK chillers

- Chiller of Capacity – 20 litres
- For the temperature maintainance of 80 litre capacity seed fermentor and 800 litre Capacity production fermentor.

General Specifications:

- Should have High cooling outputs , Compact design and versatile options
- Should have Centrifugal High Quality pump with internal Bypass
- Evaporator and Pump should be of Stainless steel construction
- Should have level switch for protection of Pump when water level is low
- Should have integrated water filter and antibacterial additive
- Insulated water tank should be made of SS 316
- The Chiller should be installed at our facility as the above requirement. All the necessary accessories, piping and attachments to the fermentor required for installation should be provided by the firm.

Technical Specifications		
SL No	Working temperature min.	5-8°C
1	Working temperature max.	40°C
2	Ambient temperature min.	25°C
3	Ambient temperature max.	45 - 50 °C
4	Temperature stability	±1K
5	Should have Aluminium Condenser for good temperature Exchange	
6	Internal Tubings should be Electric welded Polymer tubing up to 16 bar/ Non metallic	
7	Internal Parts Should be made of StainlessSS 316	
8	Exterior Parts should be made of GI Powder coated Body	
9	Volume water reservoir (SS Tank)	20L

(3) OIL-FREE ROTARY SCREW AIR COMPRESSOR (ONE)

[Along with Refrigerated air dryer system and Receiving tank]

Make:Kirloskar, Ingersoll Rand, ElgiEquipment, Atlas Copco, Kaeser

The 100% Oil free, silenced, rotary screw air compressor with completely wired and equipped with all interconnecting pipe work and fittings, including a direct driven compressor element, a totally enclosed fan-cooled electric motor, cooling and regulation systems. Compressed air is used in Fermentor systems, Autoclaves, Filling machine, WFI, PSG.

- CAPACITY : 150-200 CFM

- WORKING PRESSURE : 8 to 9 bar
(Usual pressure is around 7.4 bars, most valves operate at 6 bar pressure)

The compressors enclosed in sound-insulated bodywork. The front panel comprises of an electronic control module including the start and stop buttons. An emergency stop button is also provided. It should be provided with an air dryer which removes moisture from the compressed air by cooling the air to near freezing point and automatically draining the condensate (one mechanical automatic drain for the receiver tank too).

All rotating components should be totally enclosed and protected against contamination to ensure long and reliable operation. The compressor cooling system is sized to run perfectly in ambient temperatures up to 46°C/115°F.

AIR COMPRESSOR TECHNICAL SPECIFICATIONS		
Sr.No.	Particulars	Requirement Specifications
1.1	EQUIPMENT	<ul style="list-style-type: none"> a. Type: Two stage, Oil-free, GMP compliant Rotary Screw Compressor b. Quantity: 1 c. Service: Continuous d. Working pressure: 8 to 9 bar e. Air quality should be suitable for pharmaceutical industry
1.2	PURPOSE	Compressed air is used in Fermentor systems, Autoclaves, Filling machine, WFI along with distribution system,
1.3	SCOPE OF THE WORK	<ul style="list-style-type: none"> a. Supply, Design Installation and Commissioning of Air Compressor system including oil free lubricated rotary screw compressors, air receiver, refrigerated air dryers, interconnection piping & fitting, control panel etc. b. Supply of all necessary instrumentation. c. Vendor shall quote the necessary critical spares required for one year along with the offer. d. Provide service in case of breakdown within 48hrs of call. e. Provide preventive maintenance once a month during the warranty period.

1.4	SYSTEM REQUIREMENT	<ul style="list-style-type: none"> a. Single skid mounted b. Single stage, Air Cooled, Oil lubricated, Rotary Screw Air Compressor, Pharma grade Air Quality c. Suction Air filter d. Full load and no-load regulator e. Acoustic Canopy/Inlet Silencer & Discharge Silencer to reduce circulation noise and vibration f. Inter and after cooler for cooling the air g. Common Refrigerated air dryer (which removes moisture from the compressed air by cooling the air to near freezing point and automatically draining the condensate) & 1000lts Air Receiver Tank for compressor h. Refrigerated Cooler to be provided. i. The compressor cooling system is sized to run perfectly in ambient temperatures up to 46°C/115°F j. The system shall be equipped with suitable Anti vibration pads, if required k. Three-phase squirrel cage Induction motors with VFD for load control l. All working parts of the compressor shall have easy accessibility for inspection /maintenance.
1.5	POWER SUPPLY	Electric Power: 415VAC ±5%, 3 Phase +N+E, 50 Hz
1.6	STANDARDS/ REGULATIONS/ GUIDELINES	<ul style="list-style-type: none"> a. International Electro Technical Commission (IEC) standards b. All electrical components shall be housed in a sheet steel enclosure (IP 55) c. Air receiver shall be as per the Pressure vessel design code IS: 2825 d. Air compressor shall be designed as per latest code & standard
1.7	F cast AIR FILTER with differential pressure gauge	<p>Vendor has to specify the following:</p> <ul style="list-style-type: none"> a. Type of filter UPTO 290CFM b. 7-16 BARG Pressure drop across the filter c. MOC of filter
2.0	AIR DRYER	<ul style="list-style-type: none"> a. Type:NON CYCLING Refrigerant type air dryer b. 282CFM UPTO 14BARG c. MAX INLET TEMP 60C Vendor To Specify

2.1	AIR RECEIVER	<p>a. Volume of air receiver: 1000 litres and working pressure 12-13 BARG</p> <p>b. Air receiver MOC shall be MS with automatic drain and other accessories (safety relief valve, pressure gauge etc.)</p>
2.2	CONTROL PANEL	<p>a. The front panel comprises of an electronic control module including the Start and Stop buttons</p> <p>b. An Emergency Stop button should also be provided</p> <p>c. The following specifications for the Control Panel shall be met:</p> <ul style="list-style-type: none"> • First stage discharge temperature, second stage inlet temp and second stage discharge temperature • Oil filter discharge temperature • Suitable Star Delta Starter with contractor and relays. • Dryer On/Off button. • Regulator with Timer and Relays. • Hour-meter to indicate total hours of operation. • Start/Stop button with lamp indicating compressor operation. • Indicator for auto operation. • Dew point indicator. • Easy access for service points.
2.3	ALARMS & SAFETY FEATURES	<p>The control panel of Air Compressor shall have following alarms and safety features:</p> <p>a. Motor overload</p> <p>b. Outlet air temp. high</p>
2.4	RECOMMENDED MAKES	<ul style="list-style-type: none"> • ELGI • ATLAS COPCO • KAESER • IR

CLASS	SOLID PARTICLES, PARTICLE SIZE, d (mm)			HUMIDITY AND LIQUID WATER		OIL	
	0.10<d≤0.5	0.5<d≤1.0	1.0<d≤5.0	PRESSURE DEW POINT		TOTAL CONCENTRATION: AEROSOL, LIQUID AND VAPOR	
	MAXIMUM NUMBER OF PARTICLES PER m ³			°C	°F	mg/m ³	ppm/w/w
0	As Specified			As Specified		As Specified	
1	100	1	0	≤-70	-94	≤0.01	≤0.008
2	100,000	1,000	10	≤-40	-40	≤0.1	≤0.08
3	-	10,000	500	≤-20	-4	≤1	≤0.8
4	-	-	1,000	≤+3	38	≤5	≤4
5	-	-	20,000	≤+7	45		
6				≤+10	50		
				LIQUID WATER CONTENT C _w g/m ³			
7				C _w ≤0.5			
8				0.5<C _w ≤5			
9				5<C _w ≤10			
PER ISO8573-1: 2001(E)							

The Scope of the work include the following:

- g. Supply, Design Installation and Commissioning of the compressor Unit, interconnection piping & fitting .
 - i. Supply of all necessary instrumentation.
 - j. Civil / Structural work included in the installation and commissioning.
 - k. Vendor shall quote the necessary essential spares required for one year along with the offer.
 - l. Provide service in case of breakdown within 48hrs of call.
- Provide preventive maintenance once a month during the warranty period.

Inspection and testing:

- A. The system shall be offered for visual performance trials & hydrotest at the manufacturer's premises for inspection by client / authorized representative.
- B. Client / authorized representative shall at all times have an access to supplier's / suppliers sub contractor's workshop to witness fabrication stages.
- C. Internal inspection record shall be maintained by supplier / suppliers sub-contractor at all times, if any stages are found lacking by way of proper records, client reserves the right to ask supplier to modify / amend the fabrication stage at no extra cost.
- D. All material test certificates shall be reviewed by client during FAT which will be conducted at vendor's manufacturing facility at the expenses of manufacturer/vendor by at least two representatives of PVVI, Punjab.
- E. Performance trial shall be done at Vendors premises with qualified water and shall be performed at site after installation.

Guarantee:

- A. The system supplied shall be guaranteed for trouble free operation for the period of 24 months from the date of commissioning. All defects due to faulty design, material and workmanship and also the performance deficiencies which may come up during guarantee period shall be rectified by the vendor at this cost to the purchaser's satisfaction.
- B. All guarantees from equipment suppliers will be vested in the client.
- C. Where damage is caused to any other item by any failure of the item guaranteed, then the guarantee shall also include the costs incurred in rectifying that damage.

Documentation:

- A. P&ID clearly demarcating Battery limit terminations.
- B. GA Drawing.
- C. Equipment Layout.
- D. Foundation Drawings.
- E. Quality Assurance Plan.
- F. SLD for electrical circuit.
- G. GA & wiring diagram of control panel.
- H. Piping drawing within battery limit.
- I. Design Qualification Document

During commissioning activities:

- J. Operation & maintenance manual for all mechanical, electrical & instrumentation items.
- K. Characteristic performance curves for all pumps, blowers.
- L. Calibration certificates for all instruments.
- M. Internal inspections & acceptance reports.
- N. Test & Guarantee certificates.
- O. Operation Manual for programming software of PLC & OIU.
- P. As built drawings as listed in item B.
- Q. [D.Q, I.Q, O.Q, & P.Q] documents of items system being supplied by tenderer.

VENDOR QUALIFICATION

- Trouble free performance of the project for a minimum period of two years from date of commissioning should be guaranteed. Any defect intimated should be attended to and rectified within 15 days of receipt of such communication within guarantee period. The guarantee shall include cost of spares and labor.
- Vendor should have been manufacturing and supplying the system for atleast last 3 financial years

- User reference list of clients complying with GMP
- At least one site visit by client to the manufacturer establishment.
- Vendor should be either manufacturer or authorized agent of the manufacturer and should submit authority letter from the manufacturer to participate in this particular tender.

(4) Oxygen and Nitrogen cylinder

(6 each)

- 12 cylinders of capacity 1.25 cubic meters (18kg gas)
- Test pressure 250 bar.
- Working pressure 140 bar.
- Cylinders should be provided along with regulators.
- There must be 99.99% purity of both the oxygen and nitrogen gases
- Civil / Structural work included in the installation and commissioning.
- Vendor should be either manufacturer or authorized agent of the manufacturer and should submit authority letter from the manufacturer to participate in this particular tender.

(5) DISTRIBUTION SYSTEM FOR CHILLER, OIL FREE ROTARY SCREW AIR COMPRESSOR, OXYGEN AND NITROGEN CYLINDER

Note – For distribution system for chiller, oil free rotary screw air compressor, oxygen and nitrogen cylinder the vendors to visit the site of installation at Punjab Veterinary Vaccine Institute, PAU Campus, Ferozpur Road, Ludhiana, Punjab, on any working day.

(Contact – 0161-2401499)

(i) For Chiller

The distribution system for Connectivity of pipe from the generation systems to other rooms where fermenters, inactivation vessel, adjuvant vessel, WFI system are installed, which requires chilled water supply, it should include the quote. However for additional piping separate rate for supply line could be quoted per ft., so that in the event of increase or decrease, payment on actual is given. Fermentor system includes 800 litres Fermentor, 80 litres seedfermentor, inactivation vessel, adjuvant vessel and blending vessel etc.

- Equipment supplier will connect the last 1 (One) meter connection to the equipment. The rates for supply line should be quoted per ft. and the actual will be paid or measurement.
- Pendant if needed to be provided by the vendor.
- The items in the given table is an approximate, it can be changed according to the layout.

CHILLED WATER LINE			
1	SS 316L Tube 16 swg Size - 1.5" OD	136	Mtrs.
2	SS 316L Tube 16 swg Size - 1.0" OD	18	Mtrs.
3	SS 316L Tube 16 swg Size - 3/4" OD	12	Nos.
4	SS 316L Bend 16 swg Size - 1.5" OD	44	Nos.
5	SS 316L Bend 16 swg Size - 1.0" OD	28	Nos.
6	SS 316L Bend 16 swg Size - 3/4" OD	16	Nos.
7	SS 316L Unequal Tee Size - 1.5"x 1.0" OD	6	Nos.
8	SS 316L Unequal Tee Size - 1.5"x 3/4" OD	4	Nos.
9	SS 316L Pipe support 1.5" OD	68	Nos.
10	SS 316L Pipe support 1.0" OD	9	Nos.
11	SS 316L Pipe support 3/4" OD	6	Nos.
12	SS 304 Square pipes for pipes supports 50" x 50"	12	Mtrs.

(ii) For Air Compressor

a. The distribution system for Connectivity of pipe from the generation system to other rooms where fermentor system, liquid filling machine, autoclaves and WFI along with distribution system, PSG and RO/EDI distribution system are installed, which requires compressed air supply, it should include the quote. However for additional piping separate rate for supply line could be quoted per ft., so that in the event of increase or decrease, payment on actual is given. Fermentor system includes 800 litres Fermentor, 80 litres seedfermentor, media vessel, inactivation vessel, adjuvant vessel and blending vessel etc.

- Utility equipment supplier of compressor to provide utility piping required with terminal valve up to 1 (One) meter near the equipment location.
- Equipment supplier will connect the last 1 (One) meter connection to the equipment.
- The rates for supply line should be quoted per ft. and the actual will be paid or measurement.
- Pendent if needed to be provided by the vendor.
- The items in the given table is an approximate, it can be changed according to the layout.

Compressed AIR LINE			
1	SS 316L Tube 16 swg Size - 1,5" OD	76	Mtrs.
2	SS 316L Tube 16 swg Size - 1.0" OD	24	Mtrs.
3	SS 316L Tube 16 swg Size - 3/4" OD	6	Mtrs.
4	SS 316L Tube 16 swg Size - 1/2" OD	12	Mtrs.
5	SS 316L Bend 16 swg Size - 1.5" OD	33	Nos.
6	SS 316L Bend 16 swg Size - 1.0" OD	29	Nos.

7	SS 316L Bend 16 swg Size - 3/4" OD	10	Nos.
8	SS 316L Bend 16 swg Size - 1/2" OD	13	Nos.
9	SS 316L Unequal Tee Size - 1.5"x 3/4" OD	2	Nos.
10	SS 316L Unequal Tee Size - 1.5"x 1/2" OD	3	Nos.
11	SS 316L Unequal Tee Size - 1.5"x 1.0" OD	6	Nos.
12	SS 316L Equal Tee Size - 1.5"x 1.5" OD	1	Nos.
13	SS 316L Pipe support 1.5" OD	38	Nos.
14	SS 316L Pipe support 1.0" OD	12	Nos.
15	SS 316L Pipe support 3/4" OD	3	Nos.
16	SS 316L Pipe support 1/2" OD	6	Nos.
17	SS 304 Square pipes for pipes supports 50" x 50"	12	Mtrs

(iii) Oxygen and Nitrogen cylinder

The distribution piping in clean room area must be SS316L.

There should be independent distribution system of O2 and N2 gas upto the utility point i.e. seed fermentor and production fermentor and nitrogen gas supply to liquid filling machine.

The distribution piping for Connectivity of pipe (as per GMP standard) from the cylinders to other rooms where fermentors and other equipments are installed required, it should include the quote. However for additional piping separate rate for supply line could be quoted per ft., so that in the event of increase or decrease, payment on actual is given.

- Distribution piping will connect to the cylinders and all the items required will be provided by the distribution system vendor.

-The rates for supply line should be quoted per ft. and the actual will be paid or measurement.

- The items in the given table is an approximate, it can be changed according to the layout.

OXYGEN AND NITROGEN LINE			
1	SS 316L Tube 16 swg Size - 3/4" OD	54	Mtrs.
2	SS 316L Tube 16 swg Size - 1/2" OD	12	Nos.
3	SS 316L Bend 16 swg Size - 3/4" OD	32	Nos.
4	SS 316L Bend 16 swg Size - 1/2" OD	12	Nos.
5	SS 316L Equal Tee Size - 3/4"x 3/4" OD	2	Nos.
6	SS 316L Unequal Tee Size - 3/4"x 1/2" OD	3	Nos.
7	SS 316L Pipe support 3/4" OD	27	Nos.
8	SS 316L Pipe support 1/2" OD	6	Nos.
9	SS 304 Square pipes for pipes supports 50" x 50"	12	Mtrs.

Inspection and testing:

- I. Client / authorized representative shall at all times have an access to supplier's / suppliers sub contractor's workshop to witness fabrication stages.
- II. Internal inspection record shall be maintained by supplier / suppliers sub-contractor at all times, if any stages are found lacking by way of proper records, client reserves the right to ask supplier to modify / amend the fabrication stage at no extra cost.
- III. All material test certificates shall be reviewed by client during SAT which will be conducted at installation facility.

Guarantee:

- I. The system supplied shall be guaranteed for trouble free operation for the period of 24 months from the date of commissioning. All defects due to faulty design, material and workmanship and also the performance deficiencies which may come up during guarantee period shall be rectified by the vendor at his cost and to the purchaser's satisfaction.
- II. All guarantees from equipment suppliers will be vested in the client.
- III. Where damage is caused to any other item by any failure of the item guaranteed, then the guarantee shall also include the costs incurred in rectifying that damage.

Documentation:

- P&ID clearly demarcating Battery limit terminations.
- GA Drawing.
- Distribution Layout.
- Foundation Drawings.
- Quality Assurance Plan.
- SLD for electrical circuit.
- GA & wiring diagram of control panel.
- PLC control logic, OIU Screens. Operators guide & Ladder logic.
- Piping drawing within battery limit.
- Design Qualification Document.

During commissioning activities:

- Operation & maintenance manual for all mechanical, electrical & instrumentation items.
- Characteristic performance curves for all pumps, blowers.
- Calibration certificates for all instruments.
- Operation & ladder logic details for PLC.
- Internal inspections & acceptance reports.
- Test & Guarantee certificates.
- Operation Manual for programming software of PLC & OIU.
- [D.Q,I.Q, & P.Q] documents of items system being supplied by tenderer.

VENDOR QUALIFICATION

- Trouble free performance of the project for a minimum period of two years from date of commissioning should be guaranteed. Any defect intimated should be attended to and rectified within 15 days of receipt of such communication within guarantee period. The guarantee shall include cost of spares and labor.
- Vendor should have been manufacturing and supplying the system for at least last 3 financial years
- User reference list of clients complying with GMP
- Vendor should be either manufacturer or authorized agent of the manufacturer and should submit authority letter from the manufacturer to participate in this particular tender.

(6) STEAM BOILER SYSTEM

(ONE)

Make:Thermax, Reynalds, Thermo Fisher,Forbes Marshal

Boiler system to be used for Fermenter system,inactivation vessel,adjuvant vessel, 4 autoclaves in the Bacterial wing, WFI system along with distribution system RO/EDI distriobution system and PSG.

- Should be a Non-IBR Coil type steam boiler having generating capacity of 500 kgs/hr, steam output-10.54 Kg/cm² , HSD fired steam boiler

Steam Output (F&A 100*C)	500 Kg/hr
Steam Pressure (SVLOP)	10.54 Kg/cm ² g
Efficiency* Oil	88%

Fuel Consumption HSD	45 kg/hr
Total Connected Load (Including Control Panel)	6.87 kW

- Should be having double jacketed air casting with an aluminum radiator to enclose the pressure parts and serve as an integral combustion air preheater with steam separator
- Quality of combustion should be consistent having assured rate of output
- Should operate at atmospheric pressure hence water gets de-aerated. Atmospheric economizer and heat optimizer to Pre- Heater feed water
- Having low blower power consumption, easy to de-soot and no oxygen pitting
- The unit should be having counter flow pattern, pipe inlet temperature under check, pipe-in-pipe design, fully welded so that no air leakage to pump suction
- Equipment safety and operator safety measures must be of utmost importance like high steam temperature switch, blow down valve limit switch, low/no water switch, fuel low temperature interlock, flame monitor, OPH relief valve, OPH pressure switch, steam safety valve, feed water pump relief valve etc.
- Must be a dust protector pre-wired control panel with necessary switch gear power and Controlcircuitly
- Fuel temperature control within +/- 3°C

The Scope of the work include the following:

- a. Supply, Design Installation and Commissioning of the Boiler Unit, interconnection piping & fitting to the above said required equipments
- b. Supply and Fitting of fuel gas chimney at approx. 30 feet height including fuel gas duct with MS ropes and chimney top diameter 350 mm has to be done by the supplier
- c. Supply of all necessary instrumentation.
- d. Civil / Structural work included in the installation and commissioning.
- e. Vendor shall quote the necessary essential spares required for one year along with the offer.
- f. Provide service in case of breakdown within 48hrs of call.
- g. Provide preventive maintenance once a month during the warranty period.

Guarantee:

1. The system supplied shall be guaranteed for trouble free operation for the period of 24 months from the date of commissioning. All defects due to faulty design, material and workmanship and also the performance deficiencies which may come up during guarantee period shall be rectified by the vendor at his cost and to the purchaser's satisfaction.
2. All guarantees from equipment suppliers will be vested in the client.
3. Where damage is caused to any other item by any failure of the item guaranteed, then the guarantee shall also include the costs incurred in rectifying that damage.

4. During commissioning, operation & maintenance manual for all mechanical, electrical & instrumentation items will be provided and one person of the institute must be trained to operate the equipment.

VENDOR QUALIFICATION

- Trouble free performance of the project for a minimum period of two years from date of commissioning should be guaranteed. Any defect intimated should be attended to and rectified within 15 days of receipt of such communication within guarantee period. The guarantee shall include cost of spares and labor.
- Vendor should have been manufacturing and supplying the system for at least last 3 financial years
- User reference list of clients complying with GMP
- Vendor should be either manufacturer or authorized agent of the manufacturer and should submit authority letter from the manufacturer to participate in this particular tender.

(7) Peristaltic Pump (Flow Rate- 6 litres per minute)

[One]

Make:MRC Equipment, Lead fluid equipment, Master flex, Cole Parmer, Watson Marlow

1	Peristaltic Pump	Technical Specifications <u>Features and functions</u> <ul style="list-style-type: none"> ● Prime button for fast filling and emptying ● Memory function: Store the speed and the address of the pump ● Communication function: Realize the computer control through RS485 interface ● Display: should be 3 digits LED displays the speed of the pump ● External control input: Control the speed, start/stop and direction of the pump ● Suitable for different pump heads and tubing for multiple application ● High output torque which should drive double pump heads ● Brushless DC motor, high output torque and free maintenance ● Operation mode: Switch, button and knob. Easy to operate. <u>Specifications</u> <ol style="list-style-type: none"> 1.Speed 60 to 600rpm, reversible 2.Speed accuracy $\pm 1.0\%$ 3.Speed resolution 1.0rpm 4.Output torque ≥ 1.50 N-M 5.External control: Start/stop & cw/ccw control, 0.5 to 5V, 1 to 10V, 4 to 20mA and 1-10kHz speed control 6. Communication interface RS485 7.Power supply AC 176 - 264V 50Hz/60Hz 8.Power consumption ≤ 200W 9.Operating condition Temperature 0 to 40°C, Relative humidity < 80% 	1 Number
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		<p>10.IP rating IP 31</p> <p><u>Pump Head</u></p> <ol style="list-style-type: none"> 1. Flow Rate: 200 ml/min to 6000 ml/min 2. Tubing 15# 24# 35# 36# 3. Pump heads and tubing suitable for multiple application 4. Pump head suitable to Control the speed, start/stop and direction of the pump. <p><u>Silicone Tubing – 25 meters</u></p> <ul style="list-style-type: none"> • Slightly greater clarity than peroxide-cured tubing • Smooth surfaces; lower protein binding levels • Fewer potential leachables • Ideal for pharmaceutical and biotechnology use • Platinum-cured silicone tubing, • Maximum Flow rate should be 6000 mL per Minute. • Should withstand maximum of 1.0 Bar Pressure • Size: Suitable for the pump to have a maximum flow rate. 	
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Guarantee:

1. The system supplied shall be guaranteed for trouble free operation for the period of 24 months from the date of commissioning. All defects due to faulty design, material and workmanship and also the performance deficiencies which may come up during guarantee period shall be rectified by the vendor at his cost and to the purchaser's satisfaction.
2. All guarantees from equipment suppliers will be vested in the client.
3. Where damage is caused to any other item by any failure of the item guaranteed, then the guarantee shall also include the costs incurred in rectifying that damage.
4. During commissioning, operation & maintenance manual for all mechanical, electrical & Instrumentation items will be provided and one person of the institute must be trained to operate the equipment.

(8) UPS ALONG WITH BATTERY BACKUP

(ONE)

Make: Vertiv, Eaton, APC, GE

UPS is to be used for Fermenter system, WFI distribution system and RO/EDI distribution system.

- Capacity 15KVA /13.5KW
- Voltage range 110V 276V
- Can be connected as three phase input single phase out put & single in single out (Combo)
- Output power factor 0.9 (15KVA ,13KW)
- Voltage regulation less than 1%
- Output waveform pure sine wave
- Parallel mode up to 2 units
- LCD display with measurements input output battery voltage alarms codes.
- UPS Communication with computers
- Operating temperature 0 – 40degree
- Noise level less than 55DB @ front one meter
- Standards –ROHS
- Safety IEC 62040-1
- Battery VAH 12000
- SNMP including
- Complete electrical connections to the above said equipments included.

Warranty 24 months: The system supplied shall be guaranteed for trouble free operation for the period of 24 months from the date of commissioning. All defects due to faulty design, material and workmanship and also the performance deficiencies which may come up during guarantee period shall be rectified by the vendor at his cost and to the purchaser's satisfaction.

(9) AUTOMATIC LABELLING MACHINE AND PRINTER**(ONE)**

Make: Interpack, Prismtech, Skenam

To apply self-adhesive labels on body of round cylindrical polypropylene bottles and to print the labels.

<u>SECTION: LABEL APPLICATION (BODY)</u>	
LABELING HEAD MODEL	SI 150 (LH/RH)
DISPENSING SPEED	UPTO 30m/min.
MAX LABEL SIZE/HEIGHT	150mm
LABEL SENSOR	FORK TYPE, MAKE – LEUZE
PRODUCT SENSOR	RETRO-REFLECTIVE TYPE, MAKE-LEUZE
LABEL ROLL OD	280mm MAX.
LABEL ROLL ID	76mm

<u>SECTION: CONTROLLING SYSTEM AND OTHER ELECTRICAL ASSESSORIES.</u>	
CONTROLLING SYSTEM	SERVO -AB
HMI	TOUCH SCREEN – 7”
POWER SUPPLY	SINGLE PHASE-240VAC, 50 HZ
ENCODER FUNCTION	AVAILABLE, MAKE- KUBLER
LABEL PRE-EJECTION	ADJUSTABLE
APPLICATION DELAY	ADJUSTABLE
NO OF RECEIPIES	25
PRODUCT COUNTING	AVAILABLE
AC MOTORS	MAKE – BONFIGLIOLI
AC DRIVES	MAKE – DELTA

Printer: Machine enables to print the manufacturing batch number, date of manufacturing, expiry date on the labels.

Sr. No.	Description	Specifications
1	CONTROLLER BOARD I TECH ALONG WITH	PRINT HEAD G SERIES I TECH STANDARD SINGLE HEAD PLATE 152MM STANDARD SINGLE PRINT HEAD CABLE -5M GROUNDING CABLE KIT 15 POLE I/O CABLE CABLE, ETHERNET CROSSOVER. HARDWARE HEAD PLATE MTGS STANDARD ADJUSTMENT KIT
2	CONSUMABLES	DOMINO INK CARTRIDGE SOLVENT BASED 42ML BLACK BKT118 G- SERIES (PACK OF 1)
3	ADDITIONAL ACCESSORIES	PRODUCT DETECTOR SLOT 2MM ENCODER KIT 5M PHARMA VALIDATION SERVICE

Warranty 24 months: The system supplied shall be guaranteed for trouble free operation for the period of 24 months from the date of commissioning. All defects due to faulty design, material and workmanship and also the performance deficiencies which may come up during guarantee period shall be rectified by the vendor at his cost and to the purchaser's satisfaction.

