

**NATIONAL CENTRE FOR BIOLOGICAL SCIENCES**



**Supply, Installation, Testing and Commissioning of  
750kVA/600kW silent Diesel Generating set at NCBS  
Campus, GKVK Bangalore**

*TENDER DOCUMENTS*  
**'PRICE BID'**

*SCIENTIFIC ENGINEERING & MAINTENANCE DIVISION*  
**2017**

**Tender Notice No: NCBS/Electrical/E-in-C/TR-140/2017**

NATIONAL CENTRE FOR BIOLOGICAL SCIENCES  
Tata Institute of Fundamental Research  
GKVK Campus, Bellary Road, Bangalore - 560 065.  
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**Tender Notice Number: NCBS/Electrical/E-in-C/Tr- 140/2017**

1. NAME OF THE WORK : Supply, Installation, Testing and Commissioning of 750kVA/600kW Silent Diesel Generating set.
2. ESTIMATE VALUE PUT TO TENDER : Rs.76.83 Lakhs
3. EARNEST MONEY DEPOSIT : Rs. 1,53,660.00
4. COST OF TENDER DOCUMENT : Rs. 1000/-
5. SALE PERIOD : 26/12/2017 to 05/01/2018
6. TIME & DUE DATE OF RECEIPT : Up to 14:00 Hrs On: 12/01/2018
7. TIME & DATE OF OPENING : After 15:00 Hrs On: 12/01/2018

SOLD TO : \_\_\_\_\_ RECEIPT NO: \_\_\_\_\_ DATE: \_\_\_\_\_

FOR A SUM OF Rs. \_\_\_\_\_ TOWARDS THE COST OF TENDER DOCUMENT.

SIGNATURE OF ISSUING OFFICER:

DESIGNATION:

**Important Note: All bidders are requested to attend the Pre bid meeting on 10/01/2018 at 11:30 Hrs. in the office of the Head-SE& M, NCBS.**

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750kVA/600kW Silent Diesel Generating set.

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## **Annexure 'A' – Notice Inviting Tender**

**(NIT No: NCBS/ Electrical/E-in-C/TR-140/2017**

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1. Sealed tenders are invited (in 2 Part system) by the Head (Scientific Engineering Services & Maintenance) at the above office from similar experienced Contractors for Supply, Installation, Testing and Commissioning of 750kVA/600kW Silent Diesel generating set.

### **Eligibility Criteria:**

- i) Experience of having successfully completed similar type of work of Supply and Installation of Diesel Generating sets nature works during the last 7 years ending last day of the month previous to the one in which applications are invited. The works completed up to previous day of last date of submission of tenders shall also be considered.
  - a) **Three similar completed works**, costing not less than the amount equal to Rs.30.73 Lakhs (40% of Estimated cost),  
or
  - b) **Two similar completed works**, costing not less than the amount equal to Rs.46.09 Lakhs (60% of Estimated Cost),  
or
  - c) **One similar completed work** of aggregate cost not less than the amount equal to Rs.61.46 Lakhs (80% of Estimated cost) of the estimated cost.

and

- (ii) One Completed work of any nature (either part of (i) or a separate one) costing not less than the amount equal to Rs.30.73 Lakhs of the estimated cost put to tender with some Central/State Government Organization/Central Autonomous Body/Central Public Sector undertaking/State public sector undertaking/City development authority/Municipal corporation of city formed under any Act by Central/State government and published in central/state gazette..

(iii) Bidders/contractor must furnish documentary proof for the above along with the following mandatory information while making request for tender documents.

a. Company's profile, Local Office status, Bankers, Manpower and Experience.

b. Valid registration certificate

c. Goods Service tax registration certificates

d. **Current financial solvency certificate:** Solvency certificate should be of the amount equal to 40% of the estimated cost (i.e Rs. 30.73 lakhs)

e. **Annual turnover:** Average annual financial turn over should be at least 100% of the estimated cost (i.e Rs. 76.83 Lakhs) during the immediate last 3 consecutive financial year.

f. **Work completion Certificates:** Work completion certificates as per sr.nos. i (a or b or c) & ii should be submitted.

g. **Performance certificates:** Minimum two performance certificate from existing clients should be attached. Performance certificate should be of as per minimum eligibility criteria. Evaluation of the performance of contractors shall be done based on available documents along with technical bids. If required, the works executed by the bidders may be got inspected by the NIT approving authority.

i. Latest income tax clearance certificate

## **2. Evaluation Criteria: - As per enclosed Appendix – II**

If any tenderer withdraws his tender after the price bid is opened within the validity - period or makes any modifications in the terms and conditions of the tender which are not acceptable to the Department, then the NCBS shall without prejudice to any / or other rights or remedy be at liberty to forfeit 50% (Fifty Percent) of the earnest money absolutely.

**3. Completion period:** The time allowed for carrying out the work shall be 3 Months from the date of work order.

**4. Earnest Money Deposit (E.M.D.)** of Rs. 1,53,660.00 in the form of Department's receipt / Demand Draft / Pay Order / Banker's cheque / Deposit at call receipt / Fixed Deposit Receipt (FDR), issued by a Scheduled Bank, drawn in favour of "National Centre for Biological Sciences" Bangalore.

**NOTE:** EMD in the form of Cheques will not be accepted.

#### **4.1 Security Deposit & Performance Guarantee:**

##### **4.2.1: Performance Guarantee:**

The successful tenderer shall deposit an amount equal to 5% of the tendered and accepted value of the work (without limit) as Performance Guarantee within 15 days from the date of award of contract in one of the following forms;

- a) Government securities
- b) Fixed Deposit Receipt (FDR) of a Scheduled Bank.
- c) An irrevocable bank guarantee bond of any scheduled bank or the State Bank of India in the prescribed form given in Annexure.

##### **4.2.2: Security Deposit:**

A sum @ 2.5% of the gross amount of the bill shall be deducted from each running bill as well as final bill of the contractor. Such deductions shall be made unless the contractor has deposited the amount of security at the rate mentioned in cash or Government securities or Fixed Deposit Receipts.

This is addition to the performance guarantee that the contractor is required to deposit as para 4.2.1.

Security Deposit can be released against bank guarantee issued by a scheduled bank on its accumulation to a minimum amount of Rs. 5 Lakhs subject to the condition that amount of any bank guarantee except last one, shall not be less than Rs. 5 lakhs.

The Bank Guarantee submitted against Security Deposit shall initially be valid up to the stipulated date of completion of the work plus maintenance period as defined under clause 17 of GCC which shall be extended further time to time depending upon extension of contract granted under provisions of clause 2 and clause 5.

Security Deposit will be released only after the completion of the defects liability period of 24 months after the date of completion of the work.

**5. Acceptance of Tender:** The acceptance of the tender will rest with the Centre Director, NCBS who does not bind himself to accept the lowest or any other tender. No reasons will be furnished for the acceptance or rejection of any tender.

**6. Condition for tender submission:**

The tenderer shall give a list of officials both Gazetted and non-gazetted employees in NCBS, who are related to him. The contractor shall not be permitted to tender for works in the Department (responsible for award and execution of contracts) in which his near relative is posted as equivalent to Accounts Officer or as an officer in the capacity of grades Scientific Officer / "C" and above. He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relative to any gazetted officer in the Department of Atomic Energy. Any breach of this condition by the contractor would render him liable to be barred from tendering in this Department.

No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of two years after his retirement from Government Services, without the previous permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the tender or engagement in the contractor's service.

**7. Site visit by the tenderer before tendering:** Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the location of DG set to be installed. Nature of the site, the means of access to the site, and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed.

- 8. Tenderer's responsibilities:** The tenderer shall be responsible for arranging and maintaining at his own cost all materials, tools & plants and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a tenderer implies that he has read this notice & all other contract documents, and has made himself aware of the scope & specifications of the work to be done and local conditions and factors having a bearing on the execution of the work.
- 9. Tender documents & signing of contract:** The Notice Inviting Tender shall form a part of the contract document. The successful tenderer / contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of : The Notice Inviting Tender, all the documents including all conditions, specifications and drawings, if any, forms the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
- 10. Canvassing, either** directly or indirectly, in connection with the tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
11. Any tender which does not fulfill any of the prescribed conditions will be liable for rejection.
12. NCBS reserve the right to alter the scope/ or reduce quantum of work before issue of work order and the **Tenderer** shall not have any claim what so ever on this account.
13. Rates quoted by the Contractor 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. However, if any discrepancy is found, the rates which correspond with the amount worked out by the Contractor shall be taken as correct.
14. If the amount of an item is not worked out by the Contractor or if it does not correspond with the rate written either in figures or words, then the rate quoted by the Contractor in words shall be taken as correct.
15. Where the rates quoted by the Contractor in figures and in words tally but the amount is not worked out correctly the rate quoted by the Contractor will be taken as correct and not the amount.
16. In case rates are quoted only in words or only in figures, then the rate quoted will be considered and amount will be worked out accordingly.



17. In the event no rate has been quoted for any item / items, leaving space both in figure(s), word(s) and amount blank, it will be presumed that the contractor has included the cost of this / these item(s) in other items and rate for such item(s) will be considered as zero and will be required to be executed accordingly.

Note:

Issue of tender documents on the basis of the documentary eligibility alone will not make a tenderer eligible for participating in the bidding. The documents furnished by the tenderers will be subjected to verification subsequently by department. If found not meeting the requirement, such offers will be rejected.

**NIT NO: NCBS/Electrical/E-in-C/ TR-140/2017**

**PRICE BID**



### **SCHEDULE OF WORK ABSTRACT (for Price Bid)**

**Name of the work:** Supply, Installation, Testing and Commissioning of 750kVA/600kW Silent Diesel Generating set.

Sub Head A	Equipments	Rs.
Subhead B	Cabling	Rs.
Sub Head C	Earthing	Rs.
Sub Head D	Annual Maintenance Contract	Rs.



**Part -II (For Price Bid)**

**Name of the work :** Supply, Installation, Testing and Commissioning of 'Silent Type' Diesel Generating set along with having Prime Power Rating of 750kVA.

**Schedule of Quantity**

Sl.No	Description of Work	Unit	Qty	Rate	Amount
1	<b>SUB HEAD 'A' (Equipments)</b>				
<b>i</b>	The offer price shall be an all inclusive price that shall include all costs for delivery, supply & Installation, testing and commissioning of 'Silent type' Diesel Generating set having Prime power rating of 750 KVA, 415 Volts at 1500 RPM, 0.8 Lagging power factor at 415 V suitable for 50 Hz, 3 Phase system and for 0.85 load factor and consisting of the followings:				
<b>(a)</b>	<b>Diesel Engine offered shall be as per specification and with following accessories:</b>				
	Diesel Engine 4 stroke Radiator based water cooled, electric start, of suitable BHP at 1500 RPM suitable for above output with alternator at 40 degree C, 50% RH & at 1000 meter MSL and conforming to BS 5514, BS 649, IS 10000, capable of taking 10% over loading for one hour after 12 hours of continuous operation. The engine will be fitted complete with all the required accessories.	<b>Sets</b>	1		
<b>(b)</b>	<b>Engine mounted Instrument Panel fitted with and having digital display for following:</b>				
	(i) Start- Stop switch with key				
	(ii) Water Temperature indication				
	(iii) Lubrication oil pressure indication				
	(iv) Lubrication oil temperature indication				
	(v) Battery charging indication				
	(vi) RPM Indication				
	(vii) Over speed indication				
	(viii) Low lub. Oil trip indication.				

	(ix) Engine Hours indication
(c)	The engine shall be having Electronic governor and suitable for AMF operating with Auto synchronising, Load sharing, Load bearing, Load dependant starting etc. using with digital controllers, relays & control modules.
(d)	<b>Alternator:</b>
	Synchronous alternator rated at 750 KVA, 415 Volts at 1500 RPM, 3 Phase, 4 wire, 50 Hz, AC supply with 0.8 lagging power factor at 40 Degree C, 50% RH & at 1000 meter MSL. The alternator shall have SPDP enclosure, brushless, continuous duty, self excited and self- regulated through electronic AVR conforming to IS: 4722 / BS 2613 suitable for tropical conditions and with class F/H insulation. AVR should be compatible for auto synchronisation.
(e)	<b>Base Frame and Foundation</b>
	Both the engine and alternator shall be mounted on suitable base frame made of MS channel with necessary reinforcement which shall be installed on suitable cement concrete foundation and vibration isolation arrangement as per recommendations of manufacturer. Necessary civil work is in the contractor scope.
(f)	<b>Fuel Tank:</b>
	Daily service fuel tank of 990 litres capacity fabricated out of 5 mm thick MS sheet complete with all standard accessories and fuel piping between fuel tank and diesel engine with MS class 'C' pipes of suitable dia. Complete with valves, level indications & accessories as required as per specifications.
(g)	<b>Starting system:</b>
	12V / 24V DC starting system comprising of starter motors: voltage regulator and arrangements for initial excitation complete with suitable nos of batteries as required as per specifications.
(h)	Accoustic and weather proof enclosure with arrangements for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air in to the atmosphere as per specifications.
(i)	Unloading, shifting & positioning of DG set.

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<b>(j)</b>	Site testing of DG set (The price shall include required quantity of diesel for site testing)				
	<b>Total</b>				
<b>ii.</b>	<b>Exhaust System:</b>				
<b>a.</b>	Residential silencer with necessary supporting arrangements with spring support, wherever applicable .				
<b>b.</b>	The system shall comply with the norms of KSPCB/other statutory bodies, with a standard height from the ground with required structure. Please refer specification.				
<b>c.</b>	5mm thick MS pipes as per IS 3589 shall be supplied. The exhaust system including the silencer must be sized to ensure that back pressure on system does not exceed the back pressure recommended by engine manufacturer. Design calculation in support shall be submitted on award of contract.				
<b>d.</b>	Pipe shall be thoroughly cleaned of rust and painted with heat resistant paint after fabrication and erection.				
<b>e.</b>	Exhaust piping and silencer shall be thermally insulated with aluminium sheet cladding.				
<b>f.</b>	Silencers and Horizontal runs shall be supported on spring supports fixed to ceiling. Vertical runs to have expansion bellows where length exceeds 25M.				
<b>g.</b>	Flexible expansion joint of multiple corrugated stainless steel shall be provided between engine exhaust manifold and exhaust piping.				
<b>h.</b>	Earthing, wether cowl at the top and aviation lights are to be provided.				

<b>ii.a</b>	Supplying and fixing exhaust gas piping of suitable dia. Welded black MS, B class pipe confirming to IS:3589 cut to required lengths and installed with necessary bends, supports and clamps, anti-vibration mounting, insulation of exhaust systems with mineral wool/Rockwool, 50mm thick wiremesh & aluminium cladding etc. as required as per specifications.	<b>Mtrs</b>	30		
<b>ii.b</b>	Steel supports for exhaust pipe, Residential silencer Supply & installation etc using ISMC, ISA steel sections complete including painting with zinc chromate primer and black enamel paint (supply, fabrication and installation). The weight mentioned is indicative, however actual measurement will be done during execution.	<b>Kg</b>	4000		
	<b>Total</b>				
<b>iii.</b>	<b>DG AMF panel &amp; associated electrical works:</b>				
	Supply, Installing, Testing and Commissioning of DG AMF panel complete with all switchgear, control, protection and metering features as per specification suitable for 750 kVA silent type DG set complete with suitable ACBs, relays, timers, set of CT's for metering & protection and energy analyser to indicate currents, phase and line voltages, frequency, power factor, KWH, KVARH & provision for overload, short circuit, restricted earth fault, under frequency, control cabling from AMF panel to DG set and elsewhere if required, all complete and their interlocking including of the following:				
	The PLC based control panel to have the following features:				
<b>(a)</b>	AMF operation with provision for manual operation				
<b>(b)</b>	2500A, Microprocesor based ACB, 4Pole EDO type				
<b>(c)</b>	Auto / Manual / Test / Off selector switch				
<b>(d)</b>	2 Nos. Over voltage relay, 2 Nos. reverse power relay and 2 nos Under voltage relay.				

<b>(e)</b>	3 sets of current transformers 15 P 10 accuracy for protection and 15A class-I for metering. CT make- Kappa				
<b>(f)</b>	Energy analyser unit to indicate current, voltage, frequency, power factor and KWH				
<b>(g)</b>	Indicating lamps for load on mains and load on set.				
<b>(h)</b>	Battery charger, complete with transformer / rectifier, DC voltmeter and ammeter, selector switch for trickle, off and boost and current adjustment.				
<b>(i)</b>	Main supply failure monitor.				
<b>(j)</b>	Supply failure timer.				
<b>(k)</b>	Restoration timer.				
<b>(l)</b>	Control unit with three impulse automatic engine start/stop and failure to start lockout.				
<b>(m)</b>	Impulse counter with locking and reset facility.				
<b>(n)</b>	ON/OFF/Control circuit switch with indicator.				
<b>(o)</b>	Audio / Video annunciation for				
	1. High water temperature.				
	2. Low lubricating oil pressure.				
	3. Engine Over speed.				
	4. Engine fails to start				
	5. Full load / max. load warning.				
<b>iii.a</b>	750kVA DG set AMF panel as per above specification with incomer of 2500Amps microprocessor based ACB, 4Pole EDO type.	<b>No</b>	1		
	<b>Total</b>				
<b>iv</b>	<b>Statutory clearance(s)</b>				
	Approval/clearance of the complete installation shall be obtained by the contractor from CPCB/state pollutions control boards/local bodies/Central Electricity Authority (CEA)/other licensing authorities wherever required.	<b>job</b>	1		
	<b>TOTAL OF SUB HEAD 'A' (i+ii+iii+iv)</b>				



<b>2</b>	<b>Sub Head 'B'- Cabling</b>				
<b>i</b>	Supply of 1.1kV grade, 3.5 Core, XLPE insulated, and overall sheathed, stranded aluminum conductor, flat steel strip/wire armored cables conforming to IS:7098/part I (with latest amendments) and for following size. The cable shall bear ISI certification mark.				
<b>a</b>	3.5 Core x 240 Sq.mm	<b>Mtrs</b>	675		
<b>ii</b>	Laying of 3.5 core, 1.1kV grade XLPE cables, armored aluminum conductor cables in ground, in all kind of soil, below ground level including transportation of cable of site, excavation, refilling with sand and baked bricks on top and sides and providing cable route/joint markers complete as per specifications.				
<b>a</b>	Laying of 5 nos. of cables, 3.5core, 240 Sq.mm (Note: 5 nos. of cable measured as a single run).	<b>Mtrs</b>	60		
<b>iii</b>	Laying of 3.5 core, 1.1kV grade, XLPE cables armored aluminum conductor cable in existing trench/on cable tray, on wall/floor/ceiling/above false ceiling/below false floor/existing hume pipe/existing HDPE pipe including transportation of cable to site, removing of trench/false ceiling/false flooring covers and reclosing the covers after laying the cables in good condition with supply of all necessary materials such as brackets, clamps, MS spaces complete as required and as directed by EIC.				
<b>a</b>	Laying of 5 nos. of cables, 3.5core, 240 Sq.mm (Note:5 nos. of cable measured as a single run)	<b>Mtrs</b>	75		
<b>iv</b>	<b>End terminations</b>				
<b>a</b>	Providing end terminations for 3.5 core, 1.1 kV grade XLPE insulated armoured, Aluminium conductor cables including supply of cable gland, lugs, neoprene bushes and other materials and tolls required complete with terminal connections, earthing of glands and as required and as directed by Engineer-in-charge.				
<b>b</b>	3.5 core x 240 Sq.mm cables with aluminium conductor	<b>each</b>	20		
	<b>TOTAL OF SUB-HEAD 'B' (i+ii+iii+iv)</b>				

<b>3</b>	<b>Sub Head 'C' - Earthing</b>				
<b>a</b>	Providing standard GI pipe earth of 3.5 Mtr Long, 38mm dia GI pipe for earth stations with GI pipe, conforming to IS: 3043 with latest amendments including supply of all materials (charcoal and salt) and providing chamber and funnel complete as required Note: Pipe earth used for earthing shall be " medium " class with ISI marking	<b>Sets</b>	2		
<b>b</b>	Supply & Installation of standard copper plate earth for earth station depth of 3.5 mtr with 600mmX600mmX3.15mm electrolytic copper plate, conforming to IS 3043 with latest amendments including supply of all materials (charcoal and salt) and providing chamber complete as required. Note: 1. The copper plate shall be tinned. 2. Rates of earth station includes the cost of suitable medium class GI pipe for watering.	<b>Sets</b>	2		
<b>c</b>	Providing and laying of electrolytic copper strip of 50x6mm size from earth station to equipments with all interconnections with inclusive of supply of all hardwares complete as required.	<b>Mtrs</b>	75		
<b>d</b>	Providing and laying of GI strip of 50x6mm size from earth station to equipments with all interconnections with inclusive of supply of all hardwares complete as required.	<b>Mtrs</b>	75		
	<b>TOTAL OF SUB-HEAD 'C'</b>				
<b>5</b>	<b>Sub Head 'D' - Annual Maintenance Contract(non-comprehensive)</b>				
<b>a</b>	Proposal for Non comprehensive Annual maintenance contract for 3 years from post warranty period of 2 years as per specifications.				
<b>a'</b>	1 year	year	1		
<b>b'</b>	2nd year	year	1		
<b>c'</b>	3rd year	year	1		
	<b>TOTAL OF SUB-HEAD 'D'</b>				
	<b>Total (A+B+C+D)</b>				

**Note: The tenderers will have to fill up their rates only in the price bid issued by the department. Tenders in which the price bids are given in any other format are liable to be rejected.**

Total amount in words:

Signature of the Contractor

Date :

Address: