

Tender document for Supply & Commissioning of DG Sets

For

RAS OFFICERS' CLUB PROJECT

At

Plot No. 2, Institutional Area, Near Dainik Bhaskar Office,

Gopalpura Bypass, Jaipur

Date and Time of submission of Tender at

RAS Club Site Plot No-2, Industrial Area,

Near Dainik Bhaskar

: 4th March 2019 before 1.00 pm

Opening of Technical Bid

: 6th March 2019 12.00 pm onwards

**Opening of Financial Bids & Presentation
Jaipur)**

: 6th March 2019 1.15 pm onwards (At DLB,

Time of Completion of Work

: 3 to 6 Months

Tender for **Supply & Commissioning of DG Sets** of the proposed **RAS Officers' Institute (Club House) building** at Plot No. 2, Institutional Area, Near Dainik Bhaskar, Jaipur.

Following documents are enclosed with Supply & Commissioning of DG Sets Tender:

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|--|---------------------|
| 1. Project Detail | – Annexure 1 |
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Annexure –1

PROJECT DETAILS

RAJASTHAN PRASHASHNIK SEVA PARISHAD, a registered society having a land measuring around 3270 Sq.mt at Plot No.2, Institutional Area, near DAINIK BHASKAR is developing a **RAS OFFICERS' INSTITUTE (CLUB HOUSE)** building through **RAS Officers' Institute** (a registered society formed for the purpose of building and running this club house) who will act as the employer for the Project.

This **CLUB HOUSE** building comprising of 2 Basement floors and 6 over ground floors (with the total built up area of approx. 1,20,000 Sqft.) is supposed to house a number of facilities. It will be developed as a green complex with greenery around. The facilities include proper parking space at 2 basement and ground levels, coffee shop, indoor sports areas, outdoor sports areas, swimming pool, banquet hall, conference halls, guest rooms, restaurant, bar, roof top structures, Gym, Health Club etc.

GENERAL TERMS & CONDITIONS

1. Each tender should be sent in a double cover, inner cover should be sealed with tenderer's distinctive seal. The outer cover should bear the address of this office and super scribed with correct Enquiry No. and Due Date. Tender should be free from CORRECTION AND ERASURES. Corrections, if any must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount in figures and words, amount quoted in words shall prevail.
2. Technical cum Financial bid will be opened at 1:00 PM on Due Date. The Technical cum Financial bid should accompany copy of documents like authorized dealership certificate, earlier supply order details of similar equipment and their performance feedback from customers, company profile and present status, product catalogue of the models offered, technical specifications of the product, Financial Terms & Conditions and other relevant documents etc.
3. Price bid of technically accepted bidders only will be opened. No revision of prices will be entertained after Tenders are opened, unless mentioned in our enquiry / asked so by RASOI.
4. Manufacturer's name, Trade Mark or Patent No. if any, shall be specified in the Technical cum Financial Bid.
5. Please mention the relevant national / international standard code of the product quoted for in the Technical cum Financial bid.
6. The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reason whatsoever.
7. Late tenders (received after Due Date) will be rejected.
8. Price quoted shall be valid for 180 days from the date of opening.
9. SECURITY DEPOSIT: The supplier shall have to furnish Security Deposit (Cash/DD/Bank Guarantee from a Scheduled Bank) if so specified in the tender under Special Terms & Conditions.
10. PACKING AND MARKING: The supplier shall arrange for secure protective packing of the goods suitable for tropical conditions to avoid loss, damage, atmospheric action during handling and transit. The packing standards will comply with relevant national standard/carrier's conditions of packing or established practice. If any damage is sustained and the carrier or underwriter attributes it to improper packing, the seller shall be liable to replace the material or reimburse the value of the loss

notwithstanding any transit insurance arranged by him or not. The following marking shall be made on each package in black bold letters. NAME & ADDRESS OF CONSIGNEE, DIMENSION OF PACKAGE, WEIGHT DETAILS: GROSS, TARE & NETT. These markings should be stenciled or written in bold letters on the package. Should the package be small, suitable cards/metal tags giving these details may be tagged or nailed.

11. INSPECTION: Final inspection will be carried out at the destination/site/Purchaser's works by the authorized inspecting Officer, if so specified in the tender under Special Terms & Conditions. Whenever preliminary or stage inspection is to be carried out at supplier's works the same is subject to final acceptance after receipt of the material at the destination/Purchaser's works and the decision of the purchaser shall be final. The propriety of goods shall not pass until final acceptance by the purchaser.
12. REJECTION: The seller shall intimate the purchaser in writing within 15 days (after being intimated about rejection of goods) regarding disposal action of the rejected material. If no advice is received within this time the purchaser shall be at liberty to return the material at the cost and risk of the seller after receiving the cost if any paid by the Purchaser including inward freight and other incidental charges. The Purchaser will not be responsible for the rejected material thereafter and no claim will rest on him.
13. DELIVERY: Purchaser shall not be liable to receive and pay for any supply made after delivery date stipulated in the order unless the delivery date is formally extended by the purchaser. Wherever the terms of delivery of the order is other than F.O.R. destination, delivery date will be reckoned as the date of dispatch or the date of readiness after inspection of the material where the Purchaser has agreed for inspection or collection.
14. TEST CERTIFICATE: The seller shall carry out such tests as prescribed by the purchaser / as required in accordance to the relevant national or international standards, in his works and/or and other places as stipulated in the order. Necessary test certificate shall be submitted with delivery of materials. The seller shall also provide at no extra cost the required number of catalogues, drawing and other manuals related to materials under this order.
15. TERMS OF PAYMENT: Payment will normally be made within a month of receipt of material in good condition at destination. Any other payment terms have to be mutually agreed. The seller shall send dispatch documents, invoice etc. in such quantum and a manner as provided in the order. (I) It is expressly understood that in the event of rejection of the materials for which payment has been made against document's through bank the Purchaser reserves the right to claim from the seller the amount paid and the incidental charged incurred in the same manner i.e. negotiating return dispatch documents, through Bank and the Seller shall honor such claim and

retire the documents from the Bank. (ii) Bank charges for any payment claimed through Bank shall be borne by the seller and the seller shall also agree to bear any demurrage or other charges arising out of any delay in retirements or documents from Bank due to delayed, insufficient incorrect information furnished. (iii) The seller shall also ensure that the Carriers do not delay dispatch of the consignment once the carrier's receipt is obtained.

16. GUARANTEE / WARRANTY: The materials shall be warranted for design material and workmanship and also for performance warranty as specially stipulated by the purchaser in the order in its annexure.
17. INSURANCE: Wherever specifically agreed to and directed, the supplier will insure the goods for all transit risks up to delivery of the goods at the final destination. In all other cases supplier must furnish particulars of dispatch for each consignment immediately after the dispatch of goods. Failure to do this will make the supplier responsible for making good any loss, which otherwise might have been recovered from underwriters.
18. DELIVERY FAILURE, TERMINATION & LIQUIDATED DAMAGE: The parties hereto agree that the timely dispatch/delivery and completion of the other schedules as stipulated in order/contract shall be the essence of the Order/Contract. If the seller/contractor fails to complete the dispatch/ delivery and other schedules within the time period stipulated in the order/contract, or within any extension of time granted by the purchaser, it shall be lawful for the purchaser to recover damages for the breach of order/contract without prejudice to any other rights and/or remedies provided for, in order/contract and hereunder. The purchaser reserves the right to recover from the Seller/Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half percent {0.5%} of the total contract price per week part thereof, subject to a maximum of ten percent {10%} of the total contract price excluding elements of taxes, duties and freight, if seller/contractor has failed to deliver any part of the goods within the period stipulated in the Order/Contract. The purchaser reserves the right to purchase from elsewhere on account of and at the risk and cost of the seller /contractor without notice to the seller /contractor of goods not so delivered or their equivalent , without canceling the order/contract in respect of the goods not yet due for delivery. The purchaser reserves the right to cancel the order/contract or a portion thereof for the goods not so delivered at the risk and cost of the seller/contractor and the seller/contractor shall be liable to the purchaser for any excess costs thereof.
19. RISK PURCHASE : In the event the supplier has failed to deliver or dispatch whole of the goods or any part within the time stipulated or if the same were not available in his stock, the best and the nearest available substitute thereof may be purchased/arranged by purchaser from elsewhere at the risk and the cost of the

seller. The purchaser at his option will be entitled to terminate the contract and seller shall be liable for any loss which the purchaser may sustain by reason of such risk purchases in addition to penalty at the rate mentioned in clause 18 above.

20. PREFERENTIAL DELIVERY : It should be noted that if an Order is placed on a higher tenderer as a result of this invitation to tender, in preference to the lowest acceptable offer in consideration of the earlier delivery, the seller will be liable to pay the purchaser the difference between the contract rate and that of the lowest acceptable tender on the basis of final price F.O.R. destination including all elements of freight, sales tax, duties and other incidentals in case of failure to complete supplies in terms of such contract within the date of delivery specified in the tender and contract.
21. Purchaser reserves its right to the Public Enterprises price preference facilities as admissible under the Govt. of India policy from time to time.
22. This order or any part thereof shall not be sub-contracted without the purchaser's consent.
23. METRIC SYSTEM: Supplier is requested to indicate metric system measurements in all documents.
24. INDEMNITY: The Seller shall indemnify the Purchaser against any claim due to any breach of patent, negligence, defective material or injury to seller or his agent.
25. In the event of any reduction in the price, due to change of Govt. duties after award to the work and before delivery commencement, purchaser is entitled to such reduction and may negotiate fresh price at its discretion.
26. GENERAL: The purchaser reserves the right to split up the tender and place orders for individual item on different suppliers and also increase or decrease the quantity. Material will be order as per the requirement of site.
27. DISPUTES & ARBITRATION: All cases of disputes will be resolved according to the Indian Arbitration Act 1940.
28. FORCE MAJEUR: Acts of God, Acts of Government, War, Sabotage, Riots, Civil commotion, Police action, Revolution, Natural Calamities, Epidemic and other similar causes over which the supplier has no control, will amount to Force Majeure. Delay attributable to Force Majeure will be condoned; however the onus of establishing the reason of delay lies with the Supplier.
29. In case of any contradictions between General and special terms and conditions, the provisions in Special Terms & Conditions will prevail.

30. DG Set Manufacturer has to provide minimum 2 years warranty/Guaranty on supply of all DG Set.
31. Quoted rate will be including placing of DG Set at their respective place (in the building) and FOR at site.
32. In case of any accident/mishap in future due to sub stander machinery or sub stander installation, the manufactures shall be responsible for any damage/compensation.

Other Information:

- 1) The bid document can be downloaded from the RASO'I website www.rasassociation.com, free of cost.
- 2) Bidders shall have to submit their offers in two separate envelopes.
- 3) The sealed cover within the main cover should contain:
 - (a) Qualification, Credentials, Security Deposit clearly marked "**Packet A**".
 - (b) Financial bid clearly marked "**Packet B**".

The "Packet A "should contain -

- a) Details of the Bidder, Contact Address, email, phone, Fax.
- b) Documents in support of the eligibility criteria for this bid.
- c) Bidders to provide indemnity bond stating that they are not blacklisted by any Govt. Authority/Agency.
- d) SD by way of Demand Draft drawn in favor of "**RAJASTHAN PRASHASANIK SEVA PARISHAD**" payable at **JAIPUR** for an amount of **Rs. 50000 /-**.
- e) Copies of PAN Card, GST Registration, PF/ESI Registration, etc.
- f) Bids not supported with SD shall be summarily rejected.

The "Packet B "should contain -

- Only the financial bids of bidders eligible as mentioned above will be opened. Financial bids of the bidders failing to eligibility criteria will not be opened.
- The rates shall be written properly both in figures and the words, in case of any discrepancy will consider the lowest rate as the final (as per annexure 7).

Last Date for Submission of the Bid: 4th March, 2019 before 1.00 pm hours at RAS Club Site Plot No-2, Industrial Area, Near Dainik Bhaskar. Technical Bids will be opened on 6th March, 2019 at 12.00 pm & Financial Bid Opening & Presentation will in presence of Construction Committee of RASO'I on 6th March, 2019 at 1.15 pm onwards at the address given below:

**DLB,
22 Godown, Civil lines
Jaipur**

RASO'I reserves the right to cancel any or all the offers or the bidding process without assigning any reason, whatsoever.

SPECIAL TERMS & CONDITIONS

1	Project Multi-storied Club House – Near Dainik Bhaskar office, Jaipur (2 Basement + Ground + 5 Floors + Structures on Terrace) Total Gross Area : 1,20,000 Sqft (approx.)
2	Scope of work – Supply of DG Sets as per the BOQ Enclosed
3	Type of Contract – Supply and Commissioning Contract
4	Qualification Requirements: Bidder should have supplied DG Sets for similar or higher rating as given in this tender in last 02 years as on 31/01/19. (Bidder shall submit the Purchase Order copy along with proof for completion of supply)
5	Tender should be submitted in two parts (1) Technical bid comprising product catalogue, copy of relevant Indian Standards and Commercial Terms and conditions as enclosed. And (2) Price bid in prescribed price format in a separate sealed envelope. (Split up of Basic rate, Excise Duty, Sales tax / VAT/ GST must be furnished in the price bid)
6	Pre-dispatch inspection will be done by RASOI/PMC/Consultant. For inspection, Bidder shall inform 05 days in advance within the delivery period.
7	Payment Terms: 15% Advance and 85% of receipt and acceptance of material at destination.
8	Bidder must confirm whether Excise Invoice shall be given or not. In case bidder confirms that excise invoice shall be given, then the evaluation of bid shall be on the basis landed cost to RASOI excluding Excise Duty.
9	In case bidder fails to supply the material as per delivery schedule of this tender, LD shall be levied as per clause no.18 of GTC of this tender specification.
10	RASOI reserves the right to reject or accept the tender without assigning any reasons whatsoever.
11	Octroi at destination, if applicable, will be paid by RASOI on submission of original Octroi receipt.
12	Quoted rate will be including placing of DG Set at their respective place (in the building) and FOR at site.

The documents including annexure have been read by us and fully understood by us.

SIGNATURE & SEAL OF TENDERER

APPROVED MAKES OF DG Sets

1. MAHINDRA

2. JAKSON–KOEL GREEN

3. SUDHIR POWER LIMITED

4. TMTL

5. C&H

6. CATERPILLER (CAT)

7. GREAVES POWER

TECHNICAL SPECIFICATIONS

The Technical Specifications cum detailed job description specified for 500 KVA DG Set In case the equipment quoted exceeds/differ the Tender Technical Specifications, the same should be clearly defined by the bidder.

1. GENERAL

This specification covers the supply and commissioning of **2 X 500 KVA** diesel generating system covering the diesel engine, alternator, engine control panel, associated accessories, cooling system, ventilation system, fuel and exhaust system, acoustic enclosure and switchgear etc.

The Installation work will be done by the project electrical contractor team under the presence & supervision of the supplier's technical team.

2. SCOPE OF WORK:

The scope of work shall supply and commissioning of the following items. The supplier shall study the requirements stipulated in the specification and also to suit the site conditions and offer a complete system with guaranteed performance under operating conditions specified.

- i) 415V, 3-phase + Neutral, 500 KVA 1500 RPM, DG set with accessories as specified.
- ii) Set mounted microprocessor based engine control panel
- iii) Radiator cooling system
- iv) Exhaust piping including supports as per CPCB norms
- v) Thermal insulation for exhaust piping
- vi) Exhaust stacks with steel supporting system for these sets
- vii) Fuel piping
- viii) Integral Acoustic enclosure
- ix) Switchgear panel as specified
- x) Obtaining approval of the installation from pollution control board and all other statutory authorities
- xi) Preparation of related schematic and GA drawings for DG installation exhausts piping, fuel piping, ventilation system, acoustic enclosure, etc.

Any related work covering supply of installation materials, consumables, cables etc. whether specified or not, to render the system fully functional and conforming to the best engineering standards. This shall include battery charging.

3. ELECTRICAL SUPPLY SPECIFICATIONS: Nominal

voltage: 415V 10%

No. of Phases: 3 + Neutral

Frequency: 50 Hz + 3%

Control supply: 24V, 2-wire

DC

4. DIESEL ENGINE & ACCESSORIES

4.1 ENGINE

The diesel engines shall be of approved make, four stroke, 6 Cylinder, MEUI Fuel injection technology water cooled, radiator type, turbo charged, operating at a nominal speed of 1500 R.P.M and capable of developing requisite BHP not less than 605.

The engine and the governing system shall be suitable for AMF duty power generating application through microprocessor-based controller and shall conform to BS: 5514 / IS 3046 / BS 649 / IS 10002.

The unit shall be suitable for operation on high speed diesel oil available in Indian Market.

The engine shall be electric start and shall be suitable for battery assisted manual / auto starting.

The governing system of the engine shall be electronic type and suitable to control frequency variation within $\pm 3\%$ whenever a load is switched in or thrown off. The engine fitments shall include but not be limited to the following.

- i) Flexible coupling and flywheel with guard
- ii) Dry type air filter
- iii) Cooling radiator
- iv) Fuel pump
- v) Electronic governor
- vi) Dual fuel filter with on line filter changing provision
- vii) Lube oil pump, oil cooler and filter
- viii) Turbo charger
- ix) 24V DC starter & battery charging alternator

Electrical parameters:

- i) Lube oil pressure indicator and temperature gauge
- ii) Tacho meter for speed indication with hour meter
- iii) Battery charging Ammeter
- iv) Starting switch with key
- v) Over speed stop switch with contacts
- vi) Low lube oil pressure switch
- vii) High water temperature alarm & trip
- viii) Stainless steel flexible for engine exhaust
- ix) Control cables from Engine to AMF screened cables

The engine speed shall be regulated through an electronic governing system which shall also provide the over speed protection. The governor shall ensure that the speed of the set is regulated within 1% of the nominal speed under normal operating conditions.

The DG set shall be capable of handling step load up to 80% of the capacity without dropping other loads due to voltage dips. Further the engine shall be capable of taking full load within 10 seconds of starting. All moving parts of the engine and other associated equipment shall be provided with guards to prevent accidental contact. The guard shall be designed to facilitate easy removal and reinstallation.

The engine supplied with first filling of oil of required quantity as recommended by the manufacturers.

4.2 ACCESSORIES

The following accessories shall be supplied with the DG set.

- i) Common base frame for the engine and alternator
- ii) Antivibration mounts of suitable capacity
- iii) Residential Silencer
- iv) Protective guards for all rotating parts
- v) Electric driven lube oil priming pump complete with hosepipes and couplers
- vi) Diesel tank of 900 Ltrs. Capacity fabricated out of 3mm thick sheet steel including first filling of diesel. The tank shall be further complete with overflow pipe, drain pipe, fuel level indicator, valves, and manhole with cover, low level contact & alarm.

4.2.1 BATTERIES

The batteries shall be of heavy duty, high performance lead acid type. Each battery shall be rated 12V, 150 AH.

Battery shall be suitable for three successive starting attempts each of 10 seconds duration with a gap of 5 seconds between successive starts.

The battery shall be supplied complete with electrolyte and accessories. The accessories shall include battery stand, battery leads with terminal ends acrylic top cover and inter battery connectors.

Each battery is provided with a charger to charge the batteries when the set is not running. The charger shall get disconnected while the generator set is running.

4.2.2 CONTROL PANEL

Each set shall be supplied with an engine mounted Microprocessor based control panel. The control panel shall display all the engine, alternator & battery parameters. If possible it shall not only display faults but also keep a record of faults. An emergency stop push button will be provided to stop the DG

during emergency. For Engine faults, the set will be stopped in emergency mode & for electrical faults it shall be stopped with a time delay for cooling down.

An audible alarm shall be provided in the main panel to announce tripping of DG's.

4.2.3 ALARMS

The following alarms shall be provided in the DG control Panel to indicate & protect against abnormal operations.

Condition	Status	Function
Low Oil Pressure	2 stage Alarm	Engine Stop
High Water Temperature	2 stage Alarm	Engine Sop
Over Speed	Alarm	Engine Stop
Low Fuel Level	Day tank Alarm	
High Fuel Level	Day tank Alarm	
Earth fault on Alternator	Alarm	Engine Stop
Fail to start	Alarm	
Battery charger fault	Alarm	

5. ALTERNATOR

1500 RPM, 415V, 3-Phase, 500 KVA, star connected, 50 Hz, 0.8 P.F, horizontal foot mounted, double bearing, self excited, self-regulated, brushless, screen protected drip proof (SDPD), continuous duty alternator with class "H" insulation in IP-23 enclosure incorporating the following.

- i) Voltage Regulation $\pm 1.0\%$ of rated voltage from no load to full load.
- ii) Self excited and self regulated.
- iii) Permissible Overload: 10% for one hour in 12 hours of duration.
- iv) Separately mounted adapter box suitable for cable termination of required size armoured Aluminum FRLS XLPE cable between alternator terminals and adapter box (2 runs of 400 sq. mm cable per phase).

5.1 THE ALTERNATOR SHALL FURTHER MEET THE FOLLOWING SPECIFICATIONS

The alternator shall conform to IS 4722 / IEC 34 as amended up to date. The alternator shall be suitable for 20% over speed for two minutes.

The alternator shall be capable of carrying 50% overload for a duration of one minute. The alternator shall be capable of carrying 10% overloading for one hour in any period of 12 hrs running.

The alternator terminal voltage for any load variation should be maintained within + 5%. The field coil terminals shall be wired to terminal box for external speed control.

Both ends of each phase winding shall be brought to the terminal box.

The alternator shall withstand a 3-phase short circuit at the terminals for a period of 3 seconds. The total harmonic distortion shall not exceed 3% and the design shall permit up to 30% unbalance between phases while in operation.

6. PERFORMANCE

With the integral acoustic enclosure, the sound pressure levels when measured at a distance of 1mtr outside the DG enclosure louvers shall be not more than 75 dB (A) under free field conditions.

7. DIMENSIONS

The overall dimensions of the enclosure shall be such as to provide free movement all round the DG set inside the enclosure. Two sliding doors of adequate size shall be provided on either side of the DG set to facilitate easy inspection and carry out maintenance works.

8. PIPING & ACCESSORIES

The piping shall be of Class "B" M.S pipe

All accessories such as strainer, isolating valves, non-return valves etc. shall be supplied as required based on approved piping layout drawings.

The piping schematic shall be submitted with the bid. Which should include supply, over flow return from engine & drain pipes.

The piping shall be painted with one coat of primer and two coats of finishing paint of approved color.

One number manual gear pump for filling the day tank shall be supplied per DG.

9. INSTALLATION

The bidder shall undertake the installation work at site. The general scope of installation work as following.

DIESEL GENERATOR SET

The assembled Diesel Generator set shall be installed in the container on anti-vibration mounts. The unit shall be visually inspected for any transit damage.

The contractor shall arrange for the inspection of the set by the diesel engine manufacturer's authorized representative and obtain his approval before rolling the set. The fuel oil day tank shall be installed over the drip

Tray the batteries shall be fully charged, installed and connected. The battery charger shall be heavy duty.

FUEL PIPING

The fuel piping shall include supply and installation of Class "B" MS pipes of adequate size with necessary valves and accessories required for the supply & return lines from day tank to the engines.

The pipes shall be painted with primer over which 2 coats approved colour paint shall be applied.

The joints in the line shall be properly sealed to avoid any leakage of fuel.

EXHAUST PIPING

The exhaust piping shall be fabricated from MS pipes.

The exhaust piping and the silencers shall be insulated using 50mm thick mineral wool inside the container & up to the exhaust stack. The insulation shall be cladded with 24G aluminum sheet.

The exhaust pipe shall be supported using spring suspension supports.

The shipping sections of the stack shall be welded at site and erected over the MS frame work. The entire length including the flanges, bolts and washers shall be aluminized

Inside and outside to inhibit corrosion. A weather cowl shall be provided on top.

All tools and tackles used for the erection shall have valid safety certification.

10 TESTING:

AT MANUFACTURER'S WORKS

The routine tests and full load test on Engine, Alternator shall be carried out at Manufacturer's work in accordance with applicable Indian standards.

TESTING AT 'OEA's WORKS

Following tests shall be conducted at the assembler's work in the presence of client's representatives.

Full load testing for 8 hours with load bank.

Overload testing at 10% overload for one hour immediately after the full load test.

Operation of protective devices.

SITE TESTING

Following tests shall be conducted at site in the presence of the client's representative before energisation. The vendor shall provide all testing equipment, labour and consumables required for the testing.

Insulation resistance test on alternator, control panel and cabling.

Checking the AMF operation both on auto and manual mode through PLC and synchronization.

Checking the engine safeties for satisfactory operation.

Checking vibration levels.

Testing of individual protective devices on engine and alternator and ensuring that the wiring is carried out properly.

Full load running for 8 hours continuously. All the readings shall be logged to evaluate the fuel consumption, lube oil pressure, water & oil temperature vis-à-vis the electrical load.

One hour overload testing at 110% load shall be carried out at the end of the full load trial. Any deviation from the guaranteed parameters shall be made good and these performance parameters should be measured once again till the required results are achieved.

The DG set shall be deemed to be commissioned after satisfactory performance of all associated equipment.

BOQ

RAS CLUB, JAIPUR						
RASO'I CLUB BUILDING PROJECT DG SET BOQ						
S.No.	Description	Unit	Qty	Make	Rate	Amount
					(in Rs.)	(in Rs.)
1	The supply and commissioning of 500 KVA diesel generating system covering the diesel engine, alternator, engine control panel, associated accessories, cooling system, ventilation system, fuel and exhaust system, acoustic enclosure and switchgear. Including all above Technical Specification (Except Clause No-10) as per mention in Annexure-6.	Nos.	2	MAHINDRA/ JAKSON-KOEL GREEN/SUDHIR POWER LIMITED/TMTL/ CSH/CATERPILL ER(CAT)/GREAV ES POWER		
2	Tests shall be conducted at site as specified in clause-10 of Technical Specification in Annexure-6	Each	RO	-		