

## Tender Details

**Tender No:** SCL/PS5/2018E0102101

**Tender Date:** 31/05/2018

**Purchase Entity:** Pur\_Entity5

## Tender Notice

SEMI-CONDUCTOR LABORATORYE-procurement Tender no. SCL/PS5/2018E00102101, SEMI CONDUCTOR LABORATORY (SCL) invites ONLINE offers in TWO part system through e-tender portal <https://eprocure.isro.gov.in> for Supply, Installation, Testing and Commissioning and associated electrical works of 500kVA, 50Hz, 3 $\phi$ , 415 VAC LT DG Set detailed specifications for auditorium building at Semi-Conductor Laboratory (SCL) S.A.S Nagar Mohali (Punjab) as per detailed specification and BOQ attached in tender document.

Tender Documents can be downloaded from 01.06.2018 at 1701 hours. to 02.07.2018 up to 1030 hours. The vendors need to get enrolled in the e-tender portal to access tender and submit their offer online. Vendors need to have Digital Signature Certificate as detailed on our e-portal and corporate e-mail ID to register on the above portal. Only online tenders will be accepted. No Manual/Postal/courier/ e-mail/fax tender will be entertained. Please note Tender fee shall not be applicable for tenders submitted on-line through this portal.

Vendors interested to participate in this e-Tender are required to register themselves as vendors, if not already registered, in our e-procurement portal <https://eprocure.isro.gov.in> by downloading plugins and help demos listed on the home page of the e procurement link mentioned above to complete the vendor registration process. They can seek help from help desk 0091-20-25315555/9167969601 (Email: [support.isro@nextenders.com](mailto:support.isro@nextenders.com)) also the home page of e procurement portal may be accessed for

any technical help for registration and subsequent process. Vendors may please note that without registering in our E-procurement portal they will not be able to quote for this tender.

## **Tender Attachments**

### **Technical Write-up/Drawings**

**Attachment - I:**

**Attachment - II:**

**Attachment - III:**

**Attachment - IV:**

**Attachment - V:**

### **Instructions to Tenderers (PT)**

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Instructions to Tenders (PT) 1. Interested tenderers may, at their option, login to <http://eprocure.isro.gov.in> and submit offers as per details of notification

2. This being a two part tender - Technical and Commercial part separate, the Technical part should not contain Pricing information. The tenders containing Price details in Technical part will be treated as unsolicited offers and rejected.

3. Request for the extension of the due date will not be considered.

4. SCL reserves the right to accept or reject any / or all the tenders in part or full without assigning any reasons thereof. The bidder is at liberty to seek information related to bidding conditions, bidding process and/or rejection of its bid.

5. In this tender either the Indian Agent on behalf of the Principal/OEM or the Principal/OEM itself can bid, but both cannot bid simultaneously for the same item. Indian agents while quoting on behalf of their principals shall provide necessary latest authorization letter obtained from their Principals/Manufacturers in their bid.

6. If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the tender for the same item. If submitted, all offers submitted by the said agent shall be excluded from the procurement process.

7. The tenders of vendors who have not agreed to furnish Security Deposit or Performance Bank Guarantee as sought vide this tender shall be excluded from the procurement process.

8. The tenders of bidders where the validity of the tender is shorter than the period specified in the tender enquiry shall be excluded from the procurement process.

9. Late tenders, delayed tenders, fax quotations and e-mail quotations are not considered.

Bids submitted other than EGPS mode shall not be considered.

10. SCL reserves the right to verify all claims made by the bidder.

11. SCL reserves the right to change any milestone date of the tendering activity / tender schedule.

12. Tender which is not submitted in terms of instructions mentioned herein is liable to be rejected.

13. If tender opening date happens to be a public holiday, tender will be opened on the next working day and interested bidders may depute their representatives to attend the Tender Opening, with proper authorization.

14. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

15. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.

16. It is to be noted that the drawings, specifications, end-use, etc., given by the purchaser, are confidential and shall not be disclosed to any third party.

17. Prices are required to be quoted according to the units indicated in the tender. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.

18. The quote should indicate quantity wise unit rate separately which have to be filled online. The Prices are to be mentioned both in figures as well as in words. The taxes, duties etc. are to be calculated and indicated in the column provided in online forms explicitly.

19. Bidders are expected to comply with commercial and other terms and conditions given in vendor specified terms of this tender. In case of any deviation, the reasons thereof should be clearly specified in the vendor specified terms column.

20. All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the unraced technical offer bidder are advised not to quote any rate with BOQ provide in technical specification document .

21. Specifications: Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his bid. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies.

22. The tenderer should provide, the name of his bankers as well as the latest Income -Tax clearance certificate duly countersigned by the Income -Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser during evaluation of tender.

23. Subletting and Assignment: The contractor/supplier cannot sublet, transfer or assign the order/Contract or any part thereof or interests therein or benefit or advantage thereof in any manner whatsoever, to any other party save with the previous written consent of the purchaser. Such consent by the purchaser, however, shall not relieve or discharge the contractor/supplier from any obligation, duty or responsibility under the Purchase Order/ Contract.

24. The contractor/supplier shall indemnify the purchaser against Workmen Compensation Act.

25. The authority of the person submitting the tender, if called for, should be produced.

26. The bids shall be opened as per schedule indicated in the Tender in the presence of the bidders/their authorized representatives who may like to attend the tender opening against presentation of Authorization letter. Due to any breakdown in server/link, bid opening will be continued on the following dates.

The schedule of opening of Price bids shall be intimated separately to the technically qualified bidders only.

#### 27. PROCEDURE FOR EVALUATION OF TENDERS:

##### Technical Evaluation Criteria:

Vendor meeting the eligibility criteria and basic technical specifications mentioned in SCL Tender shall be considered to be technically qualified.

##### Evaluation of Price Bids

The following elements shall be considered for evaluation of Priced Commercial offer:

- a. Price quoted by the bidder in the price bid template for meeting the functionalities given in the Tender and Technical Specifications sheet. Bid shall be evaluated on overall cost basis. b. Charges for installation, testing and commissioning if any in case quoted separately.
- c. Compliance with the Payment Terms prescribed in this tender document. In the event, the bidder offers Payment Terms stringent than SCL prescribed Payment Terms, the bid of the bidder shall be loaded based on Base Rate of SBI prevailing on the date of opening of price bids.
- d. In the event of the bidder seeking a Confirmed Letter of Credit, the bidders bid shall be loaded at the rate 0.5 percent of the LC value towards confirmation charges.
- e. In the event of the bidder requiring SCL to bear bank charges outside India (foreign bank charges), the bidders bid shall be loaded at the rate 0.5percent of the LC value towards bank charges outside India.

28. The bid should contain the following information:-

a. Agency Commission: Bidders are required to provide the following information in respect of their authorised Indian Agent, if any, alongwith technical bid as the same is mandatory as is required for consideration of the bid. Name, Address, Telephone no. , fax no., email of the Indian Agent including the contact person. A letter from the Manufacturer/supplier in the current date certifying that the said Indian Agent is their authorised Indian Agent and also indicating the responsibilities/role of the Indian Agent under the proposed purchase. Renumeration/service charges payable to the Indian Agent under the proposed purchase. The amount of agency commission included in the price and payable to Indian Agent of the contractor shall be paid directly to the Indian Agents by the Purchasers in equivalent in Indian rupees on the basis of an invoice from him applying TT buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. The payment will be released to the Indian Agents within 30 days from the date of acceptance of the goods.

b. Details of any technical service, if required for erection, assembly, commissioning and demonstration.

29. The FOB/FCA prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer country.

30. The details of Import License will be furnished in the Purchase Order.

31. Instruction/operation manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents/correspondence should be in English Language only.

32. Part shipment is not allowed unless specifically agreed to by us.

33. As far as possible, stores should be dispatched by Indian Flagged Vessels/ Air India or through any Agency nominated by us.

#### 34 Eligibility Criteria.

only those vendor(s)/Bidder(s) meeting the below mentioned eligibility criteria are eligible to participate in the tender and vendor needs to submit supporting documents along with the tender.

1. Vendor shall be the original equipment manufacturer (OEM) or Authorized agency of OEM (OEA).

2. Vendor shall have directly executed during the past seven years, one similar work of value not less than Rs. 36.48 lakh with capacity of individual DG set not less than 400 kVA or two works of value not less than Rs. 27.37 lakh with capacity of individual DG set bit less than 400kVA. Similar work shall mean supply, installation and testing, commissioning of DG set.

3. Average Annual financial turnover during the last three (03) years ending 31st March, 2017 should not be less than Rs. 13.68 Lakh.

4. The contractor should not have incurred any loss in more than two years during the last five (5) financial years ending 31st March, 2017.

5. A solvency certificate of minimum solvency of Rs. 18.25 lakh from a scheduled commercial bank issued not earlier 06 months from the last date of submission of tender.

6. Bidder to provide certified copy from chartered accountant for the Annual Financial turnover and balance sheet showing profit and loss.

Note: To ascertain eligibility for the work, the participating bidder shall enclose copy(ies) of the detailed purchase order(s)/work orders and their completion certificate(s), evidencing satisfactory completion of similar works issued by the respective clients/organizations. Completion certificate for works issued by private parties shall be supported by TDS, certificate in support of authorization in case of authorized agency of OEM/OEA.

7. The rates shall be quoted by the tenders for various items in the price format forming part of the tender

#### 35. RECOVERY OF SUM DUE:

Whenever any claim for the payment of whether liquidated or not, money arising out of or under this Contract against the Contractor the purchaser shall be entitled to recover such sum by appropriating in part or whole the security deposited by the Contractor if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor then the balance or the total sum recoverable as the case may be shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with

the purchaser. Should this sum be not sufficient to cover the full amount recoverable the Contractor shall pay to the purchaser on demand the remaining balance due. Similarly if the purchaser has or makes any claim whether liquidated or not against the Contractor under any other Contract with the purchaser the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the purchaser are finally adjudicated upon and paid by the Contractor.

#### 36. LANGUAGE AND MEASURES:

All documents pertaining to the Contract including specification schedule notice correspondence operating and maintenance instructions drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

#### 37. TECHNICAL DOCUMENTATION:

The Contractor shall provide installation, operation maintenance and programming manual. All documentation shall be in English language.

#### 38. CONTRACTORS DEFAULT LIABILITY:

The purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

- a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.
- b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

In the event the Purchaser terminates the Contract in whole or in part as provided in this tender document, the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 24 until such reasonable time as may be required for the final supply of stores.

A) If this Contract is terminated as provided in this tender document, the Purchaser in addition to any other rights provided in this Article may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

- a) Any completed stores.
- b) Such partially completed stores

drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser



shall pay to the Contractor the Contract price for completed stores delivered to and accepted, by the purchaser and for manufacturing material delivered and accepted.

B) In the event the Purchaser does not terminate the Contract as provided in this tender document, the Contractor shall continue the performance of the Contract in which case he shall be liable to the purchaser for liquidated damages for delay as set out in this tender document until the stores are accepted.

## Bid Templates

### Document Solicited from Vendor

Attachment 1:

Attachment 2:

### PART 1: General specification

#### Item Specifications

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
1	Intent of Specification: Design, Manufacture, Supply, Transportation, Delivery, Installation, Testing, commissioning of 415 VAC , 50Hz, 3Ö, 500 kVADiesel Generator Set along with the auxiliaries required for			

	<p>prime power generation to operate for continuous or for extended periods of time for New Auditorium Building at Semi-Conductor Laboratory (SCL), S.A.S. Nagar, Mohali (Punjab). The generator set shall consist of a diesel engine directly coupled to an electric generator, together with the necessary controller suitable for Engine control and AMF logic with Auto/Manual selection, battery charger, batteries, inbuilt diesel tank, auxiliaries, Exhaust system, acoustic enclosure etc. detailed as per technical specifications.</p>			
<p>Receiving, unloading, storage, insurance, in-plant transportation of all equipment &amp; accessories covered under this specification and BOQ.</p>				

<p>All major equipment's like engine and alternator shall be designed for operating temperature of 50 deg C ambient temperature and vendor shall provide the OEM performance certificate for the same.</p>				
<p>The DG set shall be installed outdoor as per the location specified by the SCL within the vicinity of 10-20meter of the Auditorium Building. Contractor shall submit the civil foundation details within 2-3 weeks of release of P.O, construction of DG set foundation as per manufacturer's norms and applicable codes/standards shall be in the scope of SCL. Othercivil worksfor the installation of the DG Set shall be the scope of the contractor.</p>				

<p>Obtaining approval of the installation from pollution control board, Electrical inspector and all other statutory authorities shall be the scope of the contractor.</p>				
<p>Obtaining Diesel Engine manufacturer's approval for the installation with specific emphasis on alignment, exhaust &amp; fuel piping and ventilation before commissioning.</p>				
<p>Housekeeping during the installation work and removal of debris &amp; unwanted materials on day-to-day basis and clearing the site on completion.</p>				
<p>Any related work covering supply of installation materials, consumables, etc. whether specified or not, to render the system fully functional and conforming to the best</p>				

<p>engineering standards. This shall include battery charging.</p>				
<p>The work shall be carried out by the contractor as per the specifications spelled out in Part-II of the tender specifications following well laid norms and all relevant IS codes.</p>				
<p>The Contractor may conduct site visit to SCL on any working day (Monday to Friday) from 10.00Hrs to 1600Hrs with prior intimation to have a fair assessment of the work involved.</p>				
<p>The work shall be executed by the contractor as per the Approved for Construction (AFC) Drawings. The contractor will prepare working drawings complying with the technical specifications, the tender drawings as</p>				

<p>well as the Bill of quantities, and integrate wiring/cabling system for optimal space utilization/ management as part of the detailed engineering, and submit the drawings to SCL for its approval. SCL shall review the drawings and comments, if any, shall be incorporated in the same by the Contractor. The approved drawings (to be called as the Approved for construction or AFC drawings) shall be the drawings for implementation by the Contractor.</p>				
<p>Payment for the work shall be made on the basis of actual work done and the accepted rates for various items in the Bill of Quantities.</p>				
<p>2</p>	<p>Period of Completion:The time allowed for supply</p>			

	<p>installation, testing and commissioning of the entire work shall be 5 (five) months to be reckoned from the 7th day of issue of purchase order by SCL. The prices shall remain firm for the entire completion period including extended period, if any. No escalation shall be applicable for the work.</p>			
3	<p>Drawing, Data and Manuals after receipt of Purchase Order: The Vendor shall prepare and submit following drawing /documents and get them approved from Engineer-in-charge (EIC) before start of the work.</p>			
3.1	<p>Make, type, Model and catalogue of all components along with technical and test certificates, Manuals etc. after completion of pre dispatch testing at OEM</p>			



	/OEA site.			
3.2	Preliminary design & review drawings, Single line diagrams, GA drawings and as built diagram for complete system for DG set.			
3.3	Civil and Electrical layout drawing with dimension of all DG set equipment including alternator layout, battery charger, Engine foundation, Acoustic enclosure, Exhaust system to be furnished for the Stack including foundation Bolt design & details, pipe support structure, etc. including all calculation sheets for subsystem as required. Make, type, Model and catalogue of all components along with technical leaflets, data sheets, etc			
3.4	Equipment data sheets furnishing guaranteed			

	performance figure for each type of equipment. Party to submit the required leaflets in support of the guaranteed performance.			
3.5	Test certificates, test results for each type of equipment of the engine and alternator duly supported by the respective manufacturer.			
3.6	Checks list and test to be conduct during erection, testing & commissioning of the individual equipment.			
3.7	Any other drawings relevant to work.			
4	Deviation: Vendor shall not deviate from the specified specifications however if bidder wishes to deviate from the specification All such deviation shall be clearly mentioned along with			

	bidder compliance form for SCL evaluation and acceptance of the same shall be the sole discretion of SCL.			
5	Electricity for installation:Electricity required for the work shall be provided by SCL at no charge basis to the vendor.			
6	Storage/site office space: Contractor shall arrange at his own cost storage space, as required within the SCL premises.			
7	Safety: In the course of the work, personnel working in the system at site should take utmost care for their safety and work purely at individuals/ party's risk. SCL will not be responsible for any untoward accidents for the party's working personnel. The vendor/ firm/party shall clear all			

	<p>waste material and left out material from the site after completion of work at his cost. The party/firm shall treat all materials obtained during the work at site as SCL property and such materials shall be handed over to SCL, vendor shall execute the work as per applicable safety standards and codes.</p>			
8	<p>Guaranteed service life: The DG set and accessories shall be guaranteed for satisfactory operation for a period of 24 months from the date of commissioning and acceptance or 5000 running hours from the date of commissioning and acceptance whichever is earlier. Any defects noticed during this period shall be rectified by the contractor free of cost. The</p>			

	contractor shall indicate the type of records to be maintained so that the warranty claims if any are honored by the manufacturer.			
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**PART-I :General specification**

**Item Specifications -I**

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
9	Eligibility Criteria:Only those Vendors/Bidders meeting the below mentioned eligibility criteria are eligible to Participate in the tender and vendor needs to submit supporting documents along with tender.			
9.1	Vendor shall be the original equipment manufacturer (OEM) or Authorised agency of OEM			

	(OEA).			
9.2	Vendor shall have directly executed during the past seven years, one similar work of value not less than Rs. 36.48 lakh with capacity of individual DG set not less than 400 kVA or two works of value not less than Rs. 27.37 lakh with capacity of individual DG set not less than 400 kVA. 'Similar Work' shall mean Supply, Installation, and Testing, Commissioning of DG set(s).			
9.3	Average Annual financial turnover during the last three (3) years ending 31st March 2017 should not be less than Rs.13.68 Lakh.			
9.4	The contractor should not have incurred any loss in more than two years during the last five (5) financial years ending 31st			

	March 2017.			
9.5	A solvency certificate of minimum solvency of Rs. 18.25 Lakh from a Scheduled Commercial bank issued not earlier than 6 months from the last date of submission of tender.			
9.6	Bidder to provide certified copy from chartered accountant for the Annual Financial turnover and balance sheet showing profit and loss. Note: To ascertain eligibility for the work, the participating bidder shall enclose copy (ies) of the detailed purchase Order(s)/work orders and their completion certificate(s), evidencing satisfactory completion of similar works issued by the respective clients/organisations. Completion certificate for			

	works issued by private parties shall be supported by TDS, certificate in support of authorization in case of authorized agency of OEM/OEA.			
9.7	The rates shall be quoted by the tenderers for various items in the price format forming part of the tender document.			
10	Training: Vendor shall provide basic and advanced operator training for SCL personals (minimum 04 persons) at OEM's works on entire system.			
11	Scope of Installation: Installation scope includes execution of works as per BOQ and any other works specified/unspecified for smooth completion of the work as per OEM recommended guidelines for Installation, Testing and Commissioning of DG			



	set.			
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**PART-II: Detailed Technical Specifications for 415VAC,50Hz,3Ö, 500 kVA LT DG Set**

**Item Specifications -II**

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
1	ENGINE:			
1.1	The diesel engines shall be of approved make, direct injection, four stroke, multi cylinder, Liquid cooled, radiator type, turbo charged, operating at a nominal speed of 1500 R.P.M and capable of developing suitable BHP and shall comply with latest CPCB & EURO norms.			
1.2	The engine and the governing system shall be suitable for Prime duty generating application and shall conform to BS: 5514 /			

	ISO 3046. The unit shall be suitable for operation on high-speed diesel oil available in Indian Market.			
1.3	The engine shall be electric start and shall be suitable for battery assisted manual / auto starting.			
1.4	The governing system of the engine shall be electronic type and suitable to control frequency variation within + 3%			
1.5	The engine fitments shall include but not be limited to the following.i) Flexible coupling and flywheel with guard.ii) Dry type air filter with clogged condition indicator.iii) Cooling radiator.iv) Electronic governor.v) Dual fuel filters with on line filter changing provision.vi) Lube oil pump, oil cooler and filter.vii) Turbo			

	<p>charger.viii) 24V DC starter &amp; battery charging alternator.ix) Set mounted instruments to accomplish measuring and protection requirements as per technical specifications. x) Inbuilt fuel tank of minimum 600 Ltrscapacity with fuel level gauge ,internal fuel piping, if any and provision for connecting fuel tank piping to day tank in future.xi) Engine mounted electronic control panel to display the following engine and electrical parameters and associated instruments : a. Lube oil pressure indicator and temperature gauge.b. Tachometer for speed indication with hour meter.c. Battery charging Ammeter.d. Start/Stop switch with key.e. Over speed stop switch with contacts.f. Low lube oil pressure switch.g. High</p>			
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	<p>coolant temperature alarm &amp; triph. Start /Stop solenoid.Note: Wiring of all instruments terminals shall be wired up to junction box and Wiring harness using temperature resistant insulationFRLS and flexible copperconductor wires. The wiring should be clamped at regular intervals and terminatedusing lugs and terminals.</p>			
1.6	<p>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.</p>			
1.7	<p>The DG set shall be</p>			

	capable of handling step load up to 70% of the capacity without dropping other loads due to voltage dips. Further the engine shall be capable of taking full load within 10seconds of starting.			
1.8	The guaranteed specific fuel consumption shall not exceed 150 grams / BHP-hr. with a tolerance of + 5 %. The same shall be proved during the load trial at OEM/OEAs site testing.			
1.9	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.			
1.10	The engine shall be supplied with first filling of oil of required quantity			

	along with lube oil and coolant as recommended by the manufacturers.			
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**PART-II: Detailed Technical Specifications for 415VAC,50Hz,3Ø, 500 kVA LT DG Set**

**Item Specifications -III**

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
2	ACCESSORIES:The following accessories shall be supplied with the DG set.			
2.1	1) Common base frame for the engine and alternator.2)Anti-vibration mounts of requisite capacity (Dunlop series S make)3) Residential/Hospital grade silencer.4) Protective guards for all rotating parts shall be provided.			
2.2	Batteries and Battery charger:The batteries shall			

	<p>be of heavy duty; high performance lead acid type of Exide make. Each battery shall be rated 12V. The number and AH capacity shall be selected to suit the engine requirements in full charge condition at the time of installation. i</p>			
<p>Battery shall be suitable for six successive starting attempts each of 10 seconds duration with a gap of 05 seconds between successive starts.</p>				
<p>The battery shall be supplied complete with all accessories. The accessories shall include battery stand/rack, battery leads with terminal ends acrylic top cover and inter battery connectors.</p>				
<p>Heavy duty Battery charger of suitable capacity to charge the batteries when the set is</p>				

<p>not running. The charger shall get disconnected while the generator set is running.</p>				
<p>2.3</p>	<p>Engine Control Panel:Each set shall be supplied with an engine mounted electronic control panel. The control panel shall display all the engine, alternator &amp; battery parameters, Auto /Manual selection with a provision for alternator Circuit breaker control. 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 &amp; for electrical faults it shall be stopped with a time delay for cooling down. Provision for an audible alarm shall be provided to announce</p>			



	tripping of DGs in the main panel. The panel shall have output port compatible with Modbus for BMS monitoring. The DG set shall also be equipped with auto start/stop of the engine with following capabilities.			
Auto Mains Failure (AMF) logic shall start DG engine during mains power failure in case of Auto selection along with a provision for adjustable time delay.				
AMF logic shall have provision for running engine in Manual mode during normal conditions for testing of DG set however during testing controller shall not operate DG and Mains ACBs.				
AMF logic shall have provision for manually closing/Tripping the DG set ACB and shall trip DG				

ACB automatically during electrical fault conditions				
DG set engine shall not start during mains power failure in case of Manual selection in controller.				
2.4	Engine Protections and Alarms: The following alarms shall be provided in the DG control Panel to indicate & protect against abnormal operations.			
Low lube Oil Pressure with 2 stage Alarm and Engine Shutdown				
High coolant temperature with 2 stage Alarm and Engine Shutdown				
Over speed with Alarm and Engine Shutdown				
Fail to start Alarm				
Battery charger fault Alarm				

High/Low Battery voltage Alarm				
Fail to crank(over crank) shutdown				
Note: 1. Under above conditions DG ACB should trip.2. On engine over speed, low lube oil pressure, high coolant temperature,crank failure the prime mover also should trip.				
3	ALTERNATOR:1500 RPM, 415V, 3-Phase, 500 kVA star connected, 50 Hz, 0.8 PF, horizontal foot mounted, single bearing, self-excited, self-regulated, brush less, screen protected drip proof, continuous duty alternator with class "H" insulation in IP-22 enclosure incorporating the following.			
Continuous damper				

winding.				
Suitable number of RTDs, BTDs for alarm and protection and one anti condensation heaters wired to a separate terminal box.				
Pilot exciter.				
3 Phase sensing AVR with + 0.5%voltage regulation.				
Line and neutral CT of adequate ratio and class for OC/SC/EF/Differential protectionrelayfor DG Protection.				
Separately mounted adapter box suitable for cable termination of requisite number of armored Aluminum XLPE cable between alternator terminals and adapter box.				

**PART-II: Detailed Technical Specifications for 415VAC,50Hz,3Ø, 500 kVA LT DG Set**

**Item Specifications -IV**

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
3.1	Technical specifications:			
	The alternator shall conform to IS 4722 / BS 2613.			
	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 inertia constant shall be 0.26 second or above.			
	The alternator terminal voltage for any load variation should be			

maintained within +5%.				
The prime mover response should be such that with 400 kW (for 500kVA DG set) load throw OFF / ON for the generator both transient and steady state frequency variation should be within + 3%.				
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.				

4	METERING:The following is envisaged for the metering of the DG set and the same shall be incorporated:Multifunction meter for alternator load parameters.			
DC ammeter for exciting current.				
Voltmeter for DC exciting voltage.				
Epoxy cast resin current transformer of appropriate ratio, class 0.5 or better, minimum 15VA burden or better for metering CTs and 5P10 or better class for protection.				
5	PROTECTIONS OF ALTERNATOR AGAINST ELECTRICAL FAULTS:Control panel inbuilt logic / separate numerical relays for Over current with IDMT characteristics , Short-circuit , Earth fault ,			

	Differential protection , range adjustable under voltage relay , range adjustable over voltage relay and reverse power relay for protection of DG set Alternator along with following conditions.			
5.1	Low AC voltage protection with 2 stage Alarm			
5.2	High AC voltage protection with 2 stage Alarm			
5.3	Over current/Short circuit Alarm along with immediate function of Suppression of field excitation to prevent fault feeding.			
5.4	Earth fault Alarm along with immediate function of Suppression of field excitation to prevent fault feeding.			
5.5	Over frequency with 2 stage Alarm			



5.6	Under frequency with 2 stage Alarm			
5.7	High winding/Bearing temperature with 2 stage Alarm			
Note: Under above conditions DGACB should trip				
6	PERFORMANCE:The DG set shall comply with the latest CPCB norms & Euro norms, with the integral acoustic enclosure designed in such a way that there are no hot pockets around engine and it does not allow the temperature to rise more than 70C above ambient temperature.The sound pressure levels when measured at a distance of one meter outside the DG enclosure louvers shall be not more than 75 dB (A) under free field conditions and as per applicable standards detailed as per			

	technical specifications of Acoustic enclosure.			
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 access doors of adequate size shall be provided on either side of the DG set to facilitate easy inspection and carry out maintenance works.			
8	SPARES:The DG set will be supplied with the following spares, which shall be handed over at the time of commissioning for DG set. The quoted rates shall be inclusive of the cost of the spares. Vendor shall supply OEM recommended spare parts and tools along with DG set in addition to the following spare parts, 1. Two(2) sets of renewable			

	<p>parts of oil, fuel &amp; air filters alongwith one (1) set of tools required to replace filters..2. Minimum Two(2) Nos. fan belts used if any.3. Minimum five (5) Nos. spare fuses of each type &amp; size used in instruments and engine control panel.</p>			
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**PART-II: Detailed Technical Specifications for 415VAC,50Hz,3Ø, 500 kVA LT DG Set**

**Item Specifications -V**

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
9	DG SET INSTALLATION:The tenderer shall undertake the installation work at site. The general scope of installation work shall include the following.			
9.1	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.				
Installation of batteries, Battery charger and its earthing, cabling and terminations of the same as per the requirement.				
9.2	EXHAUST PIPING:The exhaust piping shall be fabricated from MS pipes, thickness shall be as per relevant IS (with latest amendments).			
The exhaust piping and the silencers shall be insulated using 75 mm thick mineral wool inside the container & up to the exhaust stack.				

<p>The insulation shall be cladded with 22 SWG aluminum sheet.</p>				
<p>The exhaust pipe between engine exhaust ports to fixed exhaust stack shall be with spring suspension supports.</p>				
<p>The height of exhaust pipe shall be as per latest CPCB norms. The stack shall be welded at site and erected over the MS framework. 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.</p>				
<p>All tools and tackles used for the erection shall have valid safety certification.</p>				
<p>10.1</p>	<p>ELECTRICAL INSTALLATION:The electrical power cabling and control cabling from</p>			

	<p>alternator/Engine controller to SCL's main MV electrical panel, DG internal control cabling from the Engine instruments /associated equipment to the DG Engine, Engine logic control panel, battery charger panel and battery shall be the scope of the contractor as per BOQ.</p>			
10.2	<p>The contractor shall appoint an experienced full time engineer throughout the installation period till the sets are handed over.</p>			
10.3	<p>SCL shall provide sufficient potential free contacts, Feedbacks and terminal diagram for main MV panel and integration of the MV panel with Engine control panel shall be the scope of the contractor as per requirement.</p>			

11	<p>TESTING:A) 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 in the presence of SCL representatives. Full load running for 12 hours continuously including one-hour overload testing at 110% load shall be carried out at the end of the full load trial. All the readings shall be logged to evaluate the fuel consumption, lube oil pressure, water &amp; oil temperature vis-à-vis the electrical load.Note: The DG set shall be deemed to be dispatched after satisfactory performance testing of all associated equipment along with prior approval of SCL's</p>			
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	representative.			
B)SITE TESTING:Following tests shall be conducted at site in the presence of the SCL'srepresentative before energization. The contractor shall provide all testing equipment, Labor and consumables required for the testing:a).Checking the alignment by engine manufacturer's representative and obtaining approval.				
b) Insulation resistance test on alternator, control panel and cabling.				
c) Checking the engine safeties for satisfactory operation.				
d) Checking vibration levels and providing certificate.				
e) Testing of individual protective devices on engine and alternator and				



ensuring that the wiring is carried out properly.				
f) All consumables shall be arranged by the vendor during load testing				
g) The noise level at one meter from the enclosure and the temperature rise inside the enclosure shall be measured and test certificate shall be provided.				
h) 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.				
12.1	DG SET ACCEPTANCE:SCL will take over the DG set for operation on completion of the following.DG set is installed, tested and commissioned as per the			

	specifications.			
12.2	Original test certificates are furnished for engine, alternator, acoustic enclosure and all other bought out items.			
12.3	Load trials as per BOQ and the performance of acoustic enclosure and ventilation in presence of SCL's representative.			
12.4	Approvals are obtained from Pollution Control Board, Electrical Inspectorate and any other applicable statutory authorities.			
12.5	The set shall be handed over with first fill of lube oil and minimum 50% filled service fuel tanks with diesel oil along with spares mentioned.			

**PART-II: Detailed Technical Specifications for 415VAC,50Hz,3Ö, 500 kVA LT DG Set**

**Item Specifications -VI**

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
13	DOCUMENTATION:As a part of the equipment supply, following documentation shall be furnished on successful completion of the entire work, the Contractor shall provide 'As Built' drawings for all the Systems executed under the Contract. Three (03) sets of hard copies and one (01) set in soft copy (CD/DVD) in Auto-CAD format shall be provided to SCL for its record and reference.			
General arrangement plan of DG set.				
Pipingschematic diagram				
Chimney fabrication drawing.				

Layout of fuel and exhaust piping.				
Spare parts list, maintenance chart, operation and maintenance manuals are to be submitted.				
Layout and constructional details of acoustic treatment.				
Calculations for ventilation system design.				
Engine wiring diagram.				
New machine certificate.				
Test certificate for engine and alternator.				
Test certificates of instruments, Switch gear and cables.				
Installation, operation and maintenance instructions for diesel engine and alternator.				

DG set parts list with part number along with spare parts list.				
Approval from Pollution Control Board.				

### PART III: TECHNICAL SPECIFICATION FOR ACOUSTIC ENCLOSURE

#### Item Specifications -VII

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
1	Scope of Supply:Supply of containerized type ACOUSTIC ENCLOSURE suitable for 500 kVA DG set radiator cooled diesel engine.			
2	Enclosure Description:The acoustic enclosure shall be of free standing, floor mounting type integral with the DG set. The enclosure shall be provided with rugged heavy-duty structural steel			

	<p>base frame with chequered plate flooring on which the DG set is to be mounted. The enclosure shall be prefabricated factory-built and modular in construction, so that it can be easily assembled at site around the DG set. The enclosure shall consist of acoustically treated panels housed in rugged steel frames, which shall be bolted together to form the body of the enclosure. Sliding doors shall be provided, on either side, which shall also be acoustically treated, thereby providing easy access to the DG set while minimizing the operating space requirements. The construction of the acoustic enclosure shall be such that with both the acoustic doors open on the either side, full access is available to the engine</p>			
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	<p>and alternator. For fresh air inlet into the system a parallel baffle air inlet silencer shall be provided. Additionally, to augment the fresh air inlet requirements, a forced air ventilation duct with associated silencer shall be provided above the alternator. For hot air discharge, an acoustic discharge plenum shall be provided in front of the engine radiator, for discharge of hot air into the surroundings through a parallel baffle air outlet silencer. The enclosure shall have suitable openings in the roof module for exhaust piping. The acoustic enclosure shall comply with latest CPCB &amp; EURO-II norms. Note: In addition to above vendor shall provide minimum 500Lux level illumination inside the acoustic enclosure for</p>			
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	<p>routine inspections of the DG set during normal and abnormal conditions. The enclosure shall also be provided with heat detector(s).</p>			
3.1	<p>Constructional features: The construction and design of the acoustic enclosure shall be very rugged, durable and shall be virtually maintenance free.</p>			
3.2	<p>The acoustic panels shall be filled with a special grade high-density mineral wool retained on the inside by perforated GI sheets specially designed for optimum sound attenuation.</p>			
3.3	<p>The outer surface of the Acoustic Panels shall be fabricated of perforated 16G corrugated CRCA sheet steel of SAIL make only. All sheet steel frames shall be of 16G CRCA</p>			



	sheets of SAIL make only.			
3.4	All structural members such as angles/channels used in the construction of the enclosure frame shall of TISCO/SAIL make only.			
3.5	All materials used for Acoustic Enclosure shall be fire resistant/fire retardant grade.			
3.6	The sheet steel treatment shall consist of degreasing, de-rusting and phosphating followed by two coats of zinc chromate primer, followed by two coats of Zinpholite surface for superior corrosion resistance and two coats of finish paint.			
3.7	For effective acoustic sealing, necessary gasket material shall be provided.			
3.8	All hardware and fittings used shall be passivized with zinc.			

4.1	Dimensions:It shall be ensured that at least 1000mm (min.) clear space is available all around the Acoustic Enclosure to ensure free air flow for the Genset as required and to facilitate accessibility for generator operation and routine maintenance.			
4.2	Necessary openings shall be made for the entry of power cable and control cables, fuel piping, exhaust piping, air inlet pipe etc.			
4.3	With the installation of the acoustic enclosure, there shall not be any de-rating of the DG set. The maximum temperature of oil and water shall not exceed the limits prescribed by the manufacturer of the engine. The DG set shall give rated output continuously.			

## APPROVED MAKE LIST

### Item Specifications -VIII

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
1	DG set Engine Make: Cummins /Perkins /Volvo penta /MTU /Caterpillar. Alternator Make: STAMFORD-AVK /LEROY SOMER/CROMPTON GREAVES. Battery charger: Any Reputed make with prior approval from SCL. Power /Control Cables: Finolex /Havells / KEI/ Polycab/RPG. Cable termination: Dowells/Commet/Hex. Swi tch gear: Siemens /Schneider/ABB. Structural members including Enclosure accessories: TISCO / SAIL.			

**Annexure: 1 Technical particulars to be furnished by the Tenderer**

**Item Specifications -X**

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
1	Source (OEM /OEA or authorized agency)			
2	Make & Manufacturer			
3	Engine			
3.1	Engine Model			
3.2	Engine Rating			
3.3	Engine Powera) Gross BHPb) Net BHP			
3.4	No. of Cylinders			
3.5	Engine RPM			
3.6	Type of Starting			
3.7	Type of Fuel			
3.8	Type of cooling			
3.9	Systems ( flow diagram/supporting			

	drawing is to be enclosed a) Governing arrangement b) Cooling system c) Fuel d) Lubrication e) Exhaust f) Air filtration, dry type / other type g) Protection			
3.10	Type of coupling			
3.11	Type of silencer			
3.12	Max. permissible ambient temperature			
3.13	Speed Regulation			
3.14	Efficiency at different percentages of load			
3.15	Standard / optional accessories			
3.16	Weight of the Engine			
3.17	Engine Protections provided			

**Annexure: 1 Technical particulars to be furnished by the Tenderer**

**Item Specifications -XI**

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
4.1	ALTERNATOR:Alternator Make and Model number			
4.2	Alternator Rating			
4.3	Continuous output rating			
4.4	Max. rating KW @ 0.8 PF			
4.5	Harmonic distortion level ,Max.permissible unbalance percentage between phases			
4.6	Rated Voltage			
4.7	Full load current			
4.8	Excitationa) Excited voltage, DC voltsb) Excided current			
4.9	Overload capacity			
4.10	Voltage regulation			
4.11	Degree of protection			
4.12	Class of insulation			

4.13	Weight of the Alternator			
5.1	ACOUSTIC ENCLOSURE:Acoustic enclosure Dimensions			
5.2	Sound level at 1 Mtr from the enclosure			
5.3	Enclosure Temperature rise above ambient during DG set running condition			
6	Warranty			
7	Acceptance			

#### Vendor Specified Terms

Description	Vendor Terms
<p>1. GST:</p> <p>Purchaser is entitled to concessional GST of 5% as per Ministry of Finance Department of Revenue, Notification No. 47/2017 Integrated Tax (Rate) both dated 14th November 2017 respectively and would accordingly issue Exemption Certificate in favour of the contractor quoting in Indian Rupees. The bidder should take note of the same while quoting the prices in Indian Rupees.</p>	

<p>2. For imported materials, Purchaser is entitled to issue Customs duty exemption certificate (CDEC) to the contractor under customs notification no.51/96 dated 23.07.1996 and subsequent amendments to enable the contractor to avail off the benefit of concessional rate of customs duty under this notification. CVD under this notification is nil. In addition to the above CDEC any documentary support requested by the contractor from the purchaser for customs clearance of goods against the above CDEC shall be provided by the purchaser.</p> <p>(Purchaser will provide Customs Duty Exemption Certificate in case of Import Orders/ imported supplies/ High Sea Sales).</p>	
<p>3 . PRICES:</p> <p>Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations.</p>	
<p>4. PERIOD OF COMPLETION:</p> <p>The time allowed for supply installation testing and commissioning of the entire work shall be 05 (Five) months to be reckoned from the 7th day of issue of purchase order by SCL.</p> <p>The vendor shall remain firm for the entire completion period including extended period, if any. No escalation shall be applicable</p>	



<p>for the work.</p>	
<p>5. SECURITY DEPOSIT:</p> <p>a) On acceptance of the tender, the Contractor shall submit security deposit for ten percent (10 percent) of the value of the Contract within 15 days from the date of purchase order. If the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the re-purchase of the stores contracted at the cost and risk of the Contractor.</p> <p>b) Security Deposit shall be submitted through Demand Draft /Bankers Cheque/ fixed deposit receipt or Bank Guarantee from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty (60) days beyond the date for completion of the Purchase Order/Contract.</p> <p>c) In case the contractor fails to furnish the security deposit within the specified date or extended due date, the Purchase Order/Contract shall be cancelled, and the EMD, if any, made earlier shall be forfeited, and, in addition appropriate penal action may also be considered.</p> <p>d) After the Purchase Order/Contract is successfully executed in all respects, the Bank Guarantee towards Security Deposit may be discharged and retained amount and / or EMD refunded to vendors.</p> <p>e) In the event of non-execution of the Purchase order/Contract or breach of any terms and conditions of the Purchase Order, the Security</p>	

<p>Deposit shall be forfeited.</p>	
<p>6. Warranty / Guaranteed Service Life :-&gt;The DG Set and accessories shall be guaranteed for satisfactory operation for a period of 24 months from the date of commissioning and acceptance or 5000 running hours from the date of commissioning and acceptance whichever is earlier. Any defects noticed during this period shall be rectified by the contractor free of cost.</p> <p>The contractor shall indicate the type of records to be maintained so that the warranty claims if any are honoured by the manufacturer.</p> <p>. Response Time:</p> <p>Vendor shall attend reported calls within maximum of 24 hours of receipt of a call from purchase in case of fault in the lift.</p> <p>In case break down is not attended within the specified time, the down time compensation at the rate of 0.5% of contract value per day of will be recovered from vendor payment.</p>	
<p>7. Training:</p> <p>Vendor shall provide basic and advanced operator training for SCL personals (minimum 04 persons) at OEM works on entire system.</p>	

<p>8. Warranty Replacements:</p> <p>All replacement parts during the warranty period shall be supplied by the Contractor, free of cost on DDP (Delivery Duty paid) basis with freight and insurance upto Purchaser site at S A S Nagar Punjab and customs duty applicable in India to the Contractor account including compliance with the customs procedure in India. The indigenous replacement parts, if any, shall be supplied by the Contractor free of cost on F O R Purchaser site at S A S Nagar Punjab basis.</p>	
<p>9. TERMS OF PAYMENT IN CASE OF OVERSEAS SUPPLIERS:</p> <p>Being a Department of the Government of India the normal terms of payment are by Sight Draft. The payment shall be remitted as under:</p> <p>90% of the value of the materials supplied shall be paid within 30 days of the receipt of the materials at purchaser site and the balance 10% amount along with 100% installation charges shall be payable on successful installation, commissioning and acceptance of the entire project at Purchasers site against a Performance Bank Guarantee .</p> <p>In the event of the Contractor not being able to provide the Performance Bank Guarantee the payment of balance 10 percent amount shall be made after the expiry of the warranty period.</p> <p>Indian agent remuneration/service charge shall be payable by the Purchaser directly to the Indian agent in Indian Rupees based on T T buying rate of exchange prevailing on the date of placement of</p>	

<p>purchase order within 30 days of acceptance of equipment at purchaser site.</p> <p>The Sight Draft/Letter of Credit will be operative on presentation of the under mentioned documents :</p> <p>a) Original Bill of Lading / Airway Bill</p> <p>b) Commercially certified invoices describing the stores delivered, quantity, unit rate and their total value, in triplicate. The invoice should indicate the discounts if any and Agency Commission separately.</p> <p>c) Packing List showing individual dimensions and weight of packages.</p> <p>d) Country of Origin Certificate in duplicate wherever applicable.</p> <p>e) Test Certificate.</p> <p>f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.</p> <p>g) Warrantee and guarantee Certificate/s as applicable.</p>	
<p>10. TERMS OF PAYMENT IN CASE OF INDIGENOUS SUPPLIER[S]:</p> <p>The payment shall be remitted as under:</p> <p>90% of the value of the materials supplied shall be paid within 30 days of the receipt of the materials at purchaser site and the balance 10% amount along with 100% installation charges shall be payable on</p>	

<p>successful installation, commissioning and acceptance of the entire project at Purchasers site against a Performance Bank Guarantee .</p> <p>In the event of the Contractor not being able to provide the Performance Bank Guarantee the payment of balance 10% amount shall be made after the expiry of the warranty period.</p> <p>While the purchaser bank charges shall be borne by the purchaser, the contractor shall bear the bank charges payable to his banker including the charges towards advising/amendments/ commissions etc.</p>	
<p><b>11. VALIDITY:</b></p> <p>The tender must be valid for a minimum period of 120 days from the date of opening of Technical bid and 90 days after opening of Price bid.</p> <p>The tender where the validity period is shorter than the period specified in the tender enquiry shall be excluded from the procurement process.</p>	
<p><b>12. Quantity Variation:</b></p> <p>The quantities indicated against each items in the Bill of Quantities (BOQ) are indicative and are for the purpose of bidding only. Variation in quantities up to +25 percent shall be carried out by the contractor on the agreed/Purchase order (PO) rates and terms &amp; conditions as in</p>	

<p>the purchase order (PO).</p>	
<p><b>13. GUARANTEED TIME DELIVERY :</b></p> <p>The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.</p>	
<p><b>14. Extra Items:</b></p> <p>In case of extra items (that are completely new and are in addition to the items contained in the contract), the contractor may claim rates supported by proper analysis and purchaser engineer-in charge of the work shall after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of market rates and the contractor shall be paid in accordance with the rates so determined. The contractor(s) profit &amp; OH shall be factored in the rate analysis @ 15%.</p>	
<p><b>15. MODE OF DESPATCH:</b></p> <p>Stores should be despatched through Indian Flagged Vessel / Air India or through any other Agency nominated by the purchaser whose contact details shall be indicated in the purchase order.</p>	

<p>16. PORT OF ENTRY:</p> <p>IGI Airport New Delhi.</p>	
<p>17. CONSIGNEE:</p> <p>Purchase and Stores Officer (Stores),</p> <p>Semi Conductor Laboratory</p> <p>Sector 72 S.A.S. Nagar (Mohali) Punjab</p> <p>India 160 071.</p>	
<p>18. SHIPPING MARKS:</p> <p>The mark on the shipping documents such as invoice bill of lading and on the packages should be as follow:</p> <p>PURCHASE ORDER NO.</p> <p>DATED</p> <p>GOVERNMENT OF INDIA</p> <p>DEPARTMENT OF SPACE</p> <p>SEMI-CONDUCTOR LABORATORY</p> <p>DESTINATION: SECTOR 72 S A S NAGAR (MOHALI) PUNJAB INDIA.</p>	

<p><b>19. INSTALLATION AND COMMISSIONING :</b></p> <p>Installation commissioning and demonstration of performance of the tendered stores as per Purchaser tendered specifications shall be carried out by the Contractor at Purchaser site at S A S Nagar Punjab India.</p> <p>The Contractor shall provide in advance guidelines for preparation of the installation site and list of items to be supplied by Purchaser during installation.</p> <p>On receipt of intimation from the Purchaser the Contractor shall depute its engineer(s) to Purchaser site within two weeks to carry out installation and commissioning and will demonstrate the functionality of the tendered equipment to Purchaser specifications as per mutually agreed acceptance procedure. The Contractor shall be responsible for any loss/damages sustained due to delay on the part of the Contractor to send its engineer for installation and commissioning.</p> <p>Failure to commission the tendered equipment successfully shall entitle Purchaser to full refund of the payment made and the interest thereon. Decision regarding successful installation and commissioning shall rest solely with the Purchaser.</p>	
<p><b>20. REPLACEMENT :</b></p> <p>If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth</p>	



<p>particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the purchaser agrees the price towards replacement items shall be paid by the purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.</p>	
<p><b>21. REJECTION:</b></p> <p>In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications the purchaser shall either reject the stores or request the Contractor in writing to rectify the same. The Contractor, on receipt of such notification shall either rectify or replace the defective stores free of cost to the purchaser. If the Contractor fails to do so the purchaser may at his option either :</p> <p>a) replace or rectify such defective stores and recover the extra cost so involved from the Contractor or</p> <p>b) terminate the Contract for default as provided in this tender document.</p>	
<p><b>22. EXTENSION OF TIME :</b></p> <p>If the completion of supply of stores is delayed due to reason of force</p>	

<p>majeure such as acts of god, acts of public enemy, acts of Government fires floods epidemics quarantine restriction strikes freight embargoes etc., the Contractor shall give notice within 15 days to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice after verification, if necessary may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.</p>	
<p><b>23. DELAY IN COMPLETION/LIQUIDATED DAMAGES:</b></p> <p>If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof the purchaser shall recover from the Contractor as liquidated damages a sum of one half of one percent (0.5 percent) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 percent) of the Contract price of the unit or units so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time the stores will be considered as delayed until such time as the missing parts are delivered. Delivery of stores shall be complete on Installation commissioning Testing and Acceptance.</p>	
<p><b>24. INSPECTION AND ACCEPTANCE TEST:</b></p> <p>The Purchasers representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractors premises the material and workmanship of all stores to be</p>	

<p>supplied under this Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the purchasers representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractors premises.</p> <p>Such inspection examination and testing shall not release the Contractor from the obligations under this Contract.</p> <p>For tests on the premises of the Contractor or of any of his sub-Contractors, the Contractor shall provide free of cost assistance labour material, electricity fuel and instruments as may be required or as may be reasonably needed by the purchasers representative to carry out the tests efficiently.</p> <p>When the stores have passed the specified test the purchaser representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the purchaser as may be required.</p>	
<p>25. Vendor shall abide by all labour laws, rules and regulations, which are prevailing and as enforced from time to time and SCL shall not be responsible for any accident or mishap during the course of the contract to any of engineer / labour employed by the vendor. Vendor shall also ensure that the statutory obligations with regards to the employment of labour under law are complied properly and timely.</p>	
<p>26. ADDRESS OF INDIAN AGENT: if any:</p>	

27. PACKING:

a) The Contractor wherever applicable shall pack and crate all stores for sea /air/road shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road rail air or sea. The Contractor shall be held responsible for all damages due to improper packing.

b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.

c) The Contractor shall notify the purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.

d) The Contractor shall give complete shipment information concerning the weight size content of each packages etc.

e) Trans shipment of equipment shall not be permitted except with the written permission of the purchaser.

f) Apart from the despatch documents negotiated through Bank the following documents shall also be airmailed to the purchaser within 7 days from the date of shipment by sea and within 3 days in case of air consignments:

i) Commercial Bill of Lading / Air Way Bill / Post parcel Receipt. (Two non negotiable copies)

<p>ii) Invoice (3 copies)</p> <p>iii) Packing List (3 copies)</p> <p>iv) Test Certificate (3 copies)</p> <p>v) Certificate of Origin wherever applicable.</p> <p>The Contractor shall also ensure that one copy of the packing list is enclosed in each case.</p>	
<p>28. ARBITRATION:</p> <p>If at any time any question, dispute or difference whatsoever shall arise between the purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question dispute or difference and the same shall be referred to the adjudication of two arbitrators one to be nominated by purchaser other by a Contractor and in the event of any difference of opinion the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However the venue of such arbitration should be in India.</p> <p>In case of dispute arises with domestic/Indian suppliers the applicable Arbitration procedure shall be as per Indian Arbitration &amp; Conciliation</p>	

Act, 1996.	
39. Any Other Term:	

**Supporting Documents from Vendor**

**Attachment - I:**

**Attachment - II:**

**Price Bid Form**

Item Description	Slab Range	Qty	UOM	Currency	Unit Price	Total Price
Supply of 500 kVA, 415 V, 50 Hz, 3 phase, 4 wire diesel generator set with Engine controller, acoustic enclosure etc. detailed technical specifications as	-	1	Set	-	-	-

per attached item specifications Part II. Engine Make: Cummins /Perkins /Volvo penta /MTU /Caterpillar. Alternator Make: STAMFORD-AVK /LEROY SOMER/CROMPTON GREAVES.						
Supply of suitable size minimum 10 inch dia of Class "B" MS exhaust pipe with accessories like flanges, bends, etc. required for proper installation of 500kVA DG set exhaust pipe detailed as per PART-II: DG set installation.	-	20	MTR	-	-	-
Supply of accessories for	-	150	Kg	-	-	-

<p>free standing GI support structure for the exhaust pipes with approx. dimensions 75x75x5mm for main supports,50x50x5 mm for cross supports for proper installation of GI support structure including foundation as per applicable norms for 500kVA DG set.Note: Item includes supply of accessories for exhaust pipe GI support structure and foundation.</p>						
<p>Supply of Mineral wool lagging and aluminium sheet for cladding over exhaust pipe outside DG set</p>	-	20	MTR	-	-	-



<p>exhaust dual insulated with layer of 75mm thick mineral wool(96kg/m3 density) insulation wrapped in chicken mesh and 24 gauge aluminium sheet for clading including all supporting materials required for proper installation.</p>						
<p>Supply of Mineral wool lagging and aluminium sheet for cladding over Residential or Hospital grade silencer outside DG set exhaust dual insulated with layer of 75mm thick mineral wool(96kg/m3</p>	-	1	Set	-	-	-

density) insulation wrapped in chicken mesh and 24 gauge aluminium sheet for clading including all supporting materials required for proper installation.						
Supply of Battery charger with SCR control with 12V & 24 V tapping""s complete with input MCB & output MCB terminals with controls and Ammeter, Voltmeter and indication lamps including all accessories and interconnections along with stand as per applicable standards.Make:	-	1	No.	-	-	-

Any Reputed make with prior approval from SCL .						
Supply of 3.5Cx300 sq.mm Aluminium conductor, XLPE insulated, extruded PVC inner sheath, flat strip or wire armoured and overall PVC outer sheathed 1.1 KV grade, as per IS 7098 Part I with latest amendments The cable shall bear ISI mark. Make: Finolex /Havells / KEI/ Polycab/RPG	-	100	MTR	-	-	-
Supply of 2Cx2.5sq.mm sq.mm Copper conductor, XLPE insulated 1.1 KV	-	50	MTR	-	-	-

grade cable as per IS 7098 Part I with latest amendments The cable shall bear ISI mark. Make: Finolex/Havells/KEI/ Polycab/RPG						
Supply of 19Cx2.5sq.mm sq.mm Copper conductor, XLPE insulated, flat strip or wire armoured 1.1 KV grade cable as per IS 7098 Part I with latest amendments The cable shall bear ISI mark. Make:Finolex /Havells/KEI/ Polycab/RPG	-	50	MTR	-	-	-
Supply of indoor end termination with brass compression	-	4	Set	-	-	-

<p>gland and aluminium lugs for 3.5Cx300 mm<sup>2</sup> mm<sup>2</sup> size of XLPE insulated ,PVC sheathed armoured aluminium conductor cable including supply of cable gland, lugs, neoprene bushes and other materials and tools required for proper installation.Make: Dowells/Commet/Hex</p>						
<p>Supply of indoor end termination with brass double compression gland and copper lugs for 19Cx2.5 mm<sup>2</sup> size of XLPE insulated ,PVC sheathed armoured copper</p>	-	2	Set	-	-	-

conductor control cable including supply of cable gland, lugs, neoprene bushes and other materials and tools required for proper installation. Make: Dowells/Commet/Hex						
Supply of indoor end termination with brass double compression gland and copper lugs for 2Cx2.5 mm <sup>2</sup> size of XLPE insulated & PVC sheathed Copper conductor cable including supply of cable gland, lugs, neoprene bushes and other materials and tools required for proper	-	2	Set	-	-	-

installation.Make: Dowells/Commet/ Hex						
Supply of Earth station with copper earth plate 600 mm X 600 mm X 3.15 mm thick including accessories like medium class ISI marked GI pipe for watering,etc. required for proper installation. complete as required.Note: Earth plate shall be electrolytic tinned copper only.	-	2	No.	-	-	-
Supply of Earthing pit with GI Earth Pipe 4.5m long, 40mm dia along with the accessories like	-	2	No.	-	-	-

medium class ISI marked GI pipe for watering,etc. required for proper installation. complete as required.						
Supply of 25mm x 3 mm Copper strip including supply of MS/Aluminium spacers, saddles, welding with all fixing materials required for proper installation.	-	25	MTR	-	-	-
Supplying of 50x6 mm size GI Strip for earthing along with required accessories including supply of MS/Aluminium spacers, saddles, welding with all fixing materials	-	25	MTR	-	-	-



required for proper installation.						
Installation, Testing and commissioning of 500 kVA DG set comprising of engine and alternator with control panel and acoustic enclosure and all accessories on the base frame to be installed on foundation including installation of battery charger, battery and fuel tank, Testing and commissioning as per relevant IS specifications and as directed by Engineer-in-charge, complete as required and as per attached	-	1	Set	-	-	-

specifications PART-II.						
Unloading the DG set along with accessories with crane on to the foundation with necessary tools and labour as per the requirement.	-	1	Set	-	-	-
Load testing of DG set including supply of all consumables (diesel,lubricating oil etc.) and heater/water load at site for testing for continuous (12 hrs)trouble free operation for DG set complete as required for conducting load test. Note : Vendor shall arrange load for testing ,Load will	-	24	Bot	-	-	-

not be provided by SCL.						
Installation of Class ""B"" MS exhaust pipe with accessories for exhaust from the exhaust outlet to the top of building complete as required for exhaust pipe.	-	20	MTR	-	-	-
Installation of free standing GI support structure for the exhaust pipes applicable norms and civil works including one coat of red oxide and two coats of synthetic enamel paint of approved shade with all materials and labour required for the work as required.	-	1	Lot	-	-	-

Installation of Mineral wool lagging and aluminium sheet cladding over exhaust pipe outside DG set exhaust including all support as required including all materials and labour.	-	20	MTR	-	-	-
Installation of Mineral wool lagging and aluminium sheet cladding over Residential or Hospital grade silencer outside DG set exhaust including all support as required including all materials and labour.	-	1	No.	-	-	-
Installation of Battery charger	-	1	No.	-	-	-

including interconnections earthing, testing and commissioning as per the requirement.						
Laying of 3.5Cx300 sq.mm Aluminium conductor, XLPE insulated, extruded PVC inner sheath, flat strip or wire armoured and overall PVC outer sheathed 1.1 KV grade cable direct inground including excavation, sand cushioning, protective brick covering and refilling the trench etc. as required.	-	100	MTR	-	-	-
Laying of 2Cx2.5sq.mm	-	50	MTR	-	-	-

sq.mm Copper conductor, XLPE insulated 1.1KV grade cable direct inground including excavation, sand cushioning, protective brick covering and refilling the trench etc. as required.						
Laying of 19Cx2.5sq.mm sq.mm Copper conductor, XLPE insulated, flat strip or wire armoured 1.1 KV grade cable direct inground including excavation, sand cushioning, protective brick covering and refilling the trench etc. as required.	-	50	MTR	-	-	-

Making indoor end termination with brass compression gland and aluminium lugs for 3.5Cx300 mm <sup>2</sup> mm <sup>2</sup> size of XLPE insulated ,PVC sheathed armoured aluminium conductor cable as required.	-	4	Set	-	-	-
Making indoor end termination with brass double compression gland and copper lugs for 19Cx2.5 mm <sup>2</sup> size of XLPE insulated ,PVC sheathed armoured copper conductor control cable as required.	-	2	Set	-	-	-
Making indoor end termination	-	2	Set	-	-	-

with brass double compression gland and copper lugs for 2Cx2.5 mm <sup>2</sup> size of XLPE insulated & PVC sheathed Copper conductor cable as required.						
Installation of Earth station with copper earth plate 600 mm X 600 mm X 3.15 mm thick including accessories at a depth of minimum 4.5mtr connecting with 50x6 mm copper strip upto earthing chamber and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.	-	2	Set	-	-	-



with charcoal/ coke and salt as required as per applicable standards with latest ammendments as required.						
Making Earthing pit with GI Earth Pipe 4.5m long, 40mm dia along with the masonry works at a depth of minimum 4.5mtr, connecting pipe upto earthing chamber and providing masonry enclosurewith cover plate having locking arrangement and watering pipeetc. with charcoal/ coke and salt as required as per	-	2	Set	-	-	-

applicable standards with latest ammendments as required.						
Installation of of 25mm x 3 mm copper strip including fixing of MS/Aluminium spacers, saddles, welding with all fixing materials required and when laid inside the building and inclusive of excavation and refilling of earth when laid outside the building and tinning of all joints and terminations, interconnections with earth pit and equipment, terminations/ interconnections in an approved	-	25	MTR	-	-	-

manner as per standards with latest amendments as required.						
Laying of 50x6 mm size GI Strip for earthing along with required accessories including fixing of MS/Aluminium spacers, saddles, welding with all fixing materials required and when laid inside the building and inclusive of excavation and refilling of earth when laid outside the building and tinning of all joints and terminations, interconnections with earth pit and equipment, terminations/	-	25	MTR	-	-	-

interconnections in an approved manner as per standards with latest amendments as required.						
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Break-up of other taxes and other costs should be specified in respective narration columns.

Sum of these Break-up values should be specified in respective value columns.