

CENTRAL ANIMAL HOUSE

JAMIA HAMDARD

HAMDARD NAGAR

NEW DELHI - 110062

TENDER DOCUMENTS

FOR

RADIATOR COOLED DG SET

WITH AMF PANEL

NOTICE INVITING TENDER

M/s-----

1.1 Sealed item rate tenders in the prescribed form are hereby invited from manufacturers / approved authorized agency by the undersigned for the work as detailed below:

- | | | | |
|-------|---|---|--|
| i) | Name of work | : | S/I/T/C of 380 KVA RADIATOR COOLED DG SET for central Animal house, Jamia Hamdard. |
| ii) | Estimated Cost | : | 20 Lakhs (Twenty Lakhs) |
| iii) | Earnest Money | : | 0.30 Lakhs (Thirty Thousand only) |
| iv) | Cost of Tender Document | : | 1000/- |
| v) | Sale of Tender | : | From cash counter of Jamia hamdard or in case down load from website a draft of Rs.1000/= in favour of Registrar, Jamia Hamdard should enclose along with the Tender Document. |
| vi) | Pre - bid meeting | : | |
| vii) | Date of Receipt and Opening | : | |
| viii) | Completion Period | : | One and Half Month |
| ix) | Address for Purchase and Submission of tender | : | REGISTRAR
JAMIA HAMDARD,
HAMDARD NAGAR,
NEW DELHI - 110062. |

1.2 PRINTED TENDER Documents consisting of detailed Plans, complete specification, the schedule of work 'conditions of contract' can be obtained on Payment of tender cost from address as detailed in Para 1.1 above.

3 The site for the work is available.

4 The acceptance of tender will rest with Jamia Hamdard who does not bind itself to accept the lowest tender and reserves right and authority to reject any or all the tenders received without assigning any reason thereof. All tenders in which any of the prescribed condition are not fulfilled or are incomplete in any respect are liable to be rejected.

- 1.14 The tenderer should read the specifications and study the tender drawings carefully before submitting the tender.
- 1.15 The tenderer's responsibility for the contract shall commence from the date of issue of orders of acceptance of tender.
- 1.16 The tenderer should verify all plans, elevations and sections shown in the drawing and in case of doubt about required particulars which may in any way influence his tender, same may be got clarified from the issuing authority of tender before submitting the tender. No allowance whatsoever will be made beyond the contract for any alleged ignorance thereof.
- 1.17 The site for execution of the work will be made available, as soon as the work is awarded.
- 1.18 The tender documents has the specific terms and conditions on which tenders are invited. Hence, **all tenders should be in strict conformity with the tender documents and should be filled in where ever necessary and initialed.** Incomplete tenders are liable to be rejected. The terms and conditions of the tender documents are firm as such conditional tenders are liable to be rejected.
- 1.19 The tenderer while submitting tender must provide adequate information regarding his financial, technical and organizational capacity to execute the work of this nature and magnitude.
- 1.20 The tenderer shall submit list of the works which are in hand (progress) in the following form.

Name of Work	Name of Client	Date of Start	Date of Complete	Amount of Work	Position of Works in Progress	Remarks

- 1.21 The tenderer shall submit details of staff organization proposed to be committed for execution of work as per Annexure B.
- 1.22 RATES:
 - 1.22.1 The tenderers should quote in figures as well as in words the rate, and amount tendered by them. The amount for each item should be worked out and the requisite totals given.
 - 1.22.2 Special care should be taken to write the rates in figures as well as in words and the amounts in figures only in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the word "Rs" should be written before the figures of rupees and word P, after the decimal

the word 'Paise' should be written at the end. Unless the rate is in whole rupees and followed by the words 'only', it should invariably be upto two decimal places. While quoting the rate in schedule of quantities, the word 'only' should be written closely following the amount and it should not be written in the next line.

1.22.3 An item rate tender containing percentage below/above will be summarily rejected. However, where a tenderer voluntarily offers a rebate, this may be considered.

1.22.4 Rates quoted by the tenderer in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. If on check there are differences between the rates quoted by the tenderer in words and in figures or on the amount worked out by him, the following procedure shall be followed:

- i) When there is difference between the rates in figures and in words, the rates which correspond with the amount worked out by the tenderer shall be taken as correct.
- ii) When the amount of an item is not worked out by the successful tenderer or it does not correspond with the rate written either in figures or in words then the rate quoted by the tenderer in words shall be taken as correct.
- iii) When the rates quoted by the tenderer in figures and in words tally but the amount is not worked out correctly, the rate quoted by the tenderer will be taken as correct and not the amount.

1.22.5 i) Rates quoted shall cover the providing of waterproof store of 250 cement bags storage capacity with suitable lock and key arrangements.

ii) Rates quoted shall cover the provision of site laboratory, if applicable, for routine tests. For this purpose successful tenderer shall provide all the equipments and machines as required for the testing and approved by the Project-in-Charge.

iii) Rates quoted shall include that successful tenderer shall remove all stores, working yards, labour hutments after completion of work/instructed by Owner from time to time or before final payment. He will also clean all rubbish, debris, leveling filling if any so as to leave site in clean and tidy conditions for other works/successful tenderers as directed by Project -in-charge.

1.22.6 Rates quoted shall include provision of all scaffolding, tools, tackles and other equipments generally required for proper execution of the work.

1.22.7 (a) Rates shall be inclusive of all taxes, octroi, toll or sales tax, professional tax, royalties or any other taxes or levies etc. payable by the successful tenderer and the Owner will not entertain any claim whatsoever in this respect.

(b) Sales tax, turnover tax or any other tax on work done in respect of this contract shall be payable by the successful tenderer and Owner will not entertain any

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S.No.	Description	Qty.	Unit	Rate in Figures in Rupees	Amo
	<u>D. G. Set</u>				
1.0	Supply, installation, testing and commissioning of silent type water cooled DG set conforming to latest environment protection regulations for emission and noise level comprising of radiator/heat exchanger, vertical multicylinder diesel engine equipped with flywheel having Prime Power Rating of not less than 380 KVA, 415 Volts at 1500 RPM, 0.8 lagging power factor at 415 volt suitable for 50 Hz, 3 phase system & for 0.8 Load Factor and consisting of the followings:				
a)	Diesel Engine:				
	Diesel Engine 4 stroke water cooled (Radiator directly coupled to engine shaft/Remote Radiator), electric start of suitable BHP at 1500 RPM suitable for above prime power output at NTP conditions and conforming to BS 5514, BS 649, IS 10000. The engine shall be fitted with all accessories including electronics/AI governor etc. complete as required. Cummins make				
b)	Engine mounted instrument Panel fitted with and having digital display for following:				
i)	Start-stop switch				
ii)	Water temperature indication				
iii)	Lubrication oil pressure indication				
iv)	Battery charging indication				
v)	RPM indication				
vi)	Over speed Trip indication				
vii)	Low lub. Oil trip indication				
viii)	Engine Hours indication				
c)	Alternator :				
	Synchronous alternator rated for not less than 380 KVA, 415 Volts at 1500 RPM, 3 phase 50 Hz, AC supply with 0.8 lagging power factor at NTP. The alternator shall be having SPDP enclosure, brushless, continuous duty, self-excited and self-regulated through AVR conforming to IS: 4722/ BS 2613				

	suitable for tropical conditions and with class F/H insulation.				
d)	Base Frame & Foundation :				
	Both the engine and alternator shall be mounted on suitable base frame made of MS channel with necessary reinforcement with AVM, which shall be installed on suitable cement concrete foundation and vibration isolation arrangement as per recommendations of manufacturer.				
e)	Fuel Tank :				
	Daily service fuel tank in side the enclosure of capacity not less than 520 lts. having thickness of MS Sheet as per OEM standard complete with all standard accessories and fuel piping between fuel tank and diesel engine with suitable fuel piping arrangement as per OEM standard design for inbuilt tank complete with valves, level indications & accessories as required as per specifications.				
f)	Exhaust System				
	Dry exhaust manifold with suitable exhaust residential grade silencer to reduce noise level.				
g)	Starting System				
	2X12 V DC starting system comprising of starter motors; voltage regulator and arrangement for initial excitation complete with suitable nos. of batteries of suitable capacity and type, its stand as per standard practice of engine manufacturer etc as required as per specifications.				
h)	Acoustic and weather proof enclosure with arrangement for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air in to the atmosphere as per specifications.				
i)	Installation of D.G. sets on the foundation and including making P.C.C. foundation (1:2:4 M-20grade) of approximate depth of 400 mm, providing first filling of lub oil, first filling of diesel for testing at site, arrangement of necessary load for testing, testing of DG set for four hours at full load & commissioning.				
	TOTAL	01	Set		

	Auto-mains failure panel				
2.0	Fabricating, Supplying, Installation, Testing & Commissioning of indoor type, floor mounted automatic mains failure control panel. suitable for 380 KVA silent type DG set complete with relays, timers, set of CTs for metering & protection and energy analyzer to indicate currents, phase and line voltages, frequency, power factor, KWH, & provision for overload, short circuit, restricted earth fault, under frequency, control cabling from AMF panel to diesel engine and elsewhere (approx. 20 mtr. run) if required, all complete including the followings:				
i)	1200 Amps. 4 Pole power Contactor - 2 Nos.				
ii)	1200Amp. , thermal release 50 KA, 4 Pole MCCB - 2 Nos.				
iii)	2 Nos. over voltage relay, 2 Nos. reverse power relay and 2 Nos. under voltage relay.				
iv)	2 Sets of dual core amps CTs of 15 VA burden and accuracy class 0.5 for metering and 5P10 for protection.				
v)	2 Sets Digital Energy analyser unit to indicate current, voltage, frequency, power factor and KWH.				
vi)	LED type Indicating lamps for load on mains and load on set with 2A, SP MCB's for protection.				
vii)	Fuse/MCB for instruments.				
viii)	Battery charger, complete with transformer/ rectifier, digital type D.C. voltmeter and Ammeter of accuracy class 0.5. selector switch for trickle, off and boost.				
ix)	Main supply failure monitor				
x)	Supply failure timer.				
xi)	Restoration timer.				
xii)	Control unit with three impulse automatic engine start/ stop and failure to start lockout.				
xiii)	Impulse counter with locking and reset facility.				
xiv)	ON/ OFF/ Control circuit switch with LED type indicator with 2A,10 kA SP				

	MCB's for protection.				
xv)	Audio/Video annunciation for common fault	1.0	Set		
3.0	Supplying and Laying one No. XLPE aluminium conductor armoured power cable of 1.1 KV grade of following sizes in the existing open masonry duct/ cable tray etc. as required.				
(a)	3.50 x 185 Sq. mm	75.0	Mtr.		
4.0	Supplying and Laying one No. XLPE aluminium conductor armoured power cable of 1.1 KV grade of sizes 3.50 x 185 Sq. mm direct in ground i/c excavation, sand cushioning, protective covering and refilling the trench etc. as required.	30.0	Mtr.		
5.0	Supplying and Making end termination with brass compression gland and aluminium lugs for the following size of PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1.1 KV grade as required.				
(a)	3.50 x 185 Sq. mm	18.0	Nos.		
6.0	Earthing with Copper earth plate 600 mm x 600 mm x 3 mm thick including accessories & providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) as required.	2.0	Set		
7.0	Extra for using salt and charcoal for GI or copper plate earth electrode as required.	2.0	Set		
8.0	Providing and fixing 25mm x 5 mm Copper strip on surface or in recess for connections etc. as required.	20.0	Mtr.		
9.0	Providing and fixing 25mm x 5 mm Copper strip in 40 mm dia GI Pipe from earth electrode. as required.	20.0	Mtr.		
10.0	Providing and fixing 25mm x 5 mm GI strip on surface or in recess for connections etc. as required.	20.0	Set		
	Total				
	<u>Grand Total</u>				

<u>Technical Data</u>					
		<u>Generator Set Specifications</u>			
i.	Model	CS 380 D5 P or equivalent			
ii.	Prime Power Rating KVA	380			
iii.	Output Voltage and Frequency	415 Volts, 50Hz			
iv.	Power factor	0.8 (lag)			
v.	No. of Phases	3phase			
		<u>Engine specifications</u>			
i.	Make	Cummins, Caterpillar, Perkins			
ii.	Model	NTA 14 G3 or equivalent			
iii.	No. of Cylinders	6, in-line			
iv.	Aspiration	Turbocharged-Aftercooled			
v.	Bore x Stroke	140mm x 152mm			
vi.	Displacement	14ltrs.			
Vii.	Output-Prime	336KWm			
Viii.	Fuel Consumption @75% load with Radiator & Fan	About 58.2ltr/hrs			
ix.	Fuel Consumption @100% load with Radiator & Fan	About 76ltr/hrs			
X	Typical lube Oil consumption @ full load	0.092ltr/hrs			
Xi	Total wet weight (engine+raditor)	1620kg			
xii.	Length x Width x Height (engine)	1655 x 900 x 1313mm (Approx.)			
xiii.	Compression Ratio	17:01			
xiv.	Piston Speed	7.6 m/s			
xv.	Governer / Class	Electronic / A1			
xvi.	Lubricating Oil system capacity	38.6ltrs			
xvii.	Coolent capacity (engine+radiator)	76.8 ltrs.			
xviii.	Combustion air intake @100% load (+/- 5%)	223.7m ³ /min			
xix.	Fan air flow across raditor	623 m ³ /min			
xx.	Exhaust Temperature	527 °C +/-2%			
xxi.	Battery Capacity / Rating	180AH, 2 x 12V			

	<u>Alternator specifications</u>				
i.	Make	Stamford			
ii.	MCCB's, ACB's etc.	L&T, ABB, M.G			
iii.	Voltage Regulation	±1%			
iv.	Insulation	Class H			
v.	Standard Enclosure	IP 23			
vi.	Winding Pitch	2/3 Pitch			
vii.	Stator winding	Double layer lap			
viii.	Rotor	Dynamically balanced			
ix.	Wave form distortion	No load <1.8%, non distorting balanced linear load < 5%			

Conformance Standards

IS 4722, BS 5000, IS 1460, ISO 8528, BS 5514, ISO 3046

Rating definition

Prime Power (PRP):

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) in accordance with ISO 8528. Ten percent overload capability available in accordance with ISO 3046, DIN 6271 and 5514

Emergency Standby Power (PPP):

Applicable for supplying power to varying electrical load for the duration of power interruption of utility source. Emergency Standby Power (ESP) in accordance with ISO 8528. Fuel Stop Power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

NOTE:

- All above values may vary upto permissible limit.
- The Bidders may visit the site before submission of tender.
- Best ratings may only be selected.
- Jamia Hamdard reserve the right to cancel the tender if not found complete from any respect.