

TECHNICAL SPECIFICATION OF DAIRY PLANT COMPLETE (15 MT CAPACITY) WITH STANDRAD TOOLS, ACCESSORIES AND SPARES WORTH FAST AND SLOW MOVING OF FOB VALUE ON TURNKEY BASIS. QTY-01 UNIT –DP-5

Ser	Description	Specification	Must be filled up by the Manufacturer
1.	Name of equipment	Dairy plant complete (15,000 L capacity/day) with standard tools accessories and spares worth 5% fast and slow moving of FOB value on turnkey basis.	
2.	Name & complete address of tenderer	Details to be mentioned	
3.	Name & address of principal/supplier	Details to be mentioned	
4.	Name & complete address of manufacturer	Details to be mentioned	
5.	Make & model (Item wise to be mentioned for all items)	Details to be mentioned	
6.	Country of origin (Item wise to be mentioned for all items)	Group - A Country	
7.	Country of manufacture (Item wise to be mentioned for all items)		
8.	Country of assemble		
9.	Country of shipment/Port of shipment	Any port of country of manufacturer	
10.	Year of production	Not before the year of contract	
11.	Milk receiving unit comprising following accessories		
	a. Milk receiving vat with sloped bottom and lid/cover including arrangement for connections with centrifugal pump (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity of vat	Minimum 1,000 L	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	b. Self-priming pump/vacuum pump including required connections with milk couplings and milk tubes/pipes (transfer/suction of milk from milk bowser or milk cans to receiving vat) (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity	Minimum 20,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	c. Centrifugal pump with inline filter & manual/ mechanical flow control valve and flow meter (for transfer of milk from receiving vat to milk plate cooler) (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity	Minimum 10,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	d. Dump tank (Insulated) to be designed along/in between milk receiving vat and milk plate cooler (Quantity- 01 No)	To be mentioned	
	(1) Capacity	Minimum 2,000 L	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	



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Ser	Description	Specification	Must be filled up by the Manufacturer
	e. Plate heat exchanger (Milk plate cooler) for initial chilling of receiving fresh milk (cooling from 35°C to 4°C) with digital milk counter, removal inline filter, flow meter and adjustable legs (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity	Minimum 2,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	f. Fresh milk chiller comprising following accessories (this unit to be connected with milk plate cooler) for initial chilling of receiving fresh and recombined milk	Details to be mentioned	
	(1) Capacity	2,000 L/H (fresh milk)	
	(2) Compressor power	To be mentioned	
	(3) Make/Brand	To be mentioned	
	(4) Model/Type	To be mentioned	
	(5) Country of origin	Group - A Country	
	(6) Mounting	Floor mountable	
	(7) The milk chilling machine contains minimum 2 x air cooled semi-hermetic compressors formed two refrigeration circuits and each circuit containing one compressor which will be capable of cooling individually (capable to provide 100% back up). The gas line (compressor, condenser, receiver, evaporator) of the unit should have separation by the gas control valve or solenoid valve for each circuit	Details to be mentioned	
	(8) Product inlet temperature	+36°C (fresh milk temperature)	
	(9) Capable of cooling	+5°C or below	
	(10) Product flow rate	2,000 L/H (minimum)	
	(11) Heat condenser capacity	To be mentioned	
	(12) No of cooling fan	To be mentioned	
	(13) Type of refrigeration gas	R404A or equivalent	
	(14) Type of cooling	To be mentioned	
	(15) Cooling media	Glycol water	
	(16) Glycol tank size	Minimum 500 L (SS) for each machine	
	(17) Design ambient temp	+50°C or more	
	(18) Glycol water circulation pump	02 nos	
	(a) Make	To be mentioned	
	(b) Capacity	To be mentioned	
	(c) Model/Type	To be mentioned	
	(d) Country of origin	Group - A Country	
	(19) Cooling system/type	Shell and Tube type	
	(20) Operations	Automatic operations by digital thermal controller	
	g. Electric control panel for suitable operation of ser no. 11	To be provided	
12.	Milk cooling tank with cooling unit The tank, double walled with insulation, fixed/attached with stirrer, control panel, manual CIP and individual cooling unit (all mounted as a complete unit) (Quantity – 05 Nos)	Details to be mentioned	
	a. Capacity per tank	2,000 L	



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	b. Capable of cooling fresh milk from +36°C to below +4°C and maintain cooling temperature at +4°C, cooling unit mounted on same frame of the tank (each tank has one cooling unit individually)	Details to be mentioned	
	c. Centrifugal pump (for transfer of fresh milk from milk cooling tank to balance tank) (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity	Minimum 2,000 L	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	d. Electric control panel for suitable operation of ser no. 12	To be provided	
13.	Milk recombination unit with push button control panel comprising following accessories placed on frame (Quantity-01 No)	Details to be mentioned	
	a. Complete mixer blender (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity of centrifugal pump	Minimum 10,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	b. Centrifugal pump (Quantity – 01 No) The centrifugal pump used for powder mixing to be placed on horizontal/vertical position of conical hauler with capacity of 50 kg milk powder at a time	Details to be mentioned	
	(1) Capacity of centrifugal pump	Minimum 8,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	c. Magnetic inductive flow meter , batch controller for measuring amount of water dosed into the mixing tank, flow meter and electrical valve with pre-set dosing volume, capacity minimum 10,000 L/H (Quantity – 01 No)	Details to be mentioned	
	d. Digital water meter & heat control equipment (With temperature measurement of water/steam mixer) (Quantity-01 Set)	Details to be mentioned	
	e. Buffer tank (Each tank delivered inclusive of the following accessories: air vent, CIP turbine, SS ladder, digital thermometer with paddle type agitator, capacity minimum 2,000 L each) (Quantity – 02 Nos)	Details to be mentioned	
	f. Centrifugal pump (circulation of water for mixing powder) with SS cover and placed on SS frame (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity	Minimum 8,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
14.	Milk pasteurizing unit complete (Quantity – 01 No) Plate Heat Exchanger (PHE) with heating at 95°C and chilling water at 1°C to 2°C, capacity minimum 1,000 L/H, the PHE to be designed for processing of fresh milk/recombined milk at normal temperature,	Details to be mentioned	



Ser	Description	Specification	Must be filled up by the Manufacturer
	complete pasteurizer unit built on a frame with the components of float controlled balance tank, milk pump, flow control valve, cream separator, homogenizer, registration unit for digital registration of pasteurization temperature (PLC controlled) position of flow divert valve, PHE double safety plates, divert valve, duration holder, hot water section for heating with steam and complete steam set - valve, reduction valve, regulation valve etc	Details to be mentioned	
	(1) Capacity	Minimum 1,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	a. Float controlled balanced tank, capacity minimum 120 L (Quantity – 01 No)	Details to be mentioned	
	b. Centrifugal pump with magnetic inductive flow meter milk inline filter & manual flow control valve for transfer of milk from balance tank to pasteurizer (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity	Minimum 2,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	c. Centrifugal pump with heat control equipment for circulation of hot water (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity	Same execution as PHE (Heater chamber)	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	d. Hot water equipment for PHE (Generally in the same execution as PHE, steam/water exchanger/expansion tank) (Quantity - 01 Set)	To be provided	
	e. Holding cell/tubular holder for plate heat exchanger 30 seconds holding time for pasteurizing milk as required	To be provided	
	f. Flow splitter/flow reverse valve or divert valve, rotary alarm, automatic operation in case of temperature failure, the flow will be returned to the balance tank (for recombination, receiving, reserve/filling, pasteurization & CIP section) (Quantity - as required)	To be provided	
	g. List of maintenance tools and spare parts with quantity for items-14	To be provided	
	h. Electric control panel comprising flow diversion valve, flashing rotary warning lamp, regulation valve for steam, temperature regulator, ice water regulator and air supply/regulator or PLC controlled unit with programmers for startup/stabilizing, product pasteurization and cleaning	To be provided	
15.	Cream separator with maintenance tools and spare parts (Quantity – 01No)	Details to be mentioned	
	a. Capacity	1,000 Litre/Hour	



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Ser	Description	Specification	Must be filled up by the Manufacturer
	b. Type	Milk Separator with solid-wall disc type bowl, with ribless interior surface in top and bottom to facilitate manual bowl cleaning. Inlet flow is controlled and kept constant by a high Pressure float. Discharge of skim milk and cream takes place under pressure by built-in centripetal pumps. Skim milk discharge line incorporates a regulating Valve and Pressure gauge for adjustment of the discharge pressure Cream discharge line has a regulation Valve and flow meter for setting the flow rate. The separated dirt accumulates in the sediment holding space and must be removed after the bowl has been stopped.	
	c. Make/Brand	To be mentioned	
	d. Model/Type	To be mentioned	
	e. Country of origin	Group - A Country	
	f. The cream separator has cast iron frame clad in stainless steel	Details to be mentioned	
	g. The drive is affected by a built-in-enclosed motor of standard design	Details to be mentioned	
	h. The power is transmitted to the bowl spindle by a centrifugal clutch and a worm wheel gear	Details to be mentioned	
	j. All the parts of the separator are made of stainless steel	Details to be mentioned	
	k. The separator is delivered inclusive of a set of special tools and special spare parts	To be provided	
	(1) List with quantity of special spare parts of each machine	To be provided	
	(2) List with quantity of special tools of each machine	To be provided	
16.	Homogenizer (Including flow control of the supply cooling water, 2 stages homogenizing head with maintenance tools and spare parts) (Quantity – 01 No)	Details to be mentioned	
	(a) Capacity	2,000 L/H	
	(b) Make/Brand	To be mentioned	
	(c) Model/Type	To be mentioned	
	(d) Country of origin	Group - A Country	
	(e) Oil level sight glass blasted for transmission	To be mentioned	
	(f) List of maintenance tools and spare parts with quantity	To be provided	
	(g) Working pressure	Minimum 200 bar	
17.	Vertical thermo insulated tank with agitator (Each tank with cone type top and V-shaped inclined bottom, spoon type outlet, air vent, CIP turbine SS ladder, digital thermometer, glass-blasted capacity indication scale on the interior or outer surface, foamless inlet top of the tank for preservation of finished product) (Quantity – 05 Nos)	To be provided	
	a. Capacity of each tank	Minimum 2,000 L	
	b. Digital control measuring system	To be provided	
	c. Pressure section with level indicator or slight glass	To be provided	



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Ser	Description	Specification	Must be filled up by the Manufacturer
	d. Centrifugal pump (for transfer of milk from reserve tank to filling machine) (Quantity – 02 Nos)	Details to be mentioned	
	(1) Capacity	Minimum 8,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
18.	Automatic Filling Machine with following options (Quantity – 02 Nos)	Details to be mentioned	
	(a) Capacity	Minimum 4,000 Pouches/H	
	(b) Make/Brand	To be mentioned	
	(c) Model/Type	To be mentioned	
	(d) Country of origin	Group - A Country	
	(e) Polyethylene pouches	Flexible pouch, 3 layers, thickness: 100 -110 micron	
	(f) Packing size	1 L, ½ L and ¼ L	
	(g) Capable of film disinfection by UV rays and capable of pack the milk into pouches for human consumption	To be provided	
	(h) List of maintenance tools and spare parts with quantity	To be provided	
	(j) Electric control panel for suitable operation of serial no. 18 & 19	To be provided	
19.	Butter churner (Quantity – 01 No) The churner is glass spined on the interior surface in order to avoid sticking of butter of the surface, the churn is equipped with a hinged man way and butter milk valve. The drive of the butter churner is by a frequency converter controlled electric motor with control panel	To be provided	
	(a) Capacity	Minimum 200 kg	
	(b) Make/Brand	To be mentioned	
	(c) Model/Type	To be mentioned	
	(d) Country of origin	Group - A Country	
	(e) Weighing scale, capacity 3000 gm (±1 gm)	To be provided	
	(f) List of spare parts with quantity	To be provided	
20.	Batch processor and butter oil heating tank (For pasteurization of cream with push button panel and indicator light) (Quantity - 01 set)	Details to be mentioned	
	(a) Capacity	500 kg	
	(b) Make/Brand	To be mentioned	
	(c) Model/Type	To be mentioned	
	(d) Country of origin	Group - A Country	
	(e) Stirrer triple walled vat with jacket	To be provided	
	(f) Pasteurizing of cream done by (PHE system) steam & chilled water line (from boiler steam line and chilled water line)	To be provided	
	(g) List of spare parts with quantity	To be provided	
21.	Butter forming machine (Quantity – 01 No)	Details to be mentioned	
	(a) Capacity	100 gm and 200 gm slabs	
	(b) Make/Brand	To be mentioned	



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Ser	Description	Specification	Must be filled up by the Manufacturer
	(c) Model/Type	To be mentioned	
	(d) Country of origin	Group - A Country	
	(e) Stainless steel table	To be provided	
	(f) Lever to be attached with butter molder or frame	To be provided	
22.	Cheese production unit (including brine water tank, various cheese cutter/blade equipment, operation panel, wooden rack and other components)	Details to be mentioned	
	(a) Make/Brand	To be mentioned	
	(b) Model/Type	To be mentioned	
	(c) Country of origin	Group - A Country	
	a. Milk pouring vat (capable to separate the whey milk protein as solid by acetic acid/starter culture/rennet), capacity 500 L (Quantity – 01 No)	To be provided	
	(1) The vat consists of double jacketed chamber for ice water and hot water with necessary fittings and valves	To be provided	
	(2) One unit control panel and agitator motor with necessary equipment	To be provided	
	b. Press unit and necessary equipment (Capable to remove extra water particles from milk protein) (Quantity-01 No)	To be provided	
	c. Brine water tank and wooden rack for cheese making purpose (Quantity – 01 No)	To be provided	
	d. The above production line is suitable for processing 500 L of milk per day for producing cheese	Details to be mentioned	
	e. List of reagents and quantity		
	(1) Acetic acid - 05 L	To be provided	
	(2) Starter culture (minimum 10 grams) - 50 packets	To be provided	
	(3) Rennet (vegetable rennet) - 01 Kg	To be provided	
	f. List of spare parts with quantity	To be provided	
23.	Air compressor complete (piston type) for milk filling machine (each compressor is delivered with air receiver tank 500 L, air dryer and pressure gauge) (Quantity – 02 Nos)	Details to be mentioned	
	(a) Capacity	To be mentioned	
	(b) Make/Brand	To be mentioned	
	(c) Model/Type	Piston type	
	(d) Country of origin	Group - A Country	
	(e) Air receiver tank for each compressor	500 L	
	(f) Operating pressure	10 bar	
	(g) Air dryer for each compressor	To be provided	
	(h) List of spare parts with quantity	To be provided	



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24.	Refrigeration unit (for pasteurization of milk) comprising following accessories (Quantity – 01 Unit)	Details to be mentioned	
	a. Capacity	2,000 L/H (Fresh milk/recombined milk)	
	b. Individual compressor capacity	To be mentioned	
	c. Compressor power & country of origin	To be mentioned & Group - A Country	
	d. Mounting	Floor mountable	
	e. The machine contains minimum 2xair cooled semi-hermetic compressors formed two refrigeration circuits and each circuit containing one compressor which will be capable of cooling individually (capable to provide 100% back up). The gas line (compressor, condenser, receiver, evaporator) of the unit should have separation by the gas-controlled valve or solenoid valve for each circuit and inter connected glycol water line of milk chilling machine	To be provided	
	f. Product inlet temperature (fresh milk/recombined milk temperature)	+36°C	
	g. Cooling capacity	+4°C or below	
	h. Product flow rate	Minimum 2,000 L/H	
	j. Heat condenser capacity	To be mentioned	
	k. No of cooling fan	To be mentioned	
	l. Type of refrigeration gas	R404A or equivalent	
	m. Type of cooling	To be mentioned	
	n. Cooling media	Glycol water	
	p. Glycol tank (SS) size	Minimum 500 L	
	q. Design ambient temperature	+50° C or more	
	r. Glycol water circulation pump	02 nos	
	s. List of spare parts and tools with quantity	To be provided	
25.	Boiler plant (High pressure steam boiler) with separately operated dual burner-diesel or gas operated (Quantity – 01 Unit)	Details to be mentioned	
	a. Capacity	Minimum 750 Kg/H	
	b. Make/Brand	To be mentioned	
	c. Model/Type	To be mentioned	
	d. Country of origin	Group - A Country	
	e. Fire tube steam boiler inclusive of automatic burner for diesel and gas (dual system but both operated individually)	To be provided	
	f. Operating pressure	12 bar	
	g. Feed water pump (Quantity – 02 Nos)	To be provided	
	(1) Capacity	To be mentioned	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	h. Feed water softening plant (Quantity – 01 No) (To be designed on the basis of water sample for boiler unit)	To be provided	



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Ser	Description	Specification	Must be filled up by the Manufacturer
	(1) Capacity	To be mentioned	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	j. Feed water condensates tank (SS) (Quantity – 01 No)	To be provided	
	k. Diesel tank (SS) for oil capacity minimum 500 L (Quantity-01 No)	To be provided	
	l. Automatic control panel with alarm bell for operation of boiler plant (Quantity – 01 No)	To be provided	
	m. Chimney - minimum 10 meter (Quantity – 01 No)	To be provided	
	n. Necessary equipment for gas and diesel burner operating system	Details to be mentioned	
	p. List of spare parts and tools with quantity	To be provided	
26.	Water treatment plant complete (Quantity – 01 No) For supplying purified water to whole dairy plant for processing of milk and milk by product with batch controller for measuring amount of water dosed (to be designed on the basis of water sample analysis) comprising following	Details to be mentioned	
	a. Capacity	10,000 L/H	
	b. Make/Brand	To be mentioned	
	c. Model/Type	To be mentioned	
	d. Country of origin	Group - A Country	
	e. Water flow pressure	6 - 10 bar	
	f. Hydrosphere system inclusive of pressure tank	To be provided	
	g. Double pressure filter with control system	To be provided	
	h. Water reservoir tank (Capacity minimum 10,000 L) (Quantity – 01 No)	To be provided	
	j. Capable to reduce As, Fe, Mn, CO ₂ , other minerals below the level recommended by WHO	To be provided	
	k. Complete set of multi-stage centrifugal pump as per required water flow and water pressure	To be provided	
	(1) Capacity	10,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	(l) Push button control panel with indicator light for each unit separately (Quantity – 01 No)	To be provided	
	(m) Water analysis to be done before designing water treatment plant	To be provided	
	(n) Complete set of bottling system with sealing machine	To be provided	
	(p) The water treatment plant designed also for pure drinking water recommended by WHO	To be provided	
	(q) Chemical dosing unit	Details to be mentioned	
	(r) List of spare parts with quantity	To be provided	



Ser	Description	Specification	Must be filled up by the Manufacturer
27.	a. Cold storage (Quantity-01 No) with 02xcooling unit Prefabricated independent room, dimension 12x8x3 meter, insulation (wall, interior wall and ceiling sandwich panel) with food grade fiber reinforced plastic (FRP), poly urethane foam (PU) and food grade FRP, temperature 2°C to 4°C, with following accessories	Details to be mentioned	
	(1) Make/Brand	To be mentioned	
	(2) Model/Type	To be mentioned	
	(3) Country of origin	Group - A Country	
	(4) Operating temperature	+1°C to +4°C	
	b. Minimum 02 (two) cooling unit. Air cooled semi-hermetic compressor unit (individual frame and operation) with dual pressure ambient switch, oil pressure switch	To be provided	
	(1) Make/Brand	To be mentioned	
	(2) Model/Type	To be mentioned	
	(3) Country of origin	Group - A Country	
	c. Control panel with temperature display board & internal lighting system	To be provided	
	d. Hinged (Insulated) door with lock and emergency alarm bell (2000 x 1200 mm) (Quantity – 02 Nos)	To be provided	
	e. Induced draft evaporator (individual ceiling mounted) with electric defrost system (Quantity – 02 Nos)	To be provided	
	(1) Make/Brand	To be mentioned	
	(2) Model/Type	To be mentioned	
(3) Country of origin	Group - A Country		
f. Push button control panel with indicator light for each unit separately (Quantity – 01 No)	To be provided		
g. List of spare parts with quantity	To be provided		
28.	Freezer room complete (FRP + PU + FRP) (Quantity – 01 No)	Details to be mentioned	
	a. Size 10x6x3 meter (floor, wall and ceiling sandwich panel) capable of preserving minimum 20,000 L milk (40,000 pouches of ½ L packet) which would be accommodated in 2000 milk crates at temperature (-) 25°C with all required accessories (temperature control panel, hinged door with lock, including 2 x independent cooling unit/component)	Details to be mentioned	
	(1) Make/Brand	To be mentioned	
	(2) Model/Type	To be mentioned	
	(3) Country of origin	Group - A Country	
	(4) Operating temperature	Up to (-)25°C	
	b. Minimum 02 (two) cooling unit Air cooled semi-hermetic compressor unit (individual frame) with dual pressure ambient switch, oil pressure switch	To be provided	
	(1) Make/Brand	To be mentioned	
	(2) Model/Type	To be mentioned	
	(3) Country of origin	Group - A Country	



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	c. Control panel with temperature display board & internal lighting system	To be provided	
	d. Hinged (Insulated) door with lock and emergency alarm bell (2000 × 1200 mm) (Quantity – 02 Nos)	To be provided	
	e. Induced draft evaporator (Independent ceiling mounted) with electric defrost system (Quantity – 02 Nos)	To be provided	
	(1) Make/Brand	To be mentioned	
	(2) Model/Type	To be mentioned	
	(3) Country of origin	Group - A Country	
	f. Push button control panel with indicator light for each unit separately (Quantity – 01 No)	To be provided	
	g. List of spare parts with quantity	To be provided	
29.	CIP (Cleaning in place) unit with push button control panel and indicator light (Quantity – 01 No)	Details to be mentioned	
	a. CIP stainless steel tank (2,000L size) insulated with automatic temperature control equipment (03 individual chambers)	To be provided	
	b. CIP forward and returned centrifugal pump (Quantity-02 Nos)	To be provided	
	(1) Capacity	20,000 L/H	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	c. Automatic steam heating system (03 individual chambers)	To be provided	
	d. List of spare parts with quantity	To be provided	
30.	Electrical power system (Quantity - 01 Set)	Details to be mentioned	
	a. Indoor type 11KV/0.44KV step down minimum 325 KVA transformer with C.T and P.T (Quantity – 01 No)		
	(1) Capacity	Minimum 325 KVA	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	b. HT gear switch and LT gear switch	To be provided	
	(1) Capacity	To be mentioned	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	c. Voltage stabilizer for whole dairy plant, capacity minimum 200 KVAR (Quantity – 01 No)		
	(1) Capacity	Minimum 200 KVAR	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	d. Power factor improvement devices (PFI) capacity minimum 200 KVAR (Quantity - 01)		
	(1) Capacity	Minimum 200 KVAR	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	



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Ser	Description	Specification	Must be filled up by the Manufacturer
	e. Lt panel circuit breaker (Quantity - as required)		
	(1) Make/Brand	To be mentioned	
	(2) Model/Type	To be mentioned	
	(3) Country of origin	Group - A Country	
	f. Phase indicating light with measuring instrument		
	(1) Make/Brand	To be mentioned	
	(2) Model/Type	To be mentioned	
	(3) Country of origin	Group - A Country	
	g. Mechanical locking switch for generator and local power supply (REB/BPDB)		
	(1) Capacity	To be mentioned	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	h. Load break switch (LBS) for 11KV line		
	(1) Capacity	To be mentioned	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	i. List of spare parts with quantity	To be provided	
31.	a. Automatic protection panel , electric fault (short circuit, high/low voltage, single phasing) for whole electrical individual equipment of dairy plant (Quantity - 01 Set)	Details to be mentioned	
	(1) Capacity	To be mentioned	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	b. Automatic turn switch (ATS) for generator during running	To be provided	
	c. All types of HT cables (For transformer, CT, PT & external wiring) and all types LT cables & trays for internal wiring from main panel board to whole electrical individual equipment of dairy plant (Quantity and size - as required)	To be provided	
32.	a. Compatible generator (diesel operating system) Capacity minimum 250 KVA (Quantity - 01 No)	Details to be mentioned	
	(1) Capacity	Minimum 250 KVA	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	(5) Rated RPM with HP	To be mentioned	
	(6) Phases	3 Phases	
	b. Engine	Details to be mentioned	
	(1) Horse power	To be mentioned	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	(5) Bore and stock & CC	To be mentioned	
	(6) Number of cylinders	To be mentioned	
	(7) Fuel tank capacity	To be mentioned	



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	c. Alternator	Details to be mentioned	
	(1) Rated KVA	To be mentioned	
	(2) Make/Brand	To be mentioned	
	(3) Model/Type	To be mentioned	
	(4) Country of origin	Group - A Country	
	(5) Number of batteries	To be mentioned	
	(6) Turbo charger	To be provided	
	d. 3 Phase cables for connection of generator & local supply panel	To be provided	
	e. List of spare parts with quantity	To be provided	
33.	Plant Accessories		
	a. Automatic can washing machine (provision of steam line for washing with hot water) with capacity per H (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity	Minimum 100 can/H	
	(2) Make/Model	To be mentioned	
	(3) Type	Tunnel type	
	(4) Country of origin	Group - A Country	
	b. Aluminum alloy milk can, capacity minimum 40 L each (Quantity – 500 Nos)	To be provided	
	c. Milk crate carrying trolley (Quantity – 12 Nos)	To be provided	
	d. Automatic crate washing machine and equipment (provision of steam line for washing with hot water) with capacity per hour to be mentioned (Quantity – 01 No)	Details to be mentioned	
	(1) Capacity	Minimum 100 crate/H	
	(2) Make/Model	To be mentioned	
	(3) Type	Tunnel type	
	(4) Country of origin	Group - A Country	
	e. Milk crate (Capacity 20 pouches of 1/2 L packet) (Quantity – 1000 Nos)	To be provided	
	f. Miscellaneous items caustic soda-500 kg, washing soda 200 kg and nitric acid 500 L and other items as required	To be provided	
	g. List of spare parts with quantity	To be provided	
34.	a. Laboratory equipment required for fresh milk & milk by product following test		
	(1) Fat test equipment of fresh milk, cream and butter Garber's kit - 01 set, dispenser - 01 set and laboratory centrifuge machine - 01 No	Model, make & type, country of origin etc - details to be mentioned	
	(2) Acidity test equipment (01 set)		
	(3) Density test equipment (01 set)		
	(4) Moisture test equipment contents of butter (01 set)		
	(5) Peroxide test (01 set)		
	(6) PH tester/meter No (Quantity – 04 Nos)		



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	c. Hot water bath (Quantity-01 No)	To be provided	
	d. Automatic lab analyzer (for analysis of fat, protein, lactose, SNF etc of milk) (Quantity – 01 No)	To be provided	
	e. Miscellaneous items: List of chemicals required for minimum 12 months for various test with required quantity	To be provided	
35.	Following floor materials for dairy plant building to be offered by the supplier	Details to be mentioned	
	a. Acid proof heavy and anti-slip tiles for floor of processing area, washing area, cold room, CIP room (as per drawing) (Quantity - as required)	To be provided	
	b. Jointing materials of above mentioned acid proof tiles (Quantity - as required)	To be provided	
36.	Trial production 90 days trial production will be carried out as follows	Details to be mentioned	
	a. Following raw materials to be offered by the supplier	To be provided	
	(1) Full cream milk powder (FCMP) 10,000 kg (minimum fat 26%, protein 25%, milk sugar 36%, ash 6%), (Origin - main land of Europe)		
	(2) Skimmed milk powder (SMP) 5,000 kg (protein 23%, milk sugar 45% and ash 8%) (Origin - main land of Europe)		
	(3) Polyethylene film (100 - 110 micron) 100 kg		
	(4) For any fault of machines, if milk processing is stopped then the number of those days will not be counted for trial production		
	b. 90 days of trial production will be done under supervision of supplier (at least 30 days under supervision of foreign expert) where raw materials to be provided by the user, necessary price reduction will be imposed in case of loss of any raw materials and finished product. In this regard, a team may be formed from the both end to find out the reason of loss of raw materials and finished products with valuation	To be mentioned	
	c. During 90 days trial production necessary spare parts, various type of adhesive tapes, engine oil, filter etc to be provided by the supplier (not to be used from 5% spare parts)	To be mentioned	
	d. All finished product during trial production will be consumed by BD Army	To be mentioned	
	e. Certificate for radiation, melamine free and analytical report of milk powder (FCMP and SMP) to be handed over to the user by the supplier	To be mentioned	



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37.	Any other equipment may require should be mentioned in offer and supply for smooth operation of plant without any additional cost	Details to be mentioned	
38.	Installation Materials	Details to be mentioned	
	a. Complete set of installation materials such as inlet/outlet valve/butterfly valve MS angles, MS plates, SS bar, nuts and bolts, argon gas, welding machine, SS welding rods and copper pipes/copper coil pipes etc for the whole dairy plant and machinery	To be provided	
	b. Seamless SS pipe (grade minimum AISI 304 or equivalent) for all milk line and CIP line, steam line as required, pipe & other fittings for water, hot water, chilled water and air line should be SS pipe . Also provide the drain cover & floor outlet of SS pipe .	To be provided	
	c. Insulation with GI sheet cover for pipes (Steam & Chilled water) as required (minimum - 150 mm thickness).	To be provided	
	d. All materials to be brought at installation area for required assembling	To be provided	
39.	Lay out design of dairy plant building and layout plan of dairy machineries to be submitted by supplier with following requirements during offer	To be provided	
	a. Lay out design for entire dairy plant building with size and other instructions	To be provided	
	b. Lay out design for drainage system of entire dairy plant building with size and other instructions	To be provided	
	c. Lay out design for water supply	To be provided	
	d. Lay out design for drainage supply	To be provided	
	e. Lay out design for electric supply	To be provided	
	f. Lay out design for gas supply	To be provided	
	g. Lay out design for acid proof tiles area	To be provided	
40.	Tools & accessories with quantity for installation of whole dairy plant and maintenance of all dairy machinery	List to be provided	
41.	Catalogue/brochure of all equipment	To be submitted	
42.	Publication (In English)	To be submitted	
	a. User and operations manual (instruction book)		
	b. Electrical circuit diagrams with all accessories		
	c. Work shop/repair manual book type		
	d. Spare parts catalogue book type		
	e. 100% spare parts price list book type		
43.	5% spare parts List with quantity to be confirmed by purchase authority	Details list to be provided	
44.	Recommended fast and slow moving spare parts (if require) List with quantity	List to be provided	
45.	Installation, commission and trial production Dairy plant will be commissioned as turnkey basis. Supplier will be responsible for transportation of whole dairy plant from Chattogram port to place of installation (Military Farms), installing, commissioning and trial operations under supervision of manufacture/suppliers foreign expert	Details to be mentioned	

