



**Gujarat Cooperative Milk Marketing Federation Ltd, Anand**  
**Amulfed Dairy (Previously known as AmulFed Dairy)**

Plot No. 35, Nr. Indira Bridge,  
Ahmedabad-Gandhinagar Highway  
Village: Bhat, Dist: Gandhinagar  
Gujarat, India-382428

**Request for Bid (RFB) for "Installation and commissioning of Clarifier at AFD "as per given scope of work.**

AFD: PUR: PKS: BF/2017



## Invitation for Bids (IFB)

### AmulFed Dairy Gandhinagar

(A Unit of Gujarat Cooperative Milk Marketing Federation Ltd)

Near Indira Bridge, Ahmedabad-Gandhinagar Highway, Bhat,

Gandhinagar 382428

Phone 23969055-56 Fax 079-23969059

We invite sealed bids from eligible bidders for the following works:

### **“Installation and commissioning of Clarifier at AFD as per the scope of supply mentioned in the Inquiry”**

Bid Reference	AFD: PUR: PKS: BF/2017
Bid Start/Stop	Starts from 08.04.2017 to 22.04.2017
Submission	Up to 02.00 pm of 22.04.2017
Pre-bid Meeting	20.04.2017 at 2.00 PM
Bid Opening	22.04.2017 at 2.30 PM
Completion period	3 months

#### **Eligibility Criteria :**

- 1) Bidder should be having minimum five successful installations in India of similar nature.
- 2) The Bidder/Supplier shall have turnover, in each of the last three years, at least 15 crore and must have executed, in the last three years at least a contract of similar nature.

#### **Submission of Bid**

- 3.1 The bidders, who purchase the bidding document, are eligible for submission of bids in their name only.

#### **Technical Specification : As per the Annexure-I**

#### **Submission of Bid :**

Bidders fulfilling above eligibility criteria eligible for submission of bids in their name only.

- 1.1 The bid shall be submitted through hardcopy/mail/telefax before above due date is acceptable.
- 1.2 The Price Break up sheet (in separate sealed Envelope, if send through hardcopy) and technical document shall be submitted at the office address mentioned below.

- 1.3 The price Break up sheet should be entitled with reference of "Price Break Up for, Supply, Installation and commissioning, Clarifiers at AFD.

**Rights Reserved by AmulFed Dairy (A unit of GCMMF Ltd).**

AmulFed Dairy (A unit of GCMMLtd), at its sole discretion and without assigning any reason thereof, reserves the right to accept and / or reject the whole or part of any or all the bids received.

**Validity :**

The offer should be valid for 6 Months from the date of Bid opening.

**Contact details:** For any techno-commercial query you may contact Palak Shah (7359001666), or ([E-mail-palak.shah@amul.coop](mailto:palak.shah@amul.coop) ) of Purchase department.

## **Annexure-I**

### **Technical Specification**

#### **Scope of Supply:**

In general the plant shall be designed considering the following:

- State of Art Process Technology comparable with the best in the industry.
- Advanced and sophisticated Instrumentation & Control
- DCS based Automation along with the real time process optimization
- Optimum Energy consumption & Product losses
- High rate of Productivity
- Optimum Resource Deployment per Unit Production

Amulfed Dairy wishes to install and integrate bacteria clarifiers in their existing milk processing lines.

#### **BID Package: Installation and commissioning of Bacteria Clarifier**

This tender comprises of design, engineering, supply, installation, testing and commissioning of bacteria clarifiers in existing Liquid Milk Processing lines and to integrate it with existing system at Amulfed Dairy, Gandhinagar.

#### **Scope of the tender includes:**

- a) Supply, Installation and commissioning of Bacteria Clarifiers in existing Milk Processing Lines and to integrate it with existing system
- b) Set up of Milk processing lines after installation of Bacteria clarifiers
- c) Complete electrical and mechanical requirements to install bacteria clarifiers
- d) Supply and installation of pneumatic valves
- e) Automation and instrumentation including software and hardware
- f) CIP facility of Bacteria Clarifiers
- g) Supply and laying of all Pipe lines, valves, NRV, fittings etc required accessories and miscellaneous items
- h) Supply and Laying of all types of cables and termination

## **BASIS OF DESIGN:**

### **INTRODUCTION:**

Amulfed Dairy Plant shall receive pasteurized/raw chilled milk in tankers. The tankers (either filled or empty) shall be weighed with one Weigh Bridge. After weighment, the tankers would be unloaded at any of four unloading bays on acceptance of the raw milk through the system, based on measurement of Fat/SNF/Temp./acidity etc. Chilling of raw milk would be done during unloading process through chillers & stored in Raw Milk silos and milk from this Raw Milk silo passes through 4\*30 KLPH Milk processing lines and then stored in to pasteurised Milk Silos.

Amulfed Dairy wish to install one Cold clarifier of 50 KLPH capacity at the reception level and to integrate clarifiers in existing set up and system.(ES and OS)

- Bidders to consider all mechanical, electrical, instrumentation and automation work related to installation and commissioning of clarifiers in existing Milk Processing Lines.
- Bidders to consider automatic bypass arrangement for clarifier.
- Bidders to consider CIP of clarifier with CIP of Milk Processing/Reception lines
- Bidders to consider all required equipments/ Instrument/accessories to meet the process requirement of their equipment.
- At old Process section, Milk processing line 1 and 2 is on digital network and Milk Processing line 3 and 4 is on ASI network.
- Installation of electric hoist (Mono rail) with I beam is to be consider by Bidders.
- Bidders has to apply/consider all control and process philosophy to run Clarifiers in existing set up during start up, production, recirculation and CIP.

## EQUIPMENT SPECIFICATIONS

### Equipment : Cold Clarifier

<b>Capacity</b>	50 klph, Self desludging type
<b>Raw Milk FAT/SNF %</b>	Fat- 6.5% max, SNF- 9.3 % max, Mix Milk
<b>Raw Milk feed Temperature</b>	6 ° C - 10 ° C
<b>Bowl and bowl assembly</b>	Self ejection with hydraulic operation
<b>Disc assembly</b>	SS, removable type, abrasion free
<b>Drive</b>	Integrated (Direct) drive with VFD/ clutch and gear/ Belt drive with VFD
<b>Product Connection</b>	Union as per bidders standard
<b>Controls/Safety interlocks required</b>	Vibration, air pressure, water pressure, lubrication monitoring, cooling monitoring etc.
<b>Accessories and control system</b>	Siemens PLC S7 300 with HMI and all controls/ interlocking of machine with profibus communication
	Complete electrical SS panel with VFD with panel AC
	All panels shall be of SS 304
	Template of foundation frame
<b>Performance criteria</b>	Shall be able to remove dust, dirt, hairs or any extraneous material based on density difference.
<b>Utilities (under AFD scope)</b>	140 kwh power supply, soft water for desludging, compressed air supply for pneumatic valve operations

### Equipment : Tanks and auxiliary equipments

1	<b>Buffer tanks</b>	<p>Capacity: 20 KL</p> <p>Material: a) Inner shell □ AISI 304 b) Outer cladding □ AISI 304</p> <p>Finish: 150 grit</p> <p>Insulation: PUF/ PUF with EPS</p> <p>Ports and fittings: Inlet / outlet, CIP spray ball, high low level sensors, temperature sensor, agitator, level transmitter and manhole.</p> <p>Instruments: RTD for milk temperature shall be indicated on MMI</p> <p>Proximity switch for manhole indication.</p> <p>Level sensors &amp; switches: The tank shall have 2 nos. of level switches for</p>
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		high & low indication. Tank shall have Level transmitter.
2	<b>Feed Pump</b>	Capacity : 50 KLPH Type : Centrifugal Fittings : Quick opening sanitary fittings Material : Product contact parts in AISI 316 Mounting : Free standing with adjustable SS ball feet Shaft sealing : Mechanical shaft seal Gasket : Nitrile rubber Shroud : AISI 304 Motor : 415V, AC, 3 phase, 50 Hz. Squirrel cage induction motor with TEFC/IP 55 enclosure suitable for VFD operation. Motors should be of class 1 efficiency.
3	<b>CIP return pump</b>	Capacity: Suitable Duty: CIP Return Pump for tank Material: SS 316 with SS shroud Type: Centrifugal, Self Priming, mono block, centrifugal, sanitary design.
4	<b>Temperature element</b>	Depending on temperature ranges, Pt100 Resistance Temperature Detector (RTD) SS 316 with transmitter heads, with chain holder, shall be of the waterproof type, with duplex terminal block, gasketed cover and stainless steel chain. Screwed covers shall be used.
5	<b>Process Instruments</b>	Level switches, temperature, level transmitter etc. shall be hard wired type blind type and shall be connected to automation system.
6	<b>Mass/ Density flow meter</b>	The Mass flow meter shall be capable of measuring mass flow rate, density, temperature, volumetric flow rate and totalized flow with accuracy 0.01 % of rating.
7	<b>Level Instrument</b>	Flange mounted diaphragm fluid type level transmitters shall be used for level measurement on tanks. Housing shall be of SS 316.
8	<b>Pipes</b>	Type: TIG welded, annealed and descaled tubes shall be manufactured as per the standard ASTM A270. Outer surface of the tubes should be with dairy finish and inner surface should be pickled as per dairy standard.
9	<b>Pneumatic valves</b>	Type: Two way / three way pneumatically operated sanitary valves of mix proof (self cleaning), ON/OFF seat valves, flow diversion valves, etc. shall be provided with DI/DO connectivity. All the valve battery valves shall be of self cleaning type mix proof valves having 3 solenoid (each). Material : AISI 316

		Sealing : Positive Controls : Electrically/electronically operated
10	<b>NRV</b>	The non return valve shall be of sanitary design and all liquid contacting parts shall confirm to AISI 304. The valve sealing gasket shall be EPDM / Nitrile rubber material suitable for hot water sterilization temperature of 100° C and hot acid and lye solution of 2% concentration at 85°C . The non return valve shall be with plain ends shall be suitable for direct welding on the pipes.

Remarks :

- It is Primary requirement. Detail requirement would be considered by all the bidders based on site visit including piping requirement, valves, and instruments requirement to fit the equipment in the existing set up.
- Automation and integration also required to be considering for it.

## **BATTERY LIMITS**

### **BATTERY LIMITS**

**Supplier will be responsible to undertake all the works involved in completing the project within the battery limits prescribed below**

#### **Power:**

Required power shall be made available at MCC/VFD panel of machines and distribution thereafter to and fro machine shall be in scope of bidders. 11 KV 3 phase, 50 Hz +/-3% AC Power supply made available. Further complete transmission and distribution in the scope of bidder.

#### **Civil Work:**

All type of civil work shall be in the scope of purchaser.



## Equipment list for Dairy Plant

Sr No.	Description/Area	Capacity	Qty	Unit
1	Clarifier Clarifier with de sludge collection and Transfer system	50 KLPH	1	No.
2	Pneumatic Valves	Suitable	1	lot
3	Electrical	Suitable	1	lot
4	Automation and Instrumentation	Suitable	1	lot
5	Pipe Fittings and valves	Suitable	1	lot
6	Electric Hoist	5 T	1	No

## Recommended Make of major Bought out items

<b>Equipment</b>	<b>Make</b>
Clarifier	GEA westfalia/ Tetrapak/Equivalent
Process pumps	Alfalaval/ APV
SS tubes, Pipes and fittings	Apex, Heavy metals/ Bhandari/equivalent
Pneumatics	Festo/SMC
Hoist	Indef/RIB/Moris
<b>Instrumentation and Automation</b>	
Automation system	Siemens
VFD	Danfoss/ABB
Pressure Transmitter	E & H
RTD	Radix/Pyro/Altop
Flow Switch	IFM/Honeywell
Level switch	E & H/Emerson
Flow Transmitters	E & H/Emerson
Pressure Gauge	Waree/WICA/GIC
Process/CIP Pneumatic Valve	GEA Tuchenhagen/Alfalaval/APV
<b>Electricals</b>	
Electric Motors	ABB/CG/Siemens
MCCB/MPCB/Relay,	L&T/Siemens
Timer, Switch Fuse, MCB	L&T/Siemens
Push Button, LED	L&T/Siemens
Ammeter/ Volt meter	Meco/Rishabh
Digital energy Meter	L&T/Siemens
PVC conduit and accessories	Polycab/others
Power cable	Poly cab/KEI
Instrument/signal cable	Lapp
Plug and Socket	Legrand/ Hensell

### Annexure-IV

Price Schedule Form		
Summary Sheet		
	Summary Heads	Amount
1	2	3
1	Total Ex-factory, Packed	
2	Total Excise Duty	
3	Total Sales Tax/ WCT	
4	Transportation	
5	Insurance	
6	Total Supply Price delivered at Site (1+2+3+4+5)	
7	Total Installation & Commissioning	
8	Total Bid Price (6+7)	

Note:

1	Bid must be submitted strictly as per this pro forma (items break-up sheet shall be submitted in hard copy in sealed envelope at office address mentioned in IFB with marking of "DO Not Open Before")
2	Amount against Sr. No 1 to 3 & 7 must be the total worked out in items break-up sheet
3	Please quote charges for transportation (Sr. no 4) and insurance (Sr. no 5) as a percent of exfactory, packed (Sr. No 1)
4	List of Spares with unit prices, valid for one year, must be submitted
5	All the bidders have to submit price considering EPCG as well as considering Full custom duty.  In all the cases all the responsibility till commissioning of the plant will remain of Bidder/Supplier.

**Signature of Authorized Signatory of Bidder/Supplier**

**Payment Term of the tender:**

Payment for supply, installation and commissioning contracts must be strictly as below:

- 1) 10% advance of total contract value (Supply + Erection & Commissioning) on submission of following:
  - (i) Acceptance of the order i.e.
    - a. Submission of the Duplicate copy of the order duly signed by the authorised signatory putting stamp of the Organisation.
    - b. Execution of the Contract Form.
  - (ii) Against a bank guarantee for equivalent amount valid for 60 days beyond the stipulated delivery (as per schedule of delivery/supply)/ completion period.
  - (iii) The Performance Security shall be in the amount of 10% of the Contract price up to sixty days after the date of completion of performance obligations including warranty obligations.
- 2) 10% of total contract value on first submission of Plant layout, and P&I Diagram for process and services. against submission of Bank guarantee valid for 60 days beyond the stipulated delivery (as per schedule of delivery/supply)/ completion period
- 3) Payment against Supply and erection of equipments/material:
  - a. 65% progressive payment of supply value against safe receipt of goods at site.
  - b. 65 % payable on erection value on progression of erection as per Joint Measurement Sheet within 30 days of submission of JMS.
- 4) 15% balance payment within 30 days of satisfactory commissioning of the plant.

- Notes:**
- a) Payment shall be made on complete supply of an item/group of items specified in the contract. No payment specified in the contract. No payment shall be made if supply of an item/group of items is incomplete.
  - b) For all the payments to be made against bank guarantees, The Bank Guarantees should be obtained from Nationalized Bank or ICICI Bank/HDFC Bank/Axis Bank/IDBI/HSBC

**Liquidated Damages**

Bidder/Supplier fails to deliver any or all of the Goods or perform the Services within the time period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages as under:

**a. For the Supply Component:**

A sum equivalent to 0.5% of the delivered price of the delayed goods (As per the price break up furnished by the supplier and accepted by the Purchaser, which the supplier fails to supply within the time period specified in the contract for each week of delay.

**b. For the Erection and Commissioning Component:**

A sum equivalent to **0.5%** of the un – executed portion of each week of delay or part thereof beyond the time specified in the contract for the successful completion of the plant.

The total amount so deducted as per above, shall not exceed **5%** of the Contract value. Once the maximum is reached, the Purchaser may consider termination of the Contract.