



ERNAKULAM REGIONAL CO-OPERATIVE MILK PRODUCERS' UNION LTD.
P.B.No.2212, Edappally, Kochi - 682 024.

EU:PUR:65:2009-10:

25.03.2010

QUOTATION NOTICE

Ernakulam Regional Co-operative Milk Producers' Union Ltd invites quotations from reputed manufacturers for the supply, installation and commissioning of PHE type Condenser having capacity of 250 TR at -10°C with Cooling Tower having capacity of 300 TR on turn key basis for our Ernakulam Dairy at Thripunithura. Tenders should be submitted in two-bid system containing two parts - Techno-Commercial Bid and Price Bid/Financial Bid.

Tender Reference : EU:PUR:65:2009-10: dt25.03.2010

1. Last Date /Time for submission : 12-04-2010, 12.00 Noon
2. Date / Time of opening : 12-04-2010, 02.00 PM
Technical Tender
3. Place of opening tender : Head Office, Edappally.

Tender Documents can be had from our office or can be down loaded from our web site www.milma.com. For further details & clarifications please contact at 0484-2541193, 0484-65533184.

Managing Director

IMPORTANT: If at any time during the finalization of the tender wordings are found to be different to that of the printed copy available at ERCMPU Head office, ERCMPU reserves to reject the tender summarily.

Copy to: All Notice Boards, General Manager, Ernakulam Dairy,
Manager (P&M), Manager. (P&M), EKM Dairy, MF/OC.

Signature of the tenderer

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Scope of work:

Supply installation and commissioning of Semi Welded Stainless Steel Plate heat exchanger type condenser of 250TR capacity, FRP cooling tower of 300TR and condenser water pumps (1W+1S) for Refrigeration Plant (Ammonia) 1 set

Technical specification:

The existing Refrigeration plant at Ernakulam Dairy, Tripunithura has been provided with 3 Nos. of Kirloskar Ammonia Compressors (KC-6) working at 1000 RPM and 2 Nos. Booster Compressors (KC-2) working at 600 RPM. The proposed semi welded SS PHE condenser should meet the entire heat rejection load of above Compressors working at – 10 Degree Centigrade suction Temp. (SST) and +40 Degree Centigrade condensing temp. (SDT). The heat rejection capacity of the proposed PHE condenser shall of 756000 Kcal/hr minimum. The detailed design of the condenser is the responsibility of the contractor. One number GRP Cooling Tower capacity of 907200 Kcal/hr [300TR) should be provided to meet the total heat rejection loads of above PHE Condenser and the Compressors Head cooling loads of all above compressors. 25% Extra capacities shall be provided both the Units to take care of any changes in Atmospheric parameters. 2 Nos. Condenser Pump of suitable capacity (1 R + 1S) and pipe lines with all controls valves shall be provided for the circulation of water between PHE Condenser and FRP Cooling Towers and Compressors Head Cooling. All the Units shall be new models of respective manufactures with highest working /heat transfer efficiency. The necessary brochure / leaf lets showing the technical details of manufacturer shall be provided along with the offer. The P&I diagram showing the valves, filters/ strainers, suction and discharge headers, thermometers, pressure gauges etc: shall be forwarded along with the offer. The technical specifications mentioned below are the minimum requirement. However the tenderer has liberty to check and make modification in capacities towards higher side. The Liquid and Hot refrigerant line connections with isolating valves (both in the existing as well as in the new tapping lines) shall be included in the scope of this contract. It is the responsibility of the contractor to synchronize the system to get rated out put and performance.

1.0 1 No. SS 316 PHE Type Semi welded Ammonia Condenser with oil & Air Purger Unit.

It shall be of reputed make (IDMC-Sondex or Alfa Laval / equivalent make) SS semi welded ammonia Plate type (PHE) condenser, fabricated from SS AISI 316, 0.6 mm thick plate semi-welded cassettes. Equivalent

make shall be also quoted optionally. The entire system shall be mounted assembled as module on a modular frame work. The entire system shall be pressure tested 1.5 times the working pressure as per the industry standards. 10% spare plate gaskets shall be supplied along with the system.

Type	: Semi-welded SS AISI 316, 0.6mm thick PHE Condenser with oil & air purges , safety valve, Pressure gauges and thermo meters.
Refrigerant	: Ammonia
Total heat rejection capacity	: 756000 Kcal/hr minimum
Water inlet temp.	: 32°C
Water Outlet temp.	:36°C
Gas Inlet temp. (Max.)	: 80 to 85 deg. C
Condensing temp.	:35 to 40°C
Water Flow rate in PHE alone	: 200000 LPH minimum
MOC Plates	:SS 316
MOC Frames	:MS Plates (IS 2062)
Control valves	: All instruments shall be provided with Necessary isolation valves.
Tools	: 1 set of dismantling and fitting tools for PHE Unit shall be provided
Spare gaskets	: 10 % PHE & Pipe line spare gaskets shall be supplied.
Drawing and Manuals	: I set of Drawing and Manuals shall be provided.
CIP	: Necessary provision to circulate CIP liquid in PHE with 1000 lit capacity FRP tank shall be provided.

Fitting and Mountings

The following fittings and mounting shall be provided for the PHE Condenser

1. Ammonia Hot Gas In let connection flanged and Valved
2. Liquid Line Out let flanged and valved
3. Liquid Line Out let flanged and valved
4. Oil Drain flanged and valved
5. Bottom Drain Plugged
6. Safety valve connection with safety valve and isolating valve
7. Purge gas connection with isolating valve
8. Pressure gauge tapping with valved pressure gauge 4" size
9. Equalizer line to receiver flanged and valved
10. Pump out Connection valved and plugged.
11. Approach ladder and guard
12. Bottom Frame work for module assembly

2.0 1 No. GRP Induced draft Cross Flow Cooling Tower

Water circulated through PHE Condenser is to be evaporatively cooled in the cooling tower. The cooling tower proposed is of Glass fabric Reinforced Polyester (GRP) construction with integral water basin from where water flows to the condenser pumps suction header by means of gravity. The cooling tower should be provided with induced draft cross flow fans along with mist eliminators of suitable type to reduce the drift loss of water to bear minimum. The induced draft fans should have Aluminum/FRP blades, dynamically balanced and provided with mist eliminator the water spray shall be of flooded fixed nozzle type. The Minimum capacity of the cooling tower shall be of 907200 Kcal/hr [300TR] total heat rejection. However the contractor has liberty to provide higher capacity cooling tower to meet the above condensing loads. The water circulation shall be of minimum of 4400 LPM. The approach shall be of 4 degree centigrade. The inlet temp. Shall be of 40 degree centigrade. The heat rejection shall meet the entire load of condenser and compressors head cooling loads. The Cooling Tower motors shall be of TEFC IP 55 weather proof 3 Ph Induction Motor with additional FRP cover. Gear box if required shall be provided with lubrication points extended to a convenient height for easy refilling lubrication and other maintenance works. All metal parts shall be galvanized and Plastic fills shall be of replaceable type. The cooling tower shall be of continues duty and operate in open atmosphere conditions. The cooling tower shall be provided by a specialist manufacturer of approved make. The Cooling tower shall have the following connections

- In let and out let connections

- Over flow and drain
- Make up and quick fill
- Approach Ladder and plat form if required
- Fan guard

Approved Make

Paharpur/Walco Make FRP induced draft-cooling tower

3.0 2 Nos Condenser Pumps(1W + 1S)

The suitable capacity continues duty water pumps working at 400/440V, 50HZ, 3 Phase TEFC IP55, 1440 RPM induction motors. Back pull type base plate type, not close coupled, CI casing, bronze impeller, packed glands and shaft sleeve. Connections shall be flanged with casing vent and drain, Gland shall be drainage well. The shaft in deep groove ball bearing. The motor and Pumps shall be flexible couplings of approved type and rating with coupling guards. Pump and motor should be mounted on common base plate frame with alignment locating points and Factory assembled, Both the pumps sets mounted on a common base frame of MS channel (100 X 50 mm) and GI sheet cover. The tech. specification shall be submitted along with the offer. The capacity of each pump shall be of 4400 LPM against 35 MWC of approved make.

Approved make Motor and Pump

Beacon /Kirloskar/ Jyothi /Crompton / Siemens make meet the entire requirements. The capacity mentioned in this the minimum requirements. But the tender shall have liberty to increase the capacity for the units for getting the required capacity. The minimum capacity required to offer is 264000 LPH flow minimum at 35 MWC

4.0 1 Lot Water Pipes and Fittings

Galvanized steel ERW medium duty class B confirming to IS 1239, 3589,3601,4736 shall be used for inter connecting PHE condenser, GRP Cooling towers and cooling Water pumps, compressors head cooling lines with all pipe fitting such as Isolating valves, filters, NRV, suction & discharge headers ,Thermo well Pockets, Pressure gauge tapping etc: The vales 50 mm and above shall be of CI Butter fly flanged vales/ CS ball valves of approved make.

Size of Pipe Lines

The size of Pipe lines for various applications, the following velocity of the fluids must be considered by the contractor.

- Discharge Ammonia Piping : 17.5 to 20.00 meters per second.
- Ammonia Liquid Line : 0.60 to 1.00 meters per second.
- Water pump Suction line : 1.0 to 1.20 meters per second.

- Water Pump Discharge Line : 2.0 to 2.50 meters per second.
- Gravity flow of water : 0.30 to 0.50 meters per second.

Approved make of Vales and Fitting

Ammonia System Valves : CI Globe Valve flanged type of make
Super/Frick/BDK

Water valves : CI Butter Fly Valve / CS ball Valve of make of flanged
type

50 mm and above AUDCO/BDK/Saunders

Water valves Below 50 mm : Bronze ball valve of make

Approved make of Pipe Lines

Ammonia System; TATA /MSSL/Kalyani /Jindal

Carbon steel pipe SA 106 seamless Schedule 40 and 80 as per
line size

Water Piping : TATA/ MSSL/Kalyani/Zenith/Jindal ERW of medium duty (Class
B).

5.0 1 Lot Controls and Instruments

Set of controls such as thermometers & pressure gauges at water inlet & outlet of the condenser, oil purge, air purge and safety valve for ammonia etc. All the pressure gauges shall be Bourdon tube type 100 mm dial size weather proof. The temperature gauges shall be of dial type with vapour or gas pressure actuation 100 mm dial size weather proof. All instruments shall be calibrated and provided with necessary certificates.

6.0 1 lot Ammonia Pipe lines and fitting

MS. Schedule 40 & 80 of approved make heavy duty pipes with isolating valves both liquid and hot Gas shall be provided. Gas and Liquid pipe line shall be considered for length of 15 meters for each Line including specials like bend flanges etc: The air & oil Purge , safety valves with Isolation valves shall be provided along with the Condenser.

7.0 1 lot Lubricants and Spares

The first charge of lubricants & 10% spare PHE and line gaskets shall be supplied along with order.

8.0 1 LS Painting

The entire MS surface shall be painted with 1 coat of metal primer and 2 coats of Sy. Enamel paints of approved make after through cleaning and rust removing.

Approved make of Paint.

Nerolac/Berger/Asian/ICICI

9.0 Testing and Commissioning.

Each individual unit shall satisfactorily tested prior to commissioning. The entire system shall pressure tested to 1.5 times the working pressure and commissioned in the presence of purchaser's Engineer without affecting the normal working of the dairy.

10.0 1 lot Manuals and Drawing

1. The required drawings of civil works foundation shall given with in 15 days of confirmed order after site visit.
2. The electrical details of Motors and controls shall given with in 15 days of confirmed order after site visit.
3. The Pipe & instruments drawings shall submitted for approvals in 15 days of confirmed order after site visit.
4. The manufacture's Operation and Maintenance manuals spare parts list for PHE, FRP Cooling Tower, Condenser Pumps shall be provided at free of cost.

11.0 Battery Limits And Exclusions

1. Any kind of civil work like foundations, making and breaking of walls for openings for Pipes, Cables etc. are not in the scope of this contract
2. Electrical Works and approvals are not in the scope of this contract.
3. The connection from existing ammonia pipe lines (Liquid & Gas) are Included in the scope of works.
4. Power and Water for Erection & commissioning will be provided by the dairy at free of cost. However contractor shall make their own arrangements at their cost and risk for tapping the same from the mains as directed by the dairy officials with out affecting the normal working of the Dairy plant.
5. The required Ammonia will be supplied from the dairy at free of cost for commissioning after necessary pressure test (Pressure and vacuum).

12.0 Terms and Conditions

12.1 Prices :

1. The prices quoted by for the supply of equipment are on FOR basis inclusive of Ex. Duty, CST, packing & forwarding, freight and transit insurance, Entry tax and transportation cost etc (ruling as on the date of finalization/award of contract), incurred until the delivery of items to ERCMPU.No other extra payments will be paid. The offer shall be of comprehensive in nature included supply, installation and commissioning. The prices finalized for the items coming under contract are fixed for the validity of contract period.

12.2 Terms of Payment

- a. 90% shall be made after successful installation & commissioning.
- b. 10% shall be retained and released after guarantee period of 1 year. Payment shall be made within one month after commissioning and satisfactory operation by our concerned Dairy.
- c. Payment shall be by cheque, if required by DD, while the commission charges shall be at Supplier's account.

12.3 Delivery & Completion Period:

1. The material shall be delivered on door delivery basis including unloading charges at the concerned Dairy.
2. All the civil foundation drawing shall be submitted with 15 days from the date of confirmed order.
3. All materials shall be supplied with 60 days from the date of the confirmed order and the erection and commissioning shall be completed with in 30 days their after.

12.4 Validity:

The quotations submitted and the price quoted shall have to be valid for 6 months from the date of opening of quotation. In exceptional circumstances the ERC MPU may in writing solicit the quotationers consent to extend the period of validity of offer.

12.5 Guarantee:

The supplier shall have to guarantee the quality of The equipment /goods supplied strictly as per specification of contract/purchase order for a period of for a period of 12 months from the date of commissioning.

12.6 Agreement:

The successful tenderer shall execute an agreement in stamp paper as per Performa attached.

12.7 Insurance:

The goods dispatched under the contract on FOR destination basis shall be dully insured against loss or damage in transit at Supplier's account.

12.8 OPENING OF TENDERS :

1. The Part-I Technical Tender shall be opened on the date/time and venue specified in the Presence of the tenderers or their authorized representative who opt to be present on the date / time at venue specified for opening of tenders.
2. The tenderers' / authorized representatives present at the time of opening of tenders shall sign the Register evidencing their attendance.
3. Based on merits of details (reg. Infrastructure, production and supply capacity etc.,) furnished by the tenderer in Technical Tender Part – I the eligibility of tender for opening of Commercial Tender Part-II shall be decided.
4. COMMERCIAL TENDER PART-II of the tenderers who do not satisfy any/all the terms and conditions mentioned under Technical Tender Part-I shall not be considered eligible and their Commercial Tender Part-II shall not be opened.
5. The names of participant tenderers, submission and other details as the Purchaser at his discretion may consider appropriate shall be announced during the opening of Technical Tender Part-I.
6. The date for opening of Commercial Tender shall be intimated to the Technically Qualified / Eligible tenderers by letter/fax.

12.9 EVALUATION OF TENDER:

1. Taking into consideration Technical Competence and the quoted price for the goods of specified quality, the quotations will be evaluated.
2. Not withstanding any thing contained in the quotation schedule, no obligation is cast on ERCMPU to accept the lowest quotation and the Union shall also reserves the right to accept or reject any or all the quotations without assigning any reason.

3. The ERCMPU award the contract to the Tenderer whose tender has been determined to be substantially responsive to the tendering documents and who has offered the lowest evaluated price, provided that the Tenderer has the required infrastructure, eligibility & qualification capability & the resources to carryout the contract effectively.

12.10 ERCMPU' S RIGHTS:

1. ERCMPU reserves the right to accept or reject any or all offers and to annul the quotationing process at any time prior to award of contract without thereby incurring any liability to the effected quotationer or quotationers or any obligatory to inform the effected quotations on the grounds of ERCMPU action.
2. ERCMPU reserves the right to abrogate the contract without thereby, incurring any liability to the effected quotation or contractors or any obligation to inform the effected contractors on the grounds of ERCMPU action
3. The Managing Director, ERCMPU Ltd shall be the final authority to reject full or any part of the supply which is not confirming to the specification and other terms and conditions.
4. Dispute: In case of any disagreement or dispute arising between ERCMPU & supplier, the decision of Managing Director, ERCMPU shall be final.

13.0 Price Quote Format

Clause No.	Item	Quantity	Unit Price in Rs.		Amount in Rs.	
			Supply	Erection	Supply	Erection
1.0	SS 316 PHE Type Semi welded Ammonia Condenser with oil & Air Purger Unit.					
2.0	1 No. GRP Induced draft Cross Flow Cooling Tower with all accessories					
3.0	Condenser Pumps and foundation					
4.0 to 10.0	Water Pipes and fittings, Instruments and controls, Ammonia Pips and fittings, Lubricants, Drawings and Manuals, Painting Lubricants, Testing and commissioning					
	Total					

(Rupees
 only)

Signature

**Name
 Address**

**Telephone No.
 E-Mail Fax**