

MODEL POLYTECHNIC COLLEGE KARUNAGAPPALLY

(0476-2623597,8547005083)

TENDER NOTICE

Tender No. P/1025/16-17/MPTCK- Purchasing of 40 KVA Diesel Generator.

Last date for sale of tender form	: 20/03/2017 2 PM
Last date for receipt of tender	: 22/03/2017 2 PM
Date and Time for opening of tender	: 23/03/2017 3PM
Date up to which the rates are to be firm	: 6 Months
EMD	: The amount of EMD shall be one percentage of total cost of articles tendered for. (This is subject to a Minimum of Rs.1500/-)
Price of tender form	: Rs.1125 /-
Price of duplicate copy	: 50% of cost of the original copy.
Place(s) and timing of sale of tender documents:	The Principal, Model Polytechnic, Karunagappally, Edakkulangara PO, Kerala, PIN-690562 From 25/02/2017 to 20/03/2017. 2pm
Place and deadline for receipt of tenders	: The Principal, Model Polytechnic, Karunagappally, Edakkulangara PO, Kerala, PIN-690562 From 25/02/2017 to 22/03/2017. 2pm
Place, time & date for opening of tenders	: The Principal, Model Polytechnic, Karunagappally, Edakkulangara PO, Kerala, PIN-690562 Date: 23/03/2017, 3.00PM
Any other important information	: nil

Detailed specifications:

Sl No	Name of item with Specification	Qty
1	<p>40KVA Diesel Generator</p> <p>DETAILED SPECIFICATIONS:</p> <p>Diesel engine and alternator shall be close coupled and mounted on a base plate of robust construction.</p> <p>SPECIFICATION FOR ALTERNATOR, DIESEL ENGINE AND MANUAL AND AMF CONTROL PANELS :</p> <p>1. ALTERNATOR :</p> <p>(a) The Alternator shall be self excited and self regulated of specified KVA rating in single/ three phase at 240/415 Volt,50 Hz,1500 RPM/3000 RPM(as applicable) and 0.8 power factor and shall conform to IS:13364 (Part 1):1992(reaffirmed 2003) (up to 20 KVA)or IS: 13364(Part 2)/1992(reaffirmed 2003) (above 20 KVA).</p> <p>The alternators shall be of brush less type with VG-1 Grade or better grade of voltage regulation.</p> <p>(b) The alternators shall be screen-protected drip proof with Minimum IP-21 degree of protection as per IS:4691/85 (Reaffirmed 2004).The class of insulation of the Alternator would be 'H'. The rated voltage of Alternator will be 240V for single phase & 415 V for three phase.</p> <p>2. Diesel Engines to be used in the DG Sets may be either of Naturally Aspirated or Turbo Charged type.</p> <p>(3) DIESEL ENGINE (Naturally Aspirated):</p> <p>(i) Diesel Engine shall be air or water cooled as specified, electric start developing required B.H.P at 1500 RPM/3000 RPM (as applicable) with Class A-2 Governing or better for alternator to deliver specified continuous KVA output at 0.8 pf lag at NTP conditions(all rating shall be tested at 0.8 PF lag).</p> <p>The Diesel Engine should be capable of providing 10% overload for one hour for every 11 hours continuous running at full load.</p> <p>(ii) Naturally aspirated engines of rating upto and including 19 KW shall be ISI MARKED as per IS:10,001/1981 (reaff 2006).</p> <p>(iii) Naturally aspirated engines of rating above 19 KW shall conform to IS:10,002/1981 with Amdt 1 to 2.</p> <p>(iv) The specific fuel consumption of engine shall be as per IS specn.</p> <p>(v) The Diesel Engine shall be complete with the following accessories:</p> <p>(a) Fuel tank with capacity for 12 hours continuous running at full load.</p> <p>(b) Engine instrument Panel consisting of starting switch with Key, Lube Oil temperature and pressure gauges, (water temperature gauge in case of water cooled</p>	1

engines), RPM indicator and hour meter.

(c) Safety controls to shut down the engine in the event of low lube oil pressure or high cylinder head temperature in case of air-cooled engines or high water temperature in case of water-cooled engines.

(d) Radiators in case of water-cooled engines.

(e) Exhaust silencer of Residential type.

(f) 12V starting system complete with starter motor, charging alternator and Cutout.

(g) Lead Acid , semi maintenance free or sealed maintenance free battery of suitable ratings with connecting cables and the battery/ies shall conform to relevant IS Specn. The batteries of only following make shall be accepted: Exide, TUDOR, Amco, Amaron, Amar Raja, Tata Green, Cummins pulse lite,

Standard Furukawa, Prestolite.

(h) Standard set of tools consisting of a set of 3 spanners, one screw driver, one standard plier and one nose plier of appropriate size shall be provided to the consignees along with DG sets, free of cost for each of DG sets.

4. DIESEL ENGINE (Turbo-charged):

The turbocharged Diesel Engine shall be air or water cooled, as specified, electric start developing required BHP at 1500 RPM/3000 RPM (as applicable) with class A-2 or better governing to deliver specified continuous KVA output at 0.8 Power Factor Lag at NTP conditions. The Diesel engine should be capable of providing 10% overload for one hour in every 12 hours continuous running at full load. The turbocharged Diesel engine shall conform to IS:13018/1990(reaffirmed 2005)AND IS: 10,000 series.

The Turbocharged Diesel engine shall be complete with the following accessories

(a) Fuel tank with air breather, drain plug with capacity for 8 hours of continuous running at full load or 990 liters capacity, whichever is lesser.

(b) Engine instrument panel consisting of starting switch with key, lube oil temperature and pressure gauges, RPM indicator and hour meter with additional feature of auto start/remote start and auto stop.

(c) Safety control to shut down the engine in the event of overspeed, low lube oil pressure and high engine water temperature.

(d) Exhaust silencer residential type.

(e) 12 V or 24 V starting system complete charging alternator or dynamo and cutout.

(f) Lead Acid , semi-maintenance free or sealed maintenance free batteries of suitable ratings with connecting cables shall be provided. The batteries shall conform to relevant IS Specn. Only, the following make of batteries shall be accepted- Exide, Tata Green, Amron, Amco, Tudor, Cummins-Pulse-lite, Prestolite and Standard Furukuwa.

(g) Anti-Vibration mountings for complete DG set in case of flexible coupling and for turbocharged engine in case of direct coupling.

(h) The fuel level should be indicated with the help of fuel gauge meter.

(i) There should be provision for filling the fuel from outside (as in case of automobiles) with locking arrangement.

5. MANUAL CONTROL PANEL :

(i) The manual Control Panel shall be fabricated from steel sheet of 1.5 mm thickness minimum duly pre-treated and aesthetically finished. The Control Panel shall be totally enclosed, dust and vermin proof, floor mounted or wall mounted/skid mounted or integral type (unless specifically specified as one of these options by DDOs) with IP-53 degree of protection and shall conform to IS/IEC 60947(Pt-1)/2004. Firms shall get the item type tested as per revised standard.

(ii) The Control Panel shall have the following instruments :

(a) Composite meter for digital display of

i) Generator voltage.

ii) Load Current.

iii) Power Factor.

iv) Frequency (for 15 KVA & above)

v) Energy (for 15 KVA & above)

(b) One MCCB of suitable rating for DG sets .

(c) Push button-switch for ON and OFF operation .

(d) Pilot lamps, three in case of single-phase and five numbers in case of three phase (one for each phase, one for load on set and one for charging on).

(e) Battery charger complete with voltage regulator, voltmeter and ammeter should provide for Trickle charging as well as Booster charging for charging the battery from mains. This will be in addition to the battery charging alternator fitted on the engine.

(iii) All the components in the control panel shall be properly mounted, duly wired and labeled. Suitable terminals are to be provided for panel incoming and outgoing connections. The instruments/Components shall be of reputed make.

6. AMF CONTROL PANEL :

(i) Automatic mains failure (AMF) control panel, where applicable, shall be able

to start up the DG set and transfer the load on to the DG set on mains failure without requiring any human intervention. Similarly on restoration of mains supply, it shall be able to transfer the load to mains supply and switch off the DG set automatically.

(ii) The AMF panel shall be an enclosure with the IP-53 degree of protection conforming to IS/IEC 60947(Pt-1)/2007, fabricated from minimum 1.5 mm thick steel sheet duly pre-treated and aesthetically finished.

(iv) The AMF Control Panel shall have the following instruments :

(a) Microprocessor based relay with composite meter for digital display of

i) Generator voltage/ AC Mains voltage.

ii) Generator Current.

iii) Power Factor.

iv) Frequency (for 15 KVA & above)

v) Energy (for 15 KVA & above)

vi) Three attempts engine start/engine cranking relay.

vii) On -delay timer for load change over

- viii) On-delay timer for engine shut off
- ix) Over current relay.
- (b) Mode selector switch for setting the panel on any one position such as off or auto or manual or test.
- (c) Engine On-Off switch (Push button type)
- (d) MCCB of suitable rating shall be provided.
- (e) Rectangular aluminum bus bars (one number for each phase, neutral and Earthing terminal) of adequate ratings duly colour coded with heat shrinkable PVC sleeves.
- (f) Two contactors of suitable rating (one for DG set & one for AC mains) with over load relay.
- (g) Under-voltage relay for mains.
Battery charger complete with voltage regulator, float or booster selector switch, on-off switch, voltmeter and ammeter for charging the battery from mains. This will be in addition to the battery charging alternator fitted on the engine.
- (i) Instrument & Control Fuses.
- (j) Five number indicating lamps to indicate 'mains ON', 'load on mains', 'set running', 'load on set' and 'battery charger on'.
- (k) Audio visual alarm for 'Low lubricating oil pressure', 'High water temperature' (for water cooled), 'High cylinder head temperature' (for air cooled), 'Start failure' and 'DG over load'.
- (l) Any other switch, instrument, relay or contactor etc. essential for smooth and trouble free functioning of DG set with AMF panel. (To be specified by the tenderers in their offer with complete details of the item).
7. Supplier shall furnish complete & satisfactory TTC for engines, alternators complete with enclosure to be used by them for EACH rating of DG sets clearly indicating make, model and ratings of the DG sets tested at the time of registration and pre-despatch inspection.
8. The TTC of three phase alternators shall cover 'unbalanced load test' as per cl.24 of IS:13364(part-1 or part-2)/1992 as applicable.
- Either of the following types of TTC shall be acceptable:
- Type Test Certificate issued by recognized Government Lab.
- ii- Type Test Certificate issued by recognized Government Lab irrespective of whether engines and alternators were tested at firm's lab or some other lab, but witnessed by Government representative.
- iii- Type Test Certificate issued by BIS, irrespective of engines and alternators were tested at firm's lab or some other lab, but witnessed by BIS/ Government representative.
- iv- Type Test Certificate issued by DQA on basis of test conducted at manufacturer's lab in presence of DQA officers.

9. The testing of diesel generating sets, for all ratings, shall be done at 0.8 PF lag.
10. Testing shall be done at continuous power output for each rating.
11. Necessary gauge/ meters shall be fitted to indicate (a) the quantity of fuel left in the fuel tank, and (b) hours of DG set operation.
12. DG Sets shall be provided with integrated acoustic enclosure which shall conform to latest norms of Central Pollution Control Board (CPCB).
13. The acoustic enclosure offered shall conform to the drawings type approved by Govt lab, for conformity to noise norms. This aspect shall also be verified at the time of inspection.
14. DG sets shall meet the requirements of Environmental(Protection) Rules 1986 as laid down by Min. of Environment & Forests read with GSR 371 (E) dated 17.5.2002, GSR 520(E) dated 01.7.2003 , No.448 (E) dated 12.07.2004 , GSR 771(E) dated 11.12.2013 & GSR 232(E) dated 31.03.2014, Gazette Notification No.167 dated. 31.03.2014 and Gazette Notification No. 578 dated. 11.11.2014. in respect of noise and emission norms. The latest amendments to above GSRs shall be applicable as and when amended by Ministry of Environment and Forest. DG sets shall also meet all other statutory requirements as notified by Govt. from time to time.
15. Supplier shall furnish following documents issued by a Govt authorized agency at the time of registration and pre-despatch inspection:
 - a) Type approval certificate (TAC) for emission norms for EACH model/ family of engine.
 - b) TAC from for noise level norms EACH model of DG set.
 - c) COP for EACH model of DG set and engine used in DG set.
16. Scope of supply shall include supply and commissioning of the complete DG set at the consignee's end.
17. The item being brought on rate contract in this case has been categorized as safety / Difficult / Complaint prone item. Therefore registration with NSIC should be based on the capacity verification by the Quality Assurance Wing of DGS&D. NSIC registration should specifically indicate that their registration has been done based on favourable capacity assessment report from QA Wing of DGS&D. In respect of tenderers who are already registered with NSIC for the stores of tender enquiry but their registration is not based on favourable capacity report from DQA DGS&D concerned, the special capacity report from DQA DGS&D must be received in DGS&D. Such firms should also get their registration certificate endorsed by NSIC for future reference.
18. A copy of formal agreement between the engine manufacturer and DG set supplier for continuous supply of engines, during the validity period of the rate contract, should be submitted to DGS&D at the time of registration and inspection, unless DG Set supplier themselves are not manufacturer of engines also.
19. Tenderers shall furnish the data in the questionnaire for each quoted items separately, alongwith their offer, including specific fuel consumption. The questionnaire and

answers

shall be made part of R/C for guidance of all the stake holders.

20. Firms shall furnish valid BIS license for all engines models upto 19 KW rating at the time of registration and inspection.

21. Tenderers shall furnish list of authorized service centres throughout the country with complete address, phone number, fax & email etc.

22. DG set manufacturers shall provide a list of inventories being supplied with the DG sets, to enable the consignment to verify them, at the time of delivery. The inventory list shall be attached alongwith the Inspection Notes.

23. Electronic governor shall also be acceptable in place of mechanical governor.

Diesel Generating Sets with AMF Control Panel

Diesel Generating sets with AMF control panel with 1500 rpm shall comply to the specifications given in General Technical Requirements.

Diesel Generating Sets with Manual Control Panel

Diesel Generating sets with manual control panel with 1500 rpm shall comply to the specifications given in General Technical Requirements.

Terms and conditions:

Whether Samples essential : Yes

Period within which goods should be delivered : 15 days

Rates should be quoted for delivery

FOR KARUNAGAPPALLY

AT Model Polytechnic Store, Karungappally

Other special conditions : Terms of Guaranty/ Warranty should be at least 1 year

PRINCIPAL