



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY

NOTICE INVITING TENDER

Phone: +91 431 257 7653

Email : skaruna@bheltry.co.in,

ajay@bheltry.co.in

Web : www.bhel.com

TWO PART BID

Tender to be submitted in two Parts

Enquiry
Number:

2631700014

Enquiry Date:

10.07.2017

Due date for submission of
quotation:

04.08.2017

You are requested to quote the Enquiry number date and due date in all your correspondence. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity
10	Diesel Generator Set – 250 KVA as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	1 No.

Important points to be taken care during submission of offer

1. Compliance Form No: TRY/ IND/ 07 to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
2. Delivery period required is 3 months from the date of P.O.
3. Commissioning and performance prove out shall be done at BHEL Trichy by the supplier
4. Time period required for commissioning and performance prove out shall be 3 week from the date of intimation by BHEL
5. EMD for this tender Rs.40,000/-
6. All updates, amendments, corrigenda, etc., (if any), for each tender will be posted only on the above websites from time to time, as and when required, until each tender is opened. There will be no publication of such updates, amendments, corrigenda, etc., through newspapers or any other media.

BHEL's General guidelines / instructions (refer MM/CE/GENL/001- EMD), compliance form and technical specification can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference.

Tenders should reach us before 14:00 hours on the due date
Tenders will be opened at 14:30 hours on the due date
Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

AJAY VASALKAR

Sr. Manager

MM / Capital Equipment

BHEL, Tiruchirappalli - 620 014

Sr. Manager / Capital Equipment / MM

PART – A**SECTION- 1: Qualifying Criteria**

The BIDDER has to compulsorily meet the Qualifying Criteria indicated in **Section 1** to get qualified. Otherwise the technical offer will not be considered.

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
1.1	The BIDDER / VENDOR (OEM) shall have a minimum FIVE Years of Continuous Experience in Design, Manufacture & Supply of “Diesel Generator set”. Vendor shall indicate the actual number of years of experience in the field.	
1.2	Only those vendors (OEMs) should quote, who have commissioned in the last 03 years (as on the original date of tender opening) at least one number of “ 250 kVA or higher rating Diesel Engine driven Electrical Power Generating set “ In India and the referred DG set is presently working satisfactorily for more than one year from the date of commissioning (as on the original date of tender opening). The name and contact addresses of the customers to whom the DG set were supplied to be furnished with details.	
1.3	Vendor has to submit at least ONE PERFORMANCE CERTIFICATE for satisfactory performance of 250 kVA or above rating Diesel Generator set as referred under clause 1.2 above, for a minimum period of one year from the date of commissioning (as on the original date of tender opening) from their customers in India, supplied and commissioned in the last 03 years. Performance certificate as Original Certificate or E-mail directly from the customer may be submitted. The original certificate may be returned after verification by BHEL, if required. For obtaining the Performance certificate, a suggestive format is provided at the end of Part A.	
1.4	BHEL reserves the right to verify the information provided by the Vendor for the referred Diesel Generator set at their referred customer's works. It shall be the responsibility of the vendor to facilitate the visit of BHEL's team at their referred customer works. The Travel, Board and Lodging expenses for BHEL Personnel shall be borne by BHEL. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected. BHEL reserves the right to accept or reject the OEMs based on the assessment of their technical and financial capability.	

SECTION - 2:

The BIDDER / VENDOR are requested to provide the following information:-

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
2.1	The BIDDER / VENDOR to furnish Reference List of Customers, with complete address, details of contact person, where Diesel Generator set has been supplied in the past.	
2.2	Specify details of Diesel Generator set supplied to other units of BHEL, if any (Year of commissioning with details etc.	
2.3	Details on SERVICE-AFTER-SALES Set-up in India including the Address of Agents / Service Centres in India.	
2.4	Any Additional data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

SECTION – 3:

The BIDDER to note:

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
3.1	The BIDDER / VENDOR shall submit the offer in TWO parts. 1. Technical Offer [with PART A & PART B] 2. Commercial Offer and Price bid.	
3.2	The Technical Offer shall contain complete details against all clauses of Technical Specifications given by BHEL.	
3.3	The Technical Offer shall be supported by copies of product Catalogues, Data Sheets and technical details of Bought- Out-Items.	
3.4	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation.	

Suggestive Format of Performance Certificate:

The Performance should be certified by the customer on **Customer's Letter Head** and submitted along with the offer.

PERFORMANCE CERTIFICATE

1.0	Diesel Generator set Supplied by : (Manufacturer's name)	
2.0	Make & Model number of the Diesel Generator set	
3.0	Month & Year of Commissioning	
4.0	Make of Diesel Engine	
5.0	Make of Alternator	
6.0	Performance of the Diesel Generator set (Please tick the appropriate option)	Satisfactory
		Not Satisfactory
7.0	Service after sales (Please tick the appropriate option)	Satisfactory
		Not Satisfactory
8.0	Other remarks (if any)	
Date:		Signature & Seal of the Authority Issuing the Performance Certificate

PART-B**TECHNICAL SPECIFICATION OF 250 KVA DG set, Quantity: 01 No.**

S.No.	BHEL Specification - Requirement	Vendor Confirmation	Deviations, if any
1	SCOPE OF SUPPLY: a. Design, Manufacture, Supply, Installation and Commissioning of 1 No. of 250 kVA, DG set developing sufficient BHP at 1500 rpm under NTP condition as per BS 5514 of CUMMINS/KIRLOSKAR/LEYLAND/MAHINDRA/GREAVES or reputed make (subject to BHEL acceptance) with standard accessories including acoustic enclosure including residential silencer (CPCB approved) and suitably coupled to an Alternator of Crompton Greaves/Stamford/Leroy Somer or reputed make (subject to BHEL acceptance) - brushless, self-excited, self-regulated 3 phase 250KVA/200KW at 1500 rpm, 0.8 lagging PF, 415 V, 50 Hz, 3 phase 4 wire with suitable AMF control panel. The alternator shall confirm to IS: 4722/BS: 2613 and should be suitable for operating in tropical conditions. The scope includes fuel tank, anti-vibration mounts, common base frame for the DG set, batteries with leads for starting, Control Panel, Standard accessories, First fill of lube oil. b. The DG Set shall be positioned inside the existing room (RCC structure) of size : LxWxH in Mtrs. and the Entry /Opening Size is WxH in Mtrs.		
2	SPECIFICATIONS: The following is the detailed description of the parts that shall be inclusive of standard accessories and attachments to be supplied. (i) Engine: The Engine side shall be fitted with the standard accessories including Electronic Governor (of Class A1), Battery Charging Alternator (as per description in (ii) and (iii)), Engine Safety Sensors (LLOP, HWT, Shut off, ESS), Air Cleaner, Lube Oil filter, Fuel Filter. First Time filling of Engine Lubrication oil will be in the scope of supplier. It should have both electric and battery start options. The BHP rating of the Diesel Engine coupled with the Alternator shall be around 300 HP and the detailed load calculation sheet with all the assumptions, shall be submitted with the technical offer for BHEL evaluation. The Technical Offer shall give complete details of the Diesel Engine giving operating procedures and servicing modalities, involving replacement parts & consumables. The DG set should be equipped with a suitable proven electronic governor that can be interfaced to an automatic synchronizer and load sharing circuit. It should also have the features of iso-synchronous		

	operation/steady state stability of at least $\pm 0.25\%$, speed drift with temperature $\pm 1\%$ max, droop range of 1 to 5 % regulation, ambient operating temperature of -40 to $+85$ deg. C, relative humidity upto 95 %. It shall also include water cooled turbo charged compact radiator with recovery bottle and pusher type fan, Dry type air cleaner, Coolant arrangement, holset coupling, charging system with internal and external battery chargers, Instrument panel with RH water temperature gauge, Fuel gauge, RPM indication, Service hour meter etc. It should be possible to connect the AVR to an auto-synchroniser. Piping between the fuel tank and the engine is in the scope of the vendor. Fuel pipes, overflow pipes, drain valve for fuel tank, vent connection for fuel tank, fill connection for fuel tank, inspection and cleaning hole for fuel tank, level gauge and level indicator for the fuel tank are to be provided. Fuel tank shall be fabricated from suitable size MS sheet, level indicator with all standard accessories, drain valve, air vent and outlet connection, inlet arrangement for direct filling. All surface finishes should be fungus proof and corrosion resistant. (ii) Alternator: Brushless type, Screen protected, revolving field, self-excited alternator conforming to IS/IEC 60034 – 1. 3 Phase reconnectable winding with 12 terminals brought out for connection with best in class efficiency is to be supplied. Required Features include Band voltage regulation of $\pm 1.5\%$ of rated voltage from no load to full load confirming to IS:4722/BS:2613, IP 23 compliant, with Automatic Voltage Regulation, Class H insulation. Double bearing rotor with dynamic balancing required. Waveform distortion (both at no load and balanced load), Total Harmonic Distortion to be within prescribed limits of the standard. Bearing Temperature sensors are to be provided at one per bearing. Winding Temperature sensors to be provided at the rate of two per phase. Compact design with sealed bearings and Impregnation of all wound components required. (iii) Battery: 2 x 12 V maintenance free DC Batteries (or as many numbers as deemed fit for the operation of the design in description in (i) and (ii)), (Exide/Amco/Amaron) in fully charged condition including battery charger of suitable AMF panel. The battery charger should be with DC Voltmeter and Ammeter, Selector switch for Auto/Manual & Float/boost. Power cable from AMF panel to Alternator will be in BHEL Scope. (iv) Acoustic Enclosure: The enclosure should be made up of modular, preformed acoustic panels of minimum 100 mm thick, having a composite multi density sound absorbing insulation covered with glass tissue and sandwiched between external premiered and painted external 16 SWG MS/CR sheets and internal galvanized perforated sheet of 0.8 mm. the enclosure panels should be fitted onto a sturdy MS/CR preformed channel framework with required gaskets, brackets and fixtures. The view glass shall be provided on a steel enclosure with openings for pipe connections and doors for easy access for maintenance and inspection. Suitable acoustic beading shall be provided for the doors. Arrangement		
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	for fresh air inlet and hot air outlet shall be provided. Sufficient fluorescent tube lamp lighting shall be provided inside the enclosure The maximum permissible sound pressure level should not exceed 75 dB at a distance of 1 meter from the enclosure surface. Emergency Trip push button outside the Acoustic Enclosure is to be provided. Bottom cable entry provision, Electrolytic aluminum bus bars with colour sleeves, MS base frame of suitable size for panel mounting are to be included in scope of supply. All panels should be removable type and should be able to dismantle and refit during maintenance cycle. The enclosures should be mounted on a specially prepared base frame. The enclosure should be painted with epoxy based primer and paint. Ventilation to be provided sufficiently to maintain the internal temperature +5°C to ambient temperature. (v) Control Panel: Main Control panel board. Consist of: a) Electrically operated Amps ACB with over load/E.F. Protection - 1 No. Make: GE, L&T, Siemens b) AC voltmeter & Ammeter - 1 No. each c) Selector switches - 2 Nos. (1 for voltmeter and 1 for ammeter) d) Frequency meter - 1 No. e) KW Meter- 1 No. f) CT operated energy meter - 1 No. g) Indicating lamps Protection features should include High Water Temperature, Low lube oil pressure, Over speed, low coolant oil level, air filter clog indicator, starting failure, generator overload, battery voltage low etc. MCB/Fuse for control circuit protection is to be provided. Suitable power cable (3.5 core) to be connected from alternator to ACB panel and change over switch along with cable lugs gland and gland plate with a distance of 10 meter length. (vi) Exhaust system with stack: Vendor to provide exhaust piping, insulation and hangers and support structure starting from engine to outside the DG room. Exhaust to be provided with a silencer. Thermal insulation with aluminum sheet cladding for exhaust piping upto the stack is in the vendor's scope of supply. Stack of required height as per pollution control norms should be provided and installed by the vendor. Emission norms as prescribed by the Pollution Control Board and Environment Protection rules is to be adhered and certified to. (vii) Documentation:		
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	Three sets of the following documents in English Language (in hard copy) and one set in soft copy should be supplied along with the machine: - Operating and Maintenance manual for the Diesel Engine - Operating and Maintenance manual for the Alternator - Operating and Maintenance manual for the AMF Panel - General arrangement plan of DG set - Piping Schematic Diagram - Chimney Drawing - Complete Master List of parts used in DG set shall be submitted by the vendor (viii) Applicable codes and standards: - Rating Definition as per ISO 3046/BS 5514 - IS 4722 - BS 5000 - IEC 34/1 - ISO 8528 - IS – 4889, 10000, 10002 - Pollution control board directives with regard to exhaust height - Fuel Conforming to IS 1460 - Fuel Consumption tolerance as per BS 5514 - Environmental Protection rules - Any other National/International standards/code applicable to DG set. (ix) Erection and Commissioning: BHEL will carry out the civil work for foundation if any. Vendor shall provide details of the foundation/civil work/other relevant details for this purpose immediately after placement of purchase order. Power/Air requirements will be made available at one point near the commissioning location for usage. Ratings of requirement to be clearly specified upon placement of order. Vendor can visit the site for clarification and assess the exact requirements. Supplier shall be responsible for carrying out erection, start up, testing and commissioning of the DG set. Required technical personnel and labor required for the same shall be arranged by the vendor. Tools required for the erection and commissioning shall be arranged by the vendor. Erection of the stack and thermal insulation of the exhaust system is also the responsibility of the vendor. All charges for Erection and Commissioning shall be furnished separately as part of the price bid. Scheduling of the Erection is to be intimated well in advance and approved by WRI/BHEL for execution.		
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	Pre Dispatch inspection include physical inspection of the and Run test of DG set at vendor's works, verification of original test certification for engine, alternator, acoustic enclosure and all other bought out items. After commissioning, the DG set should be run for eight continuous hours and operation of all protective devices to be demonstration to the satisfaction of the BHEL personnel. Damage during transit to any of the component/equipment will not be responsibility of the BHEL. (x) General: - Installation and Commissioning will be at WRI under Supplier's Engineer supervision. - Scope of supply includes mounting of DG set on channel iron base frame with AVM pads. - Manuals and Documentation including test/calibration certificates to be provided. - Necessary tools like Torque Wrench, Spanners, Keys, grease guns etc. for operation and maintenance of the DG set is part of scope of supply. List of tools to be submitted in the offer for approval. - Performance Warranty for 12 months and Guarantee of 24 months from the date of commissioning. - The DG set should work trouble free and efficiently under typical ambient conditions of temperature of 20 to 50 degrees Celcius and maximum relative humidity of 90 %.		
2	Spares: Itemized break up of mechanical and electrical spares in sufficient quantity as per recommendation of Vendor for two years of trouble free operation should be offered. The list should also necessarily include the following items: - Lube Oil Filter Element - Fuel Filter - Super Bypass filter element kit - Solenoid Valve - Corrosion inhibitor The rates are to be quoted separately for the spares and the spare list is to be complete for the working of the DG set.		