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Ernakulam Regional Co-operative Milk Producers' Union Ltd.

Head Office: PB No. 2212, Edappally, Kochi-682024
(An ISO 9001:2015 & ISO 22000:2005 Certified Company)

EU/PC/758/ DG/MUPPU/2020

05.06.2020

QUOTATION NOTICE

The Ernakulam Regional Co-operative Milk Producers' Union Ltd, invites duly filled sealed and super scribed quotation from reputed manufactures, authorized dealers having sound technical and financial capabilities for the supply, installation & commissioning of 1 No. of 10 KVA three phase Diesel Generator at Mupputhadam, APCOS, Ernakulam District.

The bid shall be submitted in two cover system consisting of technical bid and price bid. The price bid of those who qualify in the technical bid only will be opened.

1. Interested eligible Bidders may obtain further information from the office of the ERCMPU Ltd.
2. Detailed terms and conditions, scope of work etc as indicated in the quotation notice/ tender document published in our website www.ercmpu.in

1.	Bid reference	EU/PC/758/ DG/MUPPU/2020
2.	Last date & time of submission of bids:	16.06.2020 at 1:30 PM
3.	Date & Time of bid opening	16.06.2020 at 2:30 PM
4.	Time of completion	15 days
5.	Estimated Amount	Rs. 3,50,000/-
6.	EMD	Rs. 3,500/-
7.	Address for communication and place of Bid opening	ERCMPU Head Office, Edappally, Kochi.
8.	Bid validity	90 days from the date of bid opening

All bids must be accompanied by Bid security (EMD) as specified in the quotation notice.

MANAGING DIRECTOR

Copy to: Dairy Manager, EKM/TCR/KTYM/PD/KTPNA
Manager (Engg), Manager (F&A), Manager (P&I), Mf/Oc.
All Notice Boards.

Terms and Conditions

1. Quantity : 1 No.
2. Guarantee : 12 months from the date of commissioning or 18 months from the supply.
3. The rate quoted shall be inclusive of all applicable taxes and duties, ESI Contribution, material cost, labour cost, transportation of materials to site, loading and unloading charges and nothing extra will be paid on any account.
4. The Bidder should have registration under GST. The registration number is to be indicated in the quotation.
5. The offers submitted and the price quoted shall be valid for 90 days, from the date of opening of quotation.
6. Tender Document duly signed and sealed by the contractor.
7. The EMD shall be in the form of:
 - By Demand Draft (valid for a period of 3 months) from a Nationalized/scheduled Bank drawn in favour of The Managing Director, ERCMPU, payable at Edappally, Kochi.
 - Payment in cash at Head Office, Edappally on all working days.
 - Any quotation without EMD shall be treated as non-responsive & shall be liable for rejection.
 - Un-successful tenderer's EMD shall be discharged / refunded as promptly as possible as but not later than 60 days after expiry of tender validity. The EMD shall not carry any interest.
 - The EMD of successful tenderer shall be discharged only after the supply of item.
8. **Eligibility & Qualification**
 - Those who have adequate experience in this field and supplied & commissioned at least two similar / higher machines to any one of the Dairies in Kerala only needs to quote.
 - The bidder should be in business as manufacturer, for a minimum period of five years at the time of bid opening in the same name and style.

- The bidder should have completed a minimum of five similar work of value of the estimated value of the Contract, for which this Invitation to Bid is issued, during the last five years.
 - The bidder's annual financial turnover in the same name and style in each year of the last three years shall not be less than the probable amount of contract as specified in the Invitation to Bid.
9. Managing Director reserves the right to accept or reject any or all the quotations without assigning any reason.
10. The prices finalized are fixed during the validity of contract period.
11. Delivery and installation shall be completed within 21 days from the date of Purchase Order at Mupputhadam APCOS, Ernakulam District.
12. The equipment shall be delivered on door delivery basis including unloading charges to within 15 days of from order.
13. Taking in to consideration, the Technical Competence and the quoted price for the goods of specified quality, the tender shall be evaluated.
- 14. Payment Terms**
- 30% advance on acceptance of the order, signing the agreement and against a bank guarantee for the advance payment for an equal amount from a Nationalised bank or from a reputed scheduled Bank valid till delivery.
 - 50% payment against safe receipt of the goods at site.
 - 10% payment on completion of erection, testing and commissioning of the items on group basis.
 - Balance 10% payment will be retained as performance security. This can be released on submission of a bank guarantee for an equal amount, from a Nationalised bank or from a reputed scheduled Bank valid for the entire guarantee period.
15. In case of any disagreement or dispute arising between ERCMPU & the supplier, the decision of Managing Director, ERCMPU shall be final.
16. The quotation notice can be downloaded from our website www.ercmpu.in.

Technical Specification

Equipment Name: Generator 10KVA (Three Phase)

1. Supply , installation, testing and commissioning of ready to use diesel engine alternator set in acoustic enclosure of 10KVA (Three phase) air cooled with Manual control Panel comprising Kirloskar/Mahindra/KEL/ EICHER coupled to Kirloskar/KEL/BHEL and potential free contacts and digital out facility and should have all provision for future DG automation without adding any components in the DG set and complete with control Panel, fuel tank of suitable capacity and battery with leads and anti-vibration pads and residential type silencer.
2. The Engine Alternator supplied should be of ready to use type (RTU), the BHP of engine may be suitably enhanced as per site conditions in order to deliver the minimum required KVA at site.
3. The Engine shall be equipped with governor of required accuracy and all standard fittings, flexible pipe, Engine compatible sealed maintenance free battery for starting, fixed between base frame, suitable capacity fuel tank for running the E/A set. Digital type electronic governor is not mandatory for all the ratings.
4. Connected with steel wire braided fuel pipe, silencer, MS exhaust pipe of suitable size and length as per site requirement covered with two layers of 6 mm.
5. One Layer of 12 mm thick asbestos rope, instrument panel equipped with necessary instruments, directly coupled with alternator of suitable capacity on a suitable length of common base frame, channel fixed on suitable nos.
6. AVM pads including required length of suitable size. Copper conductor unarmored XLPE cable with cable glands and lugs for inter connection between alternator and control panel, providing tools for normal maintenance and all other accessories complete as required and as per detailed specifications.
7. **Operating Conditions:** The engine alternator shall be capable of working at any ambient temperature between 0 Deg C to 50 Deg C with relative humidity upto 95% condition.
8. The working KVA rating at site condition after accounting for de-rating shall be obtained at 0.8power factor.
9. When there is an electrical main supply failure it will be required to work continuously for a period which may even exceed 24hour at a time.

10. The set shall be capable of taking 10% overload for a period of one hour during every 12 hours.
11. **Output voltage frequency and wave form:** Nominal output voltage shall be 415 Volt, 50 Hz, 1500 rpm
12. **Diesel engine:** Engine shall be reciprocating compression ignition engine as per manufacturer standard design and conforming to IS10002:1981, BS 5514 DIN 6127, ISO 3046
13. **Lubrication:** Lubrication shall be positive pressure type lubricating all moving parts. No moving parts shall require lubrication by hand either prior to the starting of the engine or while it is in operation. Temperature and pressure gauge shall be fitted to the lubricating system.
14. **Fuel tank:** Fuel tank shall be drawn out type for easy maintenance provided between base frame or separately installed in case of installation in a canopy.
15. The tank shall have level indicators marked in litres, filling inlet with removable screen, fuel out let located at minimum of 25mm above the bottom at outer face of canopy, drain plug air vent and necessary piping, hand pump for pumping the fuel into the service tank with necessary pipe or tube shall be provided.
16. The outlet of the pump shall be provided with 3-meter long reinforced hosepipe. The capacity of the tank is so as to design that there should be a capacity to fill the diesel for minimum of 8 hour continuous operation for DG set up to including 160KVA.
17. **Fuel piping:** Steel wire braided pipe with hydraulically compressed benzo of superior quality shall be provided for fuel piping.
18. **Silencer:** Residential silencer with approved make/supplied by the engine manufacturer shall be provided. Silencer shall be supported on both ends and located as per engine manufacturer recommendations. Silencer shall be provided outside the canopy. The exhaust system of the generator must not be positioned so as to make any mark on the fence, containers or tower.
19. **Speed and governing:** The engine shall operate on 1500 RPM and be able to meet site conditions with regard to Voltage, Speed, Frequency and regulation equipped with governor of required accuracy.
20. **Engine start:** Engine shall be cold and self-starting type. The starter battery shall have suitable copper connecting lead, sufficient to meet engine starting and control gear requirement as per manufacturer specification.
21. **Battery charging:** The battery charging shall be done through alternator and solid state battery charger.
22. **The engine shall have following accessories: -**
 - a. Heavy duties fly wheel.

- b. Coupling with guard.
- c. Fuel Pump suitable for lifting the fuel from fuel tank provided below E/A sets.
- d. Governor.
- e. Pre filters.
- f. Fuel Filter.
- g. Pre-filter in lift pump/button filter.
- h. Lubricating oil filter and cooler.
- i. Residential exhaust silencer.
- j. Electrical Starter motor, Blower fan.
- k. Charging Alternator.
- l. Expansion bellow
- m. Centrifugal bypass filter
- n. Battery charging alternator
- o. Digital electronic Governor
- p. Stainless steel exhaust flexible coupling
- q. Dry type Air Cleaner
- r. All accessories included in the standard set like safeties, solenoid valve etc. shall be got from manufactures as a part of equipment.

23. Integrated control system: Microprocessor based generator set monitoring, protection and electronic governing system .The monitoring system should be designed for the genset environment, provides genset protection, engine control and displays genset parameters (both engine & alternator), eliminating use of multiple conventional controls & metering.

24. Physical construction:

- a. LCD alpha- numeric display
- b. Nonmetallic enclosure
- c. LED display- faults, warnings and generator set status Key switch for OFF/RUNS/START.

25. Governor & Speed /Frequency regulation: Integrated electronic governing (adjustable up to 5%).

26. Operator Interface:

- a. Manual stop/start
- b. Cyclic cranking
- c. Alpha numeric screen
- d. Alternator trim adjustment
- e. Model specific calibration

- f. Field trim adjustment

27.AC Instruments:

- a. 1-phase AC Amps
- b. 1-phase AC volts
- c. KW
- d. VA
- e. Power factor
- f. Frequency

28.Measurements/Instrumentation:

- a. Lube oil pressure
- b. Coolant temperature
- c. Engine speed
- d. Hours run
- e. Battery voltage

29.Engine protection:

- a. High coolant temperature (Audio-visual alarm & trip)
- b. Low lube oil pressure (Audio-visual alarm & trip)
- c. Fail to crank (trip)
- d. Fail to start (trip)
- e. Over speed (trip)
- f. Low /High battery voltage (Audio-visual alarm)
- g. Low coolant level shutdown(trip)
- h. Engine shuts down due Charge alternator failure (Audio-visual alarm)
- i. Engine shuts down due to lack of fuel (Audio-visual alarm)

30.AC protection:

- a. Over frequency (trip)
- b. Under frequency(warning)
- c. Over voltage (trip)
- d. Over current (trip)
- e. Under voltage(Audio-visual alarm)

31.Miscellaneous:

- a. Operating temperature range 0-60 °C
- b. Common fault alarm
- c. Common shutdown

- d. Date and time stamps for alarms

32. OTHERS

- a. Vibration damper.
- b. Flywheel with housing.

33. ALTERNATOR

Alternator 10KVA/8KW, Three phase 415 V, 0.8 pf, 50 Hz at 1500 RPM brushless alternator. The voltage regulation will be +/- 5%. The alternator shall be class H. The insulations are designed, built and tested to IS 4722/1992. BS 5000 part 99, IEC: 34-1 or any other equivalent Indian or international standards.

34. CONTROL PANEL: Control panel as per Kerala Electrical Inspectorate requirement, floor mounting type, totally enclosed sheet metal suitable for above alternator incorporating the following AC Volt meter, Voltmeter selector switch, 1 Nos. AC ammeters, indicating lamps "LOAD ON & SET RUNNING" Control panel & its legs support shall be cubical type made of 16 gauge M.S. sheet with hinged type openable covers mounted on suitable channel at suitable location inside the canopy. All the control panel wiring should be easily accessible and shall have sufficient working space for making connections of cables etc. A tinned copper earth stud of adequate dimension shall be provided. Sign Writing shall be clear, good looking and to be done in factory.

35. CONTROL PANEL: It should consist of the following.

- a. Control panel of should be consist of 1 no compatible MCCB having the provisions of short circuit and overload protection mechanism and the relay should be of suitable range and the relay should be of suitable range so as to make the setting of EA set full load current.
- b. Provision of release of Solenoid automatically after 30 seconds while the Engine stops due to any fault.
- c. **One electrical/electronic hour counter meter installed inside panel connected from O/P of MCCB.**
- d. 1set of L.E.D. type pilot lamps with RED for set running and Green for set with load on.

- e. A set of L.E.D. pilot lamp for phase indication.
- f. **Battery Charger:** Automatic trickle /boost battery charger of SCR or SMPS type to charge the starting battery of DG set. This charging shall be done through main supply for which a suitable incomer shall be provided in the panel with suitable range of ammeter and voltmeter on the DC side with protective fuses. The connection of
- g. charging alternator & solid state battery charger shall be done as mentioned in detail specification.
- h. Push button for start, stop, reset, test, acknowledge located on Panel.
- i. Hooter.

36.ACCOUSTIC ENCLOSURE

- a. It should be sound proof, weather proof & environment friendly, conforming to the latest environment (protection).
- b. NOISE LEVEL :- 75 DB at 1 meters from the enclosure surface under free field conditions as per CPCB norms.
- c. The acoustic panels shall be fabricated in 16 SWG CRCA sheet. The finished sheet metal component shall undergo seven tank treatment process for degreasing, derusting, phosphatising etc. for longer life and should be by Polly polyester based coated inside & outside. The nuts bolts and other hardware shall be Zinc coated. The door shall be provided with high quality EPDM gaskets to avoid leakage of sound. The door handles and hinges shall be Zinc plated & lockable type.
- d. Adequate ventilation shall be provided to meet the air requirement for combustion & also to expel heat to maintain temperature inside the enclosure within 5 degree Celsius above ambient at 10% overload with tripping arrangement between (50 – 60) degree Celsius.
- d. An arrangement for adequate illumination inside the enclosure shall be provided

- e. Separate door with locking arrangement for easy access to D.G. set during operation & maintenance should be provided.
- f. The enclosure shall be guaranteed for a period of 24 months from the date of completion of work against defective materials& rust, welding, painting, smooth functioning of doors, inspection window etc. minor civil work is to be carried out without any extra cost.
- g. Small see through window for reading meters etc. made of transparent polymer sheet of thickness not less than 10mm shall be provided.
- h. Fuel Tank and Control Panel shall be incorporated inside the canopy.
- i. Two point lifting arrangement.
- j. Main base frame of suitable size MS channel welded with suitable size thick MS sheet for bolting arrangement complete as required.
- k. Framework will be provided for floor made out of 3mm thick chequered plate i/c welding, painting etc complete around foundation as required.
- l. The canopy shall be provided with emergency stop button easily approachable from outside.
- m. The canopy shall be provided with following meters (visible from outside): -
- n. Lub. Oil pressure gauge.
- o. Dial type fuel gauge with sensing arrangement.

BASE FRAME: Base frame is fabricated in sheet metal. The base frame is rugged in construction, engine and KG brush less alternator close coupled, with cross members mounted on AVM. The base frame shall have provision for mounting of acoustic enclosure and control panel on it. The base frame is having provision of lifting hook for convenient lifting of complete set. i. e, along with canopy, engine and alternator

37. GENERAL REQUIREMENT

- a. The set shall have minimum vibration and noise under all conditions of load. The set shall be dynamically balanced. Anti-vibration mounting shall be provided for supporting the set.
- b. Air filter should be easily accessible for maintenance.
- c. Visual oil pressure meter for lubrication oil should be provided.
- d. Water separator fuel filter to be provided.
- e. The set shall be fitted with radio interference suppressers in case of slip ring type alternator.
- f. Control wiring shall be done with 1.5Sq.mm multi strand PVC insulated copper conductor cable.
- g. Earthing provision should be made for earthing all current carrying metal parts of the equipment. Earthlugs of suitable size shall be provided.
- h. All the exposed moving parts like coupling etc. shall be provided with suitable guards covering.
- i. All exposed metal parts shall be suitably finished to prohibit corrosion.
- j. A nameplate showing rating connection diagram should be provided on engine and alternator. All the important and major parts should bear there catalogue number make of the parts etc. All the control wiring shall be provided with letter number ferules at both ends. Three sets of manual giving the details about design, specifications, special features of the equipment schematic and wiring diagram instructions regarding installation and maintenance etc. should be supplied. A laminated control wiring diagram should be pasted inside the control panel.

38. Control Panel with changeover switch: Control panel shall be cubical type made of Minimum 16 gauge CRCA sheet dust proof, vermin proof & powder coated Control panel, comprising of all safety and indication arrangements with hinged type openable covers mounted above base frame at suitable location and supported on both sides on base frame. All the control panel wiring should be easily accessible and shall have sufficient working space for

making connections of cables etc. The changeover of suitable rating and the separate indication lamp for DG/EB supply are to be included.

40. Make of Material:

- a. Change over Switches/MCCB/Contactors/Relays:** L&T/GE/C&S/ABB/Siemens/ Schenider Similar superior make
- b. Cables:**Gloster/Universal/Havels/Rallison XLPE Similar Superior make

INSTALLATION AND COMMISSIONING

The total job is on turnkey basis which includes supply, installation, testing & commissioning of DG set. Minor civil works, providing & grouting supports are included in the contractor's scope. All associated electrical works including earthing (earth pit also) for the commissioning of the DG set is in the contractors scope. Collecting the sanction and approval from Kerala State Electrical Inspectorate & KSEB is also included in the contractor's scope.

PRICE QUOTE FORMAT

To

The Managing Director
Ernakulam Regional Cooperative Milk Producers Union Ltd,
Edappally

Sir,



Ref: Tender Notification NO. EU/PC/758/ DG/MUPPU/2020 dtd 05.06.2020

With reference, I/We herewith submitting my/our Price Schedule for the item indicated below:-

Sl. No	Particulars	Unit	Qty	Rate (Rs)	Amount (Rs)
1	Supply of DG (10 KVA) three phase	No	1		
2.	Erection, testing and commissioning of the above	No	1		

Total amount

Rs.....

Rate should be valid for 90 days

Work should be completed within 15 days from the date of issue of order.

The above price inclusive of: Central Excise Duty, GST/ CGST/UTGST/ IGST, Packing, forwarding etc, Loading & Unloading, Entry Tax, Levies etc.

Name of Tenderer & address

SIGNATURE OF TENDERER OR
AUTHORISED SIGNATORY

Name & Designation:

P.S: If necessary, the tenderer can make use of the firm's letterhead to quote the price/s and enclose. However, this format shall be duly completed and signed/sealed.