

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

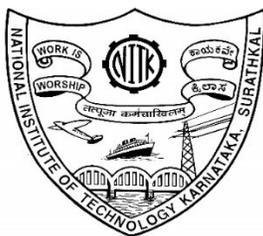
POST-SRINIVASNAGAR, MANGALURU – 575 025 (D K)
CENTRAL RESEARCH FACILITY

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Website: http://www.nitk.ac.in

**TENDER DOCUMENT**

Tender Notification No: NITK/CRF/3PH-GEN/04

Date: 01/07/2022

Name of Goods	500 KVA 3 Phase Diesel Generator with AMF Panel
The estimated amount put to Tender	₹ Rs. 50,00,000/- (Rupees fifty lakhs only) (Including GST) (Refer Section 1B,37)
EMD Amount (2% of estimated amount)	Rs. 1,00,000/-
Time for Supply of item	40 days
Date, Time & Venue of Pre-Bid Conference	NA (Refer Section 1 B, Clause No. 35)
Bid Document Download Start Date	01/07/2022@ 5.00 p.m.
Clarification Start Date	01/07/2022@ 5.00 p.m.
Clarification End Date	07/07/2022 @ 11.00 a. m.
Online Bid Submission Start Date	01/07/2022@ 5.00 p.m.
Online Bid Submission End Date	28/07/2022 @ 10.00 a.m.
Address for Submission of Tender	https://eprocure.gov.in/
Date of opening technical bid	29/07/2022 @ 11.00 a. m.
Contact Details of Buyer	DR. P. Parthiban, Ph. No 9019153775 E-mail ID: parthiban@nitk.edu.in
Purchase officer Name and Contact(Related to purchase inquiry)	Superintendent (purchase) Phone: +91-824-2473014,3114 Email: supdt-purchase@nitk.edu.in

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Tender Notification No NITK/CRF/3PH-GEN/04**Date: 01/07/2022****NOTICE INVITING e-TENDER (e-NIT)**

The National Institute of Technology Karnataka, Surathkal (in short – NITK, Surathkal) is an Institute Of National Importance under Ministry of Education, Govt of India imparting Technical Education and engaged in Research Activities.

Online Tenders(<https://eprocure.gov.in/>) are invited for the following items in **two cover systems** (i.e., Technical bid and financial bid) subject to the following terms and conditions, from the reputed manufacturers or its authorized dealers so as to reach this office on or before scheduled date and time. The tender (Technical bid) will be opened online on the due date as mentioned. Bidders can verify their bid status through the online portal <https://eprocure.gov.in/>. The financial bid of only such bidders whose technical bid is accepted shall be opened on the same day or later pre-informed date.

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Estimated Cost	₹ Rs. 50,00,000/- (Rupees fifty lakhs only) (Including GST) (Refer Section 1B,37)
EMD Amount (2% of estimated amount)	Rs. 1,00,000/-
Time for completion of Supply after Placing Purchase Order	40 days
Date, Time & Venue of Pre-Bid Conference	NA (Refer Section 1 B, Clause No. 35)
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Address for Submission of Tender	https://eprocure.gov.in/
Date of opening technical bid	29/07/2022 @ 11.00 a. m.
Contact Details of Buyer	DR. P. Parthiban, Ph. No 9019153775 E-mail ID: parthiban@nitk.edu.in

Sd/-
Chairman
Central Research Facility, NITK

SECTION 1 A: Instructions for Online Bid Submission

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submit their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.

REGISTRATION

- 1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link "**Online bidder Enrollment**" on the CPP Portal which is free of charge.
- 2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 3) Bidders are advised to register their valid email addresses and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra, etc.), with their profile.
- 5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- 6) Bidder then logs in to the site through the secured log-in by entering their user ID/password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

- 1) There is various search options built-in in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords, etc. to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents/tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / email in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification/help from the Helpdesk.

PREPARATION OF BIDS

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the documents that need to be submitted. Any deviations from these may lead to the rejection of the bid.
- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with the black and white option which helps in reducing the size of the scanned document.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates, etc.) has been provided to the bidders. Bidders can use the "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for the bid submission process.

Note: My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in the My Documents space, this does not automatically ensure these Documents being part of the Technical Bid.

SUBMISSION OF BIDS

1. Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidder has to select the payment option as "online" to pay the tender fee / EMD as applicable and enter details of the instrument.
4. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white-colored (unprotected) cells with their respective financial quotes and other details (such as the name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.
5. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, the opening of bids, etc. The bidders should follow this time during bid submission.
6. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128-bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric

encryption using a system-generated symmetric key. Further, this key is subjected to asymmetric encryption using buyers/bid openers' public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

7. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

8. Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

9. The bid summary has to be printed and kept as an acknowledgment of the submission of the bid. This acknowledgment may be used as an entry pass for any bid opening meetings.

10. The off-line tender shall not be accepted and no request in this regard shall be entertained whatsoever.

11. All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.

12. Any order resulting from this e-tender shall be governed by the terms and conditions mentioned therein.

13. No deviation from the technical and commercial terms & conditions are allowed.

14. The tender inviting authority has the right to cancel this e-tender or extend the due date of receipt of the bid(s).

ASSISTANCE TO BIDDERS

1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

2) Any queries relating to the process of online bid submission or queries relating to CPP Portal, in general, may be directed to the 24x7 CPP Portal Helpdesk.

SECTION 1B: INSTRUCTION TO BIDDER (ITB)

1. The bid should be submitted in two covers **System-Technical Bid and Financial Bid** through <https://eprocure.gov.in/>
2. **Technical Bid: Documents related to the Technical Bid** should be submitted in PDF format through the E-Tendering portal <https://eprocure.gov.in/>.
3. **The Technical Bid should contain the following documents:**
 - a) Compliance statement of specifications as per **Annexure - 'A'**.
 - b) License certificate for manufacture /supply of the item & Factory license
 - c) Agreements/Purchase Orders/Completion certificates if any, for similar items from other Universities, Institutes, and Government Department/Undertakings/Public sectors the details of such supplies for the preceding three years should be given together with the prices eventually or finally paid with contact details of persons as per **Annexure – 'B'**.
 - d) List of Owner/partners of the firm and their contact numbers (Bidder Information)
 - e) Declaration of abandoned or suspended any awarded service & Blacklist Certificate. **Annexure 'C'**
 - f) Integrity Pact (for procurements above Rs1.0 Crore (Rs10.0 Million). **Annexure 'D'**
 - g) Copy of GST certificate & PAN No.
 - h) Catalog of the Product with detailed product specifications.
 - i) Undertaking that the successful BIDDER agrees to give a Performance Security amounting to 3% of the purchase order value in favor of "The Director, NITK Surathkal".
 - j) A copy of the Balance sheet, Profit & Loss A/c., Trade or Manufacturing A/c for the last 3 years should be enclosed and the turnover must be 30% of the estimated cost.
 - k) Duly filled in the checklist should be submitted along with the Technical Bid.
 - l) The contract form given in Section 5 needs to be submitted.
 - m) EMD must be in the form of Bank Guarantee **Annexure-J** (Fixed Deposit Receipt/Insurance surety bonds/DD/e-Payment mode (through Credit/Debit cards / Net Banking). It will be valid for 180 days from the date of opening of the tender. In case of EMD payment made through E-Payment, UTR Number with details should be uploaded. The firm registered with MSME/NSIC as per MSME procurement policy order 2012 will be exempted from submission of EMD. Intended parties will have to give proof of registration along with their tender. EMD of the unsuccessful bidders shall be refunded without any interest at the earliest after finalization of the purchase of the concerned item.
 - i) The EMD will be returned to the BIDDERS(s) whose offer is not accepted by NITK within one month from the date of the placing of the purchase order(s) on the selected BIDDER(s). In the case of the BIDDER(s) whose offer is accepted the EMD will be returned on submission of Performance Security in the form of Bank Guarantee (BG). However, if the return of EMD is delayed for any reason, no interest/penalty shall be payable to the Bidders.

ii) The successful BIDDER, on the award of contract/order, must send the contract/order acceptance in writing, within 15 days of award of contract/order failing which the EMD will be forfeited.

iii) The EMD shall be forfeited in case a successful BIDDER fails to furnish the Performance Security.

iv) Bidder should prepare the EMD as per the instructions specified in the tender document. The original EMD should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission as specified in the tender documents. The details of the BG/DD/FD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise, the uploaded bid will be rejected.

n) The bidder needs to comply with restrictions under rule No 144 (xi) of GFR (General Financial Rules) 2017 and the clause pertaining to Public Procurement Division Order (Public Procurement no 1,2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 and 24.07.2020 of Dept of Expenditure (DOE), Ministry of Finance). In this Connection Bidder has to submit Self Certification (as per Annexure G or H), depending on the status of the bidder.

o) The bidder needs to submit a Self-certification in line with Make in India, Public Procurement Order No. **P-45021/2/2017-BE-II dt. 15.06.2017, P 45021/2/2017-PP (BE-II) dated 28.05.2018, P-45021/2/2017-PP (BE-II) dated 29.05.2019 and P45021/2/2017- PP (BE – II) dated 16.09.2020 of DPIIT, Ministry of Commerce & Industry**. The Bidder who will not meet this criterion will be rejected in the technical bid. The Self-certification should be provided as per Annexure I.

4. **Financial bid:** The bidders should submit their financial bid as per the format given in Section 4 (A standard BoQ format has been provided with the tender document in the form of an Excel sheet) of the Notice Inviting Tender in the online bid through the e-Tendering portal <https://eprocure.gov.in/>. After evaluation of technical bid, the technically successful bidder shall be intimated to witness the opening of their financial bid along with the date, time and venue through e-mail. The financial bid of only those bidders will be opened who are declared "Technically Successful or Technically Responsive".

5. **Bid Evaluation:**

On the due date, the Technical bids will be opened and referred to the Purchase Committee which is duly constituted by the Director, NITK. The committee will go through the technical aspects of the tender and recommend shortlisted firms. The recommendation of the committee is final and binding on all the parties. The committee may visit the manufacturing site to assess the capabilities to manufacture the tendered items as per the specifications. In case of any remarks/default noted, the Company will be debarred from competing for bids in our esteemed Institute for a period of one year from the date of occurrence of such breach.

6. **Quoting of Price(s):**

a. The Indian bidder should quote firm prices in the Indian rupee only unless otherwise specified elsewhere in this tender. Prices quoted in any other currency shall not be considered.

7. The Bid will be accepted only from the manufacturers (OEM) or its authorized supplier.
8. **The Institute reserves the right to visit the factory before or after the issue of supply order to satisfy itself regarding the quality of production. In case of any remarks /default noted,** the Company will be debarred from competing for bids in our esteemed Institute for a period of one year from the date of occurrence of such breach.
9. **The item to be used is strictly according to the specification and subject to test by the Institute/concerned authorities. It must be delivered and installed in good working condition.**
10. The incomplete or conditional tender will be rejected.
11. The Institute reserves the right to cancel at any time after acceptance of the tender with a notice. The Supplier shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which might have derived from the execution of the supply.
12. **Performance Security:** The successful bidder shall deposit performance security of 3% of the quoted price in the form of Bank Guarantee (**ANNEXURE -F**) / Demand Draft / Fixed Deposit Receipt of any scheduled bank drawn in favour of **The Director, NITK Surathkal, Mangaluru** payable at Mangaluru. In case the bidder fails to deposit the said Performance Security within the stipulated period, including the extended period if any, the Earnest Money Deposited by the bidder shall be forfeited automatically without any notice. Please note the following points:
 - a) **Successful bidder should submit performance Security as prescribed above to the purchase Section, NITK Surathkal, on or before 30 days from the date of issue of order acknowledgment.**
 - b) Performance Security shall be for the due and faithful performance of the contract and shall remain binding, notwithstanding such variations, alterations for extensions of time as may be made, given, conceded, or agreed to between the successful bidder and the purchaser under the terms and conditions of acceptance to tender.
 - c) The successful bidder is entirely responsible for the due performance of the contract in all respects according to the terms and conditions of the tender.
 - d) The validity of the Performance Security must cover the warranty period plus two months.
13. **The validity of bids:** The rate quoted should be valid for a minimum of 180 days. No claim for escalation of the rate will be considered after opening the Tender. The bid validity date will start from the last date of bid submission (Including date corrigendum)
14. **Warranty/Guarantee & On-site skill support:** On-site comprehensive warranty will be effective from the date of successful installation and commissioning. The OEMs/Authorized Distributors and Dealers must attach a certificate of sales and service facilities, escalation support for on-call service or station engineer, etc.
15. **Clarification of Tender Document:** Through pre-bid Conference (Under Section 1, clause No. 35).

- 16. Amendment of Tender document:** At any time before the last date for receipt of bids, Institute may for any reason, whether at its initiative or in response to a clarification requested by a prospective bidder, modify the Tender document by an amendment. Further, Institute may at its discretion extend the last date for the receipt of bids.
- 17.** The bids shall be written in the English language and any information printed in another language shall be accompanied by an English translation, in which case for the purpose of the interpretation of the bid, the English translation shall govern.
- 18.** The Institute reserves the right of accepting any bid other than the lowest or even rejecting all the bids. The decision of the Purchase Committee is final in all matters of tender and purchase.
- 19. Cancellation of Tender:** Notwithstanding anything specified in this tender document, NITK Surathkal in its sole discretion, unconditionally and without having to assign any reasons, reserves the rights:
- a) To accept OR reject the lowest tender or any other tender or all the tenders.
 - b) To accept any tender in full or in part.
 - c) To reject the tender offer not conforming to the terms of the tender.
 - d) To give purchase preference to Public Sector undertakings when applicable as per Govt. Policy/ Guidelines.
- 20. Delivery Period:** The Delivery Period/Time shall be deemed to be the essence of the Contract and delivery must be completed not later than such date(s). If the Supplier does not perform its obligations within the Delivery Period/Date mentioned in the Contract, the same would constitute the breach of the Contract and the Institute shall have the right to cancel or withdraw the Contract for the unsupplied portion after the expiry of the original or extended delivery date or period stipulated in the Contract. Such cancellation of the contract on account of non -performance by the Supplier would entitle the Buyer to forfeit the EMD/Performance Security besides other actions such as debarment from the Institute as per GFR 2017.
- 21. Liquidated Damages:** Timely delivery is the essence of the contract and hence if the Supplier fails to deliver Goods within the original/extended delivery period(s) specified in the contract, the Institute will be entitled to deduct/recover the Liquidated Damages for the delay, unless covered under Force Majeure conditions aforesaid, **@ 1% per week or part of the week of the delayed period** as pre-estimated damages not exceeding 5% of the contract value without any controversy/dispute of any sort whatsoever.
- 22. Terms of Payment:**
- a. Payment within 30 days from the date of delivery, installation and acceptance certificate of concerned Department/Section/Purchase Section.
 - b. Payment shall be made by Cheque or such other mode/electronic fund transfer offered by the Bank. NITK, Surathkal will not pay advance payment to the party. Any request for Advance payment will be

rejected summarily. In case if it is necessary, the advance payment will be paid strictly against Bank Guarantee only.

- c. Payment will be made by Standard Payment terms and conditions of NITK, Surathkal as per tender document only. Any request for a change in payment terms and conditions will not be accepted.
- d. If the above conditions are not acceptable then tender will be rejected.

23. Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bid as to the nature of the installation 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 bidder 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. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the installation to be done and local conditions and other factors having a bearing on the execution of the bid.
24. If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the bidder.
25. The rate quoted by the bidder **shall be firm throughout the contract** period and there shall be no revision of the rates for any reasons whatsoever. It should be clearly understood that any claim for changes will not be entertained in any case once the bids are opened.
26. **One bid per bidder:** Each bidder shall submit only one bid either by himself or by representing a firm.
27. **Cost of bid:** The bidder shall bear all costs associated with the preparation and submission of his bid. The Institute in no case shall be responsible or liable for those costs.
28. The bidder shall not make or cause any alteration, erasure, or obliteration to the text of the tender document.
29. The Institute will declare a bidder ineligible, either indefinitely or for a specified period of time, at the sole discretion of the Institute, for the award of contract/ participating in any other tender, if at any time the Institute determines that he has furnished false information/ engaged in corrupt or fraudulent practices.
30. If any overpayment is detected as a result of the post-payment audit, it shall be recovered by the Institute from the Supplier out of his Performance Security.
31. **Determination of successful bidder:** The technically qualified bidder whose offer is evaluated as the **lowest total bid** shall be the successful bidder subject to its meeting the statutory requirements.
32. **Price variation:** The rate quoted by the bidder shall be firm throughout the contract period. No price variation clause applies to this contract.
33. **CANVASSING:**

- a) canvassing in connection with tenders is strictly prohibited and the Tenders submitted by the Tenderers who resort to canvassing shall be liable to rejection.
- b) Subject to the provisions concerning clarification of Bids, no Bidder shall contact the purchase committee on any matter relating to its bid from the time of the bid opening up to the time that the contract is awarded.
- c) Any effort by the Bidder or Bidder's representative however described to influence the purchase committee in any way concerning scrutiny, consideration, evaluation of the Bid(s) or decision concerning award of contract shall entail rejection of Bid and action against the bidder as deemed fit.
- d) The purchase committee will deal with the Bidder on a Principal basis, without involvement in any manner in India or abroad of any agent or consultant or associate or another person howsoever described.

34. Legal Matter: All Domestic and International disputes are subject to Mangaluru Jurisdiction only.

35. Pre-Bid Conference:

- a) All prospective bidders are requested to kindly submit their queries through E-mail to parthiban@nitk.edu.in & cc to office.crf@nitk.edu.in so as to reach the buyer, on or before 11.00 a.m. on 07/07/2022
- b) A Pre-bid Conference shall be held as indicated in Invitation to Bid. All prospective bidders are requested to kindly attend the Pre-bid Conference. In order to facilitate NITK for the proper conduct of the Pre-bid Conference, all prospective bidders are requested to kindly submit their queries through E-mail to the indicated mail address (with Tender No. and Date) so as to reach the Buyer as indicated in Invitation to Bid.
- c) NITK shall answer the queries during the pre-bid conference, which would become a part of the proceedings of the Pre-bid Conference. These proceedings will, in turn, become a part of clarifications/amendments to the bidding documents and would become binding on all the prospective bidders. These proceedings would also be hosted on the NITK website www.nitk.ac.in for the benefit of all prospective bidders. Before formulating and submitting their bids, all prospective bidders are advised to surf through the NITK website after the Pre-bid Conference, in order to enable them to take cognizance of the changes made in the bidding document.
- d) Any Statement made at the pre-bid conference shall not modify the terms of the bidding documents unless such statement is made part of clarification in the proceeding of the Pre-Bid Conference
- e) Only queries formally submitted in advance, will be answered in the pre-bid conference and will become part of the Corrigendum/Amendment.

36. Relaxation for startups, MSEs, Make in India will be as per GOI norms.

37. Estimated price put up in tender is inclusive of all.

38. Abnormally quoted low bid will be liable for rejection as per the OM No.F.12/17/2019-PPD of Department of Expenditure, Ministry of Finance dated 6th February 2020.

SECTION 2: CONDITIONS OF CONTRACT.

1. The supplier should quote the rate for Door Delivery (FOR).
2. The Rate should be quoted in INR only.
3. The item should be landed at NITK Surathkal and this responsibility is with the bidder.
4. No custom duty exemption certificate will be provided from the institute.
5. NITK is a DSIR recognized research organization and hence eligible for concessional / exempted rate of GST @5% (For indigenous items).
6. The rate quoted should be on a per-unit basis. Taxes and other charges should be quoted separately, considering exemptions, if any.
7. The rate quoted should be inclusive of Testing, Commissioning and Installation of Equipment and Training.
8. **Payment:** No advance payment will be made. Payment will be made only after the supply and installation of the item in good and satisfactory condition and receipt of performance security by the supplier.
9. Guarantee and Warranty period should be specified for the complete period conforming to Section 3 of this tender document.
10. The period required for the supply and installation of Equipment should be specified conforming to Section 3 of this tender document.
11. In case of dispute, the matter will be subject to Mangaluru Jurisdiction only.

SECTION 3: SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS

[To be filled up by the Department / Center of NITK, Surathkal]

Item(s) Name to be Procured	: 500 KVA 3 Phase Diesel Generator with AMF Panel
Type (Equipment/Software/Furniture/Others)	: Equipment
Brief Specifications of the Item(s) (Attach Additional Sheet if necessary)	: As Per Annexure 'L'
Quantity	: One
Any other details/requirement	: Attached
Warranty Period (in months)	: 24 months
Delivery Schedule expected after the release of a Purchase order (in Weeks)	: 40 days
Performance Security to be given by Successful Bidder after release of Purchase Order (in Rupees)	: 3% of Purchase Order

SECTION 4 - PRICE BID

[To be used by the bidder for submission of the bid]

Tender Inviting Authority:

Name of Work/Goods/Services:

Contract No:

Name of the Bidder/ Bidding Firm / Company :

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

Number	TEXT #	NUMBER #	NUMBER #	NUMBER	NUMBER	NUMBER	NUMBER #	TEXT #
Sr. No.	Item Description	Quantity	BASIC RATE in Figures To be entered by the Bidder in Rs. P	COST	GST rate in %	GST Amount	TOTAL AMOUNT with Taxes Rs. P	TOTAL AMOUNT In Words
1								
2								
3								
Total in Figures								
Quoted Rate in Words								

SECTION 5:CONTRACT FORM

[To be provided by the bidder in the business letterhead]

1. (Name of the Supplier's Firm) hereby abide to deliver by the delivery schedule mentioned in section 3 tender document for supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in the tender document without any defects and deviations.
3. Warranty will be given for the period mentioned in the tender document and service will be rendered to the satisfaction of NITK, Surathkal during this period.

Signature of the Bidder : _____

Name and Designation: _____

Business Address : _____

Place:

Date:

Seal of the Bidder's Firm

Compliance Statement of Specifications

Annexure –‘A’

Sl.No.	Name of specification/Part/Accessories of tender inquiry	Specifications of the quoted Model / Item	Compliance Whether YES or NO	Deviations if any to be indicated in unambiguous terms

(Add more rows if required)

Signature and Seal of the Bidder

Previous Supply Orders Executed

Name of the firm: _____

Order placed by [Full address of the purchaser]	Order No. and Date	Order Value	Specified Delivery Date	Actual Delivery Date	Remarks indicating reasons for late delivery, if any and justification for the price difference of their supply order and those quoted to us	Has the equipment been installed satisfactorily?	Contact person along with telephone, mobile number, fax, and E-mail address (other Universities, Institutes, and Government Department/Undertakings/Public sectors)

(Add more rows if required)

Signature and Seal of the Bidder

FORMAT OF DECLARATION
(To be submitted on Letterhead)

I/We Mr./Ms. _____, S/o/ of Mr. _____ aged about _____ years, resident of _____
, working as -----(designation) for ----- (name and address of the bidding agency).

I solemnly affirm and the state as under:

1. That I am working as ----- /proprietor of the ----- (name of the firm) and authorized to sign this declaration.
2. That the firm M/s---- (complete address of the firm) has not abandoned or suspended any contract work of any organization/ department so far/ during the previous five financial years.
3. That the firm M/s---- (complete address of the firm) has not been blacklisted/ debarred for competing in tenders by any organization/ department so far/ during the previous five financial years.
4. I solemnly confirm that the facts stated above are true and nothing has been concealed.

Seal and Signature of Bidder

INTEGRITY PACT AGREEMENT

(To be signed by the bidder/same signatory authorized to sign the relevant contact)

This Integrity Agreement is made at Surathkal on this day of20

BETWEEN

National Institute of Technology Karnataka, Surathkal, an Institute of National Importance (under NIT Act -2007) represented through The Registrar, NITK, Surathkal (hereinafter referred as the '**Buyer**, which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

.....

(Name and Address of the Individual/Firm/Company)

Through (Hereinafter referred to as the "Bidder/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its succession and permitted assigns)

Preamble

WHEREAS **NITK Surathkal** has floated the Tender (Hereinafter referred to as "Tender/Bid") and intends to award, underlaid down organizational procedure, contract for "Equipment"

[Hereinafter referred to as the "**Contract**").

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "**Integrity Pact**" or "**Pact**"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this witness as under:

Seal and Signature of the bidder

Registrar, for NITK Surathkal

Article 1: Commitment of NITK Surathkal

i. **NITK Surathkal** commits to take all measures necessary to prevent corruption and to observe the following principles:

(a) No employee of NITK Surathkal, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

(b) NITK Surathkal will, during the Tender process, treat all Bidder(s) with equity and reason. NITK Surathkal will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

(c) NITK Surathkal shall endeavor to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

ii. If NITK Surathkal obtains information on the conduct of any of its employees which is a criminal offense under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, NITK Surathkal will inform the Chief Vigilance Officer and in addition, can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/ Contractor(s)

1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adheres to the highest ethical standers, and report to the Government / Department all suspected acts of **fraud or corruption or Coercion or Collusion** of which it has knowledge or becomes aware, during the tendering process and through the negotiation or award of a contract.

2) The Bidder(s)/Contractor(s) commit himself to take measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contact execution:

a. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contractor to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contractor.

Seal and Signature of the bidder

Registrar, for NITK Surathkal

b. The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into an undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

c. The Bidder(s)/Contractor(s) will not commit any offense under the relevant IPC/PC Act. Further, the Bidder(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as

d. part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

e. The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India if any. Similarly, Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives if any. Either the Indian agent on behalf of the foreign principals or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

f. The Bidder(s)/Contractor(s) will when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers, or any other intermediaries in connection with the award of the Contract.

iii. The Bidder(s)/Contractor(s) will not instigate third persons to commit offenses outlined above or be an accessory to such offenses.

iv. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice **means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce a public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to a justified interest of others and/or to influence the procurement process to the detriment of the Government interests.**

v. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive practices (means the act of obtaining something, compelling action or influencing a decision through intimidation, there or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/her reputation or property to influence their participation in the tendering process).

Seal and Signature of the bidder

Registrar, for NITK Surathkal

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to NITK Surathkal under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidders/Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

1) If the Bidder(s)/Contractor(s), either before awarded or during the execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving a 14-day notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determinate the Contract - if already executed or exclude the Bidders/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. **Such exclusion may be forever or for a limited period as decided by NITK Surathkal.**

2) **Forfeiture of EMD/Performance Guarantee/Security Deposit:** If NITK Surathkal has disqualified the Bidder(s) from the tender process before the award of the Contract or terminate/determinate the Contractor has accrued the right to terminate/determinate the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to NITK Surathkal, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Security of the Bidders/Contractor.

3) **Criminal Liability:** If NITK Surathkal obtains knowledge of the conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of Indian Penal code (IPC)/Prevention of Corruption Act, or if the Principal/Owner has substantive suspicion in this regard, NITK Surathkal will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country conforming to the anti-corruption approach or with Central Government or State Government or any other Central/State Public Enterprises in India that could justify his exclusion from the Tender process.

2) If the Bidder makes an incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/Owner.

3) If the Bidder/Contractor can prove that he has resorted/recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its discretion, revoke the exclusion prematurely.

Seal and Signature of the bidder

Registrar, for NITK Surathkal

Article: 5 Equal Treatment of all Bidder/Contractors/Subcontractors

- 1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidders/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/sub-vendors.
- 2) The Principal/Owner will enter into pacts on identical terms as this one with all Bidders and Contractors.
- 3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed pact between the Principal/Owner and the bidder, along with the Tender, or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6: Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12months after the completion of work under the contractor or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of these pacts as specified above, under it is discharged/determined by the Competent Authority of NITK, Surathkal.

Article 7: Other Provisions

- 1) This Pact is subject to Indian Law, place of performance and jurisdiction is **Mangaluru**, the Headquarters of NITK Surathkal, who has floated the Tender.
- 2) Changes and supplements need to be made in writing. Side agreements have not been made.
- 3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partners holding power of attorney signed by all partners and consortium members. In the case of a Company, the Pact must be signed by a representative duly authorized by board resolution.
- 4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement with their original intentions.
- 5) It is agreed on term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action was taken by the Owner/Principal in accordance with this **Integrity Agreement/Pact or interpretation thereof shall not be subject to arbitration.**

Seal and Signature of the bidder

Registrar, for NITK Surathkal

Annexure –‘E’

Format for Bank Account details of the bidder

Name of the account holder (the bidder)	
Complete address	
Contact number	
Email address	

Bank Account details:

Bank name	
Branch name	
MICR number	
Account type	
Account Number	
Please re-type the Account number again	
IFSC code of the Bank	

I hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold the Institute responsible for this.

I have read the option invitation letter and agree to discharge the responsibility expected of me as a participant under the scheme.

Seal and signature of the bidder.

Certification from the banker:

Certified that the particulars furnished above are correct as per our records.

Seal and signature of the authorized officer of the bank.

ANNEXURE –‘F’

FORMAT FOR PERFORMANCE GUARANTEE BOND

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred)

(TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT MANGALURU OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT MANGALURU OR ANY SCHEDULED BANK (OTHER THAN NATIONALISED BANK) SITUATED AT MANGALURU. BONDS ISSUED BY COOPERATIVE BANKS ARE NOT ACCEPTED.)

To,
Director,
National Institute of Technology Karnataka,
Srinivasnagar P.O., Surathkal
Mangaluru – 575025

LETTER OF GUARANTEE

WHEREAS National Institute of Technology Karnataka (Buyer) has invited Tenders to vide Tender No..... Dt. for purchase of AND WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment/machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of “**The Director, National Institute of Technology Karnataka, Surathkal**” in the form of Bank Guarantee for Rs (**3% (Three percent) of the purchase value**) and valid till **one year or up to warranty period whichever is later** from the date of issue of Performance Guarantee Bond may be submitted within 30 (Thirty) days from the date of Order Acknowledgement as a successful bidder.

NOW, THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document/purchase order/performance of the equipment/machinery, etc. this Bank shall pay to National Institute of Technology Karnataka, Surathkal on demand and without protest or demur Rs (Rupees.....).

This Bank further agrees that the decision of the National Institute of Technology Karnataka, Surathkal (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in the tender document/purchase order shall be final and binding.

We, (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or National Institute of Technology Karnataka, Surathkal (Buyer).

Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed Rs. (Indian Rupees only).
2. This Bank Guarantee shall be valid up to(date) and
3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if National Institute of Technology Karnataka (NITK) Surathkal serve upon us a written claim or demand on or before.....(date).

This Bank further agrees that the claims if any, against this Bank Guarantee, shall be enforceable at our branch office at situated at (Address of local branch).

Yours truly,
Signature and seal of the guarantor:
Name of Bank &Address:
Date:

Instruction to Bank: Bank should note that on the expiry of the Bond Period, the Original Bond will not be returned to the Bank. The bank is requested to take appropriate necessary action on or after the expiry of the bond period.

Annexure -'G'

(Compliance to be submitted in the bidder's letterhead)
(as applicable)

Sub: Compliance to Government of India order OM No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 regarding restrictions under Rule 144 (XI) of the General Financial Rules (GFRs), 2017

Item Name:	
Enquiry No.:	

We M/s. _____ (name of the bidder company) have read the clauses pertaining to the Department of Expenditure's (DoE) Public Procurement Division Order (Public procurement no 1,2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020) regarding restrictions on procurement from a bidder of a country that shares a land border with India.

We hereby certify that **we are not from such a country** and eligible to be considered for this tender.

(Note: Non-compliance of above said Gol Order and its subsequent amendment, (if any), by any bidder(s) shall lead to commercial rejection of their bids by NITK)

For and behalf of _____ (Name of the bidder)

(Signature, date & seal of an authorized representative of the bidder)

Annexure - 'H'

**(Compliance to be submitted in the bidder's letterhead)
(as applicable)**

Sub: Compliance to Government of India order OM No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 regarding restrictions under Rule 144 (XI) of the General Financial Rules (GFRs), 2017

Item Name:	
Enquiry No.:	

We M/s. _____ (name of the bidder company) have read the clauses pertaining to the Department of Expenditure's (DoE) Public Procurement Division Order (Public procurement no 1,2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020) regarding restrictions on procurement from a bidder of a country which shares a land border with India.

We are from such a country which shares a land border with India & have been registered with the Competent Authority as specified in the above-said order. We hereby certify that we fulfill all requirements in this regard and are eligible to be considered.

Evidence of valid registration by the Competent Authority is attached.

(Note: Non-compliance of above said GoI Order and its subsequent amendment, (if any), by any bidder(s) shall lead to commercial rejection of their bids by NITK)

For and behalf of _____ (Name of the bidder)

(Signature, date & seal of an authorized representative of the bidder)

Self-Certification on the letterhead of the company

In line with Government Public Procurement Order No. P-45021/2/2017-BE-II dt. 15.06.2017, P-45021/2/2017-PP (BE-II) dated 28.05.2018, P-45021/2/2017-PP (BE-II) dated 29.05.2019 and P-45021/2/2017-PP (BE-II) dated 16.09.2020, we hereby certify that

.....
(Supplier name) are local supplier meeting requirement of minimum local content % defined in as above orders for the material against Enquiry / Tender No

.....
.....
.....

Details of the location at which local value addition will be made are as follows:

.....
.....
.....

We also understand false declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permitted under law.

Date:
Place:
Mobile no:
Office Telephone No: Email ID:
Office Seal:

Signature:
Name and Designation:

FORMAT FOR EARNEST MONEY DEPOSIT / BID BOND

(To be typed on Non-judicial stamp paper of value Indian Rupees One Hundred)

(TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT MANGALURU OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT MANGALURU OR ANY SCHEDULED BANK (OTHER THAN NATIONALISED BANK) SITUATED AT MANGALURU. BONDS ISSUED BY COOPERATIVE BANKS ARE NOT ACCEPTED)

LETTER OF GUARANTEE

To
Director,
National Institute of Technology Karnataka,
Srinivasnagar P.O., Surathkal
Mangaluru – 575025

IN ACCORDANCE WITH YOUR TENDER for the supply of, M/s..... (hereinafter called the "Bidder") having its Registered Office at, wish to participate in the said bid for the supply.....as an irrevocable Bank Guarantee against Earnest Money Deposit for an amount of Rs. (Rupees.....) valid up to **(180 days from the date of issue of Bank Guarantee)**, is required to be submitted by the bidder as a condition precedent for participating in the said bid, which amount is liable to be forfeited by the Purchaser on (1) the withdrawal or revision of the offer by the bidder within the validity period, (2) Non acceptance of the Letter of Intent/Purchase order by the Bidder when issued within the validity period, (3) failure to execute the contract as per contractual terms and condition within the contractual delivery period and (4) on the happening of any contingencies mentioned in the bid documents.

During the validity of this Bank Guarantee:

We,(Bank name) having the registered office at.....guarantee and undertake to pay immediately on first demand by NITK Surathkal, an amount of Rs..... (Rupees.....)without any reservation, protest, demur and recourse. Any such demand made by theNITK Surathkal shall be conclusive and recourse. Any such demand made by the purchaser shall be binding on the Bank irrespective of any dispute or difference raised by the Bidder.

The Guarantee shall be irrevocable and shall remain valid up to.....(180 days from the date of issue of Bank Guarantee) If any further extension is required, the same shall be extended to such required period on receiving instruction from the Bidder, on whose behalf the is Guarantee is issued.

Notwithstanding anything contained herein:

- * Our liability under this Bank Guarantee shall not exceed Rs..... (Rupees.....).
- * This Bank Guarantee shall be valid up to.....(date).
- * We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee Only and only if you serve upon us a written claim on or before(date).

This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office atsituated at(Address of local branch).

Yours truly,

Signature and seal of the guarantor: Name of Bank:
Address:
Date:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. The bank is requested to take appropriate necessary action on or after the expiry of the bond period

Checklist for BIDDERS

BIDDERS are to indicate whether the following documents are uploaded by striking out the non-relevant option and the relevant technical bid documents should be in order.

Sl. No.	Documents	Content	Document Attached
1	Technical Bid	A signed copy of the tender document should be uploaded	(Yes /No) Pg. No
2		Self-Attested copy of GST & PAN Number	(Yes /No) Pg. No.
3		License certificate for manufacture /supply of the item &Factory license. Registration with EPF and ESI	(Yes /No) Pg. No.
4		Undertaking that the successful BIDDER agrees to give a 3% Performance Security.	(Yes /No) Pg. No.
5		Catalogue of the Product with detailed product specifications.	(Yes /No) Pg. No.
6		Copy of the Balance Sheet	(Yes /No) Pg. No.
7		List of Owner/partners of the firm and their contact numbers (Bidder Information)	(Yes /No) Pg. No.
8		The contract form is given in section 5	(Yes /No) Pg. No.
9		Format of compliance statement of specification as per Annexure-‘A’	(Yes /No) Pg. No.
10		Previous Supply Order as per Annexure-‘B’	(Yes /No) Pg. No.
11		Declaration of abandoned or suspended any awarded service & Blacklist Certificate. Annexure ‘C’	(Yes /No) Pg. No.
12		Integrity Pact. Annexure ‘D’	(Yes /No) Pg. No.
13		Bank details of the bidder. Annexure ‘E’	(Yes /No) Pg. No.
14		EMD FORMAT Annexure ‘J’	(Yes /No) Pg. No.
15		Document as per specification (if any)	(Yes /No) Pg. No.
16		Annexure –‘G’	(Yes /No) Pg. No.
17		Annexure –‘H’	(Yes /No) Pg. No.
18		Annexure –‘I’	(Yes /No) Pg. No.
1	Financial-Bid	Price bid	(Yes /No)

Seal and Signature of the bidder

Detailed Technical Specifications

Diesel Engine:

➤ **Engine rating**

The engine shall be multi cylinders, vertical, 4 stroke cycles, water-cooled, diesel engine developing suitable BHP for giving a prime power output of 500 kVA at 0.8 P.F. at the load terminals of the respective alternators (exclusive of the power requirements of auxiliaries deriving power from the engine) (as per ISO 8528 part- I).

The engines shall be capable for delivering specified prime power rating at variable loads for PF of 0.8 lag with 10% overload available in excess of specified output for one hour in every 12 hours. The average load factor of the engine over a period of 24 hours shall be 0.85 (85%) for prime power output. The engines shall conform to BS 5514/ BS 649/ IS10000/ ISO: 3046 amended up to date. The engines shall be fitted with the following accessories.

- i) Dynamically balanced Fly-wheel.
- ii) Necessary flexible coupling and guard for alternator and engine.
- iii) Air cleaner dry type with replaceable elements.
- iv) Corrosion Inhibitor Coolant, if applicable.
- v) An Electronic speed governor to maintain engine speed at all conditions of load.
- vi) For 500 kVA DG set minimum inbuilt fuel tank capacity should be **990 Ltrs.**
- vii) Residential exhaust silencers with flanges.
- viii) Self-starter 12 / 24 V D.C.
- ix) Battery Charger unit and voltage regulator, required a number of 12 Volts pure lead thin tin plate batteries of Ampere hour rating as recommended by the manufacturer, insulated battery racks with interconnecting leads and terminals. The connection between battery charger and batteries shall be provided with suitable copper leads with lugs etc.
- x) Necessary pumps for lubricating oil, priming of the engine fuel system, etc. as required.
- xi) Exhaust gas turbocharger with aftercooler.
- xii) Lubricating oil cooler.
- xiii) Lubrication oil filters with replaceable elements.
- xiv) Fuel injector.
- xv) Fuel control solenoid.
- xvi) Fuel pump with engine speed adjustment.
- xvii) Necessary excitation control and voltage regulating equipment's.
- xviii) Engine Control Panel fitted and having a digital display for following:
 - (a) Start/stop key switch.
 - (b) Lube oil pressure indication.
 - (c) Water temperature indication.
 - (d) RPM indication.
 - (e) Engine Hours indications.
 - (f) Battery charging indication.
 - (g) Low lube oil trip indication.
 - (h) High water temperature indication.
 - (i) Over speed indication

- xix) Safety controls against low lube oil pressure, high lube oil temperature, high cooling water temperature and fail to start.
- xx) Base frame as per manufacturer's specification including required nos. of anti-vibration cushy foot mountings.
- xxi) A necessary over-speed trip on the engine.
- xxii) Exhaust piping wrapped with mineral wool/rock wool complete with aluminum cladding
- xxiii) Heavy Duty Radiator, radiator fan, and mounting.

All moving parts of the engine shall be mechanically guarded in such manner that a human finger cannot touch any moving part.

Necessary certificate indicating the compliance of the above capacity requirement for the engine model so selected along with compliance of Noise and Emission norms as per latest CPCB guidelines for DG set capacity up-to 1000 kVA, should be furnished from the manufacturers along with the technical bid. However, above 1000 kVA DG set, manufacturers shall furnish certificate that the engine for the DG set complies with the CPCB Emission norms.

1. Governor

1.1 The Governor shall be Electronic type conforming to class A1 and shall be a self-contained unit capable of monitoring speed. This should conform to ISO 3046 / BS 5514 with actuator as per standard design of manufacturer.

1.2 Frequency variation

The engine speed shall be so maintained that frequency variation at constant load including no load shall remain within a band of 1% of rated frequency.

1.3 Fuel System

It shall be fed through engine driven fuel pump. A replaceable element of fuel filter shall be suitably located to permit easy servicing. The daily service tank shall be complete with necessary supports, gauges, connecting pipe work etc. Pipe sealant should be used for sealing all connections. No Teflon tape is to be used.

1.4 Lubricating oil system

It shall be so designed that when the engine starts after a long shut down lubricating failure does not occur. Necessary priming pump for the lube oil circuit as per the recommendation of the manufacturer shall be installed, to keep bearings primed. This pump shall be normally automatically operative on AC/DC supply available with the set.

1.5 Starting System: -

This shall comprise of necessary set of pure lead thin tin plate batteries 12 V D.C. and suitable starter motors, axial type gear to match with the toothed ring on the fly wheel. Battery capacity shall be suitable for meeting the needs of the starting system as well as the requirements of control panel, indications and auxiliaries such as priming pump etc. as applicable. The scope shall cover all cabling, terminals, including initial charging etc. The system shall be capable of starting the DG Set within 20-30 sec, even in winter condition with an ambient temperature down to 0⁰ C.

1.6 Piping work

All pipe lines and fittings and accessories required inside the engine room /enclosure and outside for exhaust piping shall be provided by the contractor. This shall include necessary flexible pieces in the exhaust, fuel, lube oil and water as are necessary in view of the vibration isolation requirement in the installation. Piping of adequate size shall be used for lube. Oil of the materials as per manufacturer's standard. However, only MS pipes for the exhaust and fuel oil lines shall be used.

The pipe work shall be inclusive of all fittings and accessories required such as bends, reducers, elbows, flanges, flexible connections, necessary hardware's etc. The installation shall cover clamps, supports, hangers etc. as are necessary for completing the work.

1.7 Common bed plate

Engine and alternator shall be coupled by means of flexible coupling as per manufacturer's standard design and both units shall be mounted on a common bed plate together with all auxiliaries to ensure perfect alignment of engine and alternator with minimum vibrations. Fabricated bed plate will be acceptable. The bed plate shall be suitable for installation on suitable anti-vibration mounting system.

1.8 Exhaust System

1.8.1 Exhaust piping: All MS pipes for exhaust lines shall be conforming to relevant IS. The runs forming part of factory assembly on the engine, flexible connections up to exhaust silencer shall be exclusive of exhaust piping item. The work includes necessary cladding of exhaust pipe work using mineral wool/ glass wool/ rock wool of 50 mm thick & aluminum cladding (0.80 mm thick) for the complete portion. The exhaust pipe work includes necessary flexible vibration damper etc. to avoid any load & stress on turbo charges / exhaust manifold. The exhaust pipe support structure shall be got approved by engineer -in-charge before execution.

1.8.2 Exhaust system should create minimum back pressure.

1.8.3 Number of bends should be kept minimum and smooth bends should be used to minimize back pressure.

1.8.4 Pipe sleeve of large dia should be used while passing the pipe through concrete wall & gap should be filled with 'felt lining.

1.8.5 Exhaust flexible shall have its free length when it is installed.

1.8.6 'Class B' MS pipes and long bend / elbows should be used.

1.8.7 The exhaust outlet should be in the direction of prevailing winds and should not allow exhaust gases to enter air inlet / windows etc.

1.8.8 When tail end is horizontal, 45 Degree bevel cut should be given at the end of the pipe to avoid rain water entry into exhaust piping.

1.8.9 Optimum Silencer Location: Location of the silencer in exhaust system has very definite influence on both reduction of noise and back pressure imposed on the system.

1.8.10 Care should be taken to ensure that no carbon particle emitted due to exhaust leaking enters and deposits on alternator windings and on open connections.

1.8.11 Support to exhaust piping: Exhaust piping should be supported in such manner that load of exhaust piping is not exerted to turbo charger/exhaust manifold.

2. Air System

It is preferable to provide vacuum indicator with all engines to indicate choked filter. Maximum air intake restrictions with clean and choked filters should be within prescribed limit as per OEM / manufacturer recommendation for particular model of the engine. Genset should be supplied with medium duty air cleaners.

3. Cooling System

I. System should be designed for ambient temperature of 40 Deg.C.

II. Coolant should be used mixed with additive (in suitable proportion) as per recommendation of OEM / Manufacturer for various engine models.

Radiator fan flow should be free from any obstruction and providing additional exhaust duct for radiator air (As shown in the drawing)

4. Alternator

4.1. Synchronous Alternator: Self excited, screen protected, self-regulated, brush less alternator, Horizontal foot mounted suitable for the following:

Rated PF	0.9 (lag)
Rated voltage	415 Volts
Rated frequency	50 Hz
No. of phases	3
Enclosure	SPDP
Degree of protection	IP-23
Ventilation	Self-ventilated air cooled
Ambient Temperature	40° C maximum
Insulation class	H
Temperature Rise	Within class H limits at rated load
Voltage regulation	+/- 1%
Voltage variation	+/- 5%
Overload duration/capacity	10% for one hour in every 12 hours of continuous use.
Frequency variation	As defined by Engine Governor (+/- 1%)
Excitation	Self-excited
Type of AVR	Electronic
Type of Bearing and lubrication	Anti-friction bearing with Grease Lubrication arrangement
Standard	BS:5000/IS – 4722 & IEC: 34 as amended up to date

4.2 Excitation: The alternator shall be brushless type and shall be self-excited self-regulated having static excitation facility. The exciter unit should be mounted on the control panel or on the alternator assembly. The rectifier shall be suitable operation at high ambient temperature at site.

4.3 Automatic Voltage regulators (AVR): In order to maintain output terminal voltage constant within the regulation limits i.e. +/- 1%, Automatic voltage regulator unit shall be provided as per standard practice of manufacturer.

4.4 Fault Tripping: In the event of any fault e.g. over voltage / high bearing temperature high winding temperature or an external fault, the AVR shall remove the excitation voltage to the alternator. An emergency trip shall also be provided.

4.5 Standards: the alternator shall be in accordance with the following standards as are applicable.

4.5.1 IS: 4722/BS: 2613 / 1970 the performance of rotating electrical machine.

4.5.2 IS: 4889/ BS: 269 rules for method of declaring efficiency of electrical machine.

4.6 Performance: Voltage dip shall not exceed 20% of the rated voltage for any step load or transient load as per ISO:8528 (part I). The winding shall not develop hot spots exceeding safe limits due to imbalance of 20% between any two phases from no load to full load.

The generator shall preferably capable of withstanding a current equal 1.5 times the rated current for a period of not more than 15 second as required vide clause 14.1.1 of IS 4722: 1992

The performance characteristics of the alternator shall be as below:

- (a) Total distortion factor Less than 3%
- (b) (i) 10% overload One hour in every 12 hrs. of continuous use.
- (ii) 50% overload 15 sec

4.7 Terminal Boxes: Terminal boxes shall be suitable for UG cables and shall have provision for connecting 2 runs of 3.5 core x 300 sq. mm UG cable. The terminal box shall be suitable to withstand the mechanical and terminal stresses developed due to any short circuit at the terminals.

4.8 Earthing & Earth terminals: 6 nos. of chemical earth pits should be provided for energizing the DG of below specification: Chemical earthing for grounding conduits IC cut-outs and other equipment's on the meter board by using copper bonded /SS rod with earth enhancing backfill compound which is non-corrosive, thermally conductive potential to permissible limits superior fault conduction capacity nontoxic, weather resistance and capable of achieving ohmic value less than one ohm. using 6ft copper bonded rod with back fill compound with earth chamber and naming of earth pit.

Test certificate should be provided for the same by authorized agency.

5. AMF/Engine Control Panel

Fabricating, Installing, Testing & Commissioning of automatic mains failure control including manual by-pass panel, suitable for 500 KVA silent type DG set complete with relays, timers, set of CTs for metering & protection and energy analyzer to indicate currents, phase and line voltages, frequency, power factor, KWH, KVARH & provision for overload, short circuit, restricted earth fault, under frequency, control cabling from AMF panel to diesel engine and elsewhere if required all complete and inter locking including the following:

- 1250 Amps, 4 poles by pass arrangement- 2 Set.
- 1250 Amps, 50 kA (Ics=Icu), 4 pole motorized electrically operated draw out with cradletype 3 position ACB with electronic release for O/C & E/F and shunt trip - 2 Nos.
- 800 Amps, 50 kA (Ics=Icu), 4 pole motorized electrically operated draw out with cradletype 3 position ACB with electronic release for O/C & E/F and shunt trip for outgoing - 1 Nos.
- Electrolytic Grade Cooper flat Busbars of size 1 run 80 x 10 mm for each Phase and 1 run 80 x 6 mm for Neutral.
- 400 Amps (35kA) – 2 nos & 630 Amps (50kA)- 1 no, MCCB with door handle for outgoing connections.
- **GPS enabled Microprocessor based Engine/AMF Panel control unit** for automatic function/emergency/stand by power supply system - 1no
- IDMT relay for over current protection for 3 phase - 1 Set
- Auto/Manual/Test/Off selector switches.
- 2 Nos. over voltage relay and 2 Nos. under voltage relay and 9 Nos of current transformers 15 P 10 accuracy for protection and 15 VA class-I for metering
- Energy analyzer unit to indicate KWH.
- Multi-function meters to incomers and outgoing ACB.
- Indicating lamps for load on mains and load on set and trip indications of incomers.
- Indicating lamps for each outgoing switch (ON, OFF & Trip) indications.
- Fuses for instruments
- Battery charger, complete with transformer/rectifier, D.C. voltmeter and ammeter, selector switch for trickle, off and boost and current adjustment
- Main supply failure monitor, Supply failure timer, Restoration timer
- Control unit with three impulse automatic engine start/stop and failure to start lockout.
- Impulse counter with locking and resets facility
- ON/OFF/Control circuit switch with indicator
- Audio/Video annunciation for: Low lubricating oil pressure, Engine over speed, Engine fails to start, Full load / maximum load warning

- 51 Labelling: All internal components shall be provided with suitable identification labels suitably engraved. Labels shall be fixed on buttons, indication lamps etc.
- 52 Equipment requirements: The AMF control cubicle shall incorporate in to assembly the general equipment and systems as under:

- (a) Control system equipment's and components such as relays, contactors, timers etc. both for automatic operation on mains failure and as well as for manual operation.
- (b) **GPS enabled remote monitoring system to ON/OFF & monitor the AMF through app/website.**
- (c) Equipment and components necessary for testing generating sets' healthiness with test mode and with load on mains
- (d) Necessary instruments and accessories such as combined meters for voltage, current, power factor, frequency, KW, KVA etc. and KWH meter with selector switch/ buttons for to obtain the reading of desired parameters.
- (e) Necessary indication lamps, fuses, terminal blocks, push buttons, control switches etc. as required.
- (f) Necessary engine/ generating set shut-down devices due to faults/ abnormalities.
- (g) Necessary Visual Audio alarm indication and annunciation facility, as specified.
- (h) Necessary Battery charger.

6. System Operations: The above-mentioned facilities provided shall afford the following operational requirements

6.1 Auto Mode: -

- a) A line voltage monitor shall monitor supply voltage on each phase. When the mains supply voltage fails completely or falls below set value (variable between 80 to 95% of the normal voltage value) on any phase, the monitor module shall initiate start-up of diesel engine. To avoid initiation due to momentary disturbance, a time delay adjustment between 0 to 5 second shall be incorporated in start-up initiation.
- b) A three-attempt starting facility shall be provided 6 seconds ON, 5 seconds OFF, 6 seconds ON, 5 seconds OFF, 6 seconds ON. If at the end of the third attempt, the engine does not start, it shall be locked out of start and a master timer shall be provided for this function. Suitable adjustment timers are to be incorporated which will make it feasible to vary independently ON-OFF setting periods from 1-10 seconds. If alternator does not build up voltage after the first or second start as may be, further starting attempt will not be made until the starting facility is reset.
- c) Once the alternator has built up voltage, the alternator circuit breaker shall closely connect the load to the alternator. The load is now supplied by the alternator.
- d) When the main supply is restored and is healthy as sensed by the line voltage monitor setting, both for under voltage and unbalance, the system shall be monitored by a suitable timer which can be set between 1 minute to 10 minutes for the load to be transferred automatically to main supply and the DG set is shut down after the preset duration of idle run.
- e) The diesel alternator set reverts to standby for next operation as per (a), (b) and (c) above.

6.2 Manual Mode

- a) It should be feasible to start-up the generator set by the operator on pressing the start push button.
- b) Three attempts starting facilities shall be operative for the startup function.
- c) Alternator circuit breakers closing and trip operation shall also be through the operator only by pressing the appropriate button on the panel and closure shall be feasible only after alternator has built up full voltage. If load is already on 'mains', pressure on 'close' button shall be ineffective.

d) Engine shut down, otherwise due to faults, shall be manual by pressing a stop button.

63 Test Mode

- a) When under 'test' mode, pressing of 'test' button shall complete the startup sequence simulation and start the engine. The simulation will be that of mains failure. Sequence 11.1 (a) and (b) shall be completed.
- b) Engine shall build up voltage but the set shall not take load by closing of alternator circuit breaker. When the load is on the mains, monitoring of performance for voltage/frequency etc. shall be feasible without supply to load.
- c) If during test mode, the power supply has failed, the load shall automatically get transferred to alternator.
- d) Bringing the mode selector to auto position shall shut down the set as per sequence 11.1 (d) provided main supply is ON. If the mains supply is not available at that time, the alternator shall take load as in (c) above.

64 Engine shut down and alternator protection equipment's

Following shut down and protection system shall be integrated in the control Panel.

- a) Engine
 - i) Low lubricating oil pressure shut down. This shall be inoperative during start-up and acceleration period.
 - ii) High coolant (Water) temperature shut down.
 - iii) Engine over speed shut down.
- b) Alternator protection
 - i) Overload
 - ii) Short circuit
 - iii) Earth fault
 - iv) Over voltage and Over current

65 Monitoring and metering facilities required in AMF panel

- a) Necessary instruments for visual monitoring of mains, alternator and load voltage, current, frequency, power factor, KW, KVA, KWH, etc.
- b) Whenever AMF panel starts/stops the DG, a message should be sent to registered mobile no's the details regarding the failure/disturbance of main power and vice versa.
- c) The AMF panel should start/stop the DG whenever the command from app/website receives.
- d) The Fuel gauge shall be electrically operated - fuel gauge shall have to be provided inside the enclosure. The fuel gauge should be able to show the level of the fuel even when the DG Set is not running. Whenever the fuel is low the AMF should send the message to registered mobile no's regarding the low fuel quantity.
- e) A set of visual monitoring lamp indication for:
 - i) Load on set
 - ii) Load on mains
 - iii) Set on Test (Alternator on operation duty, Alternator on standby duty)
 - iv) Set of lamps for engine shut down for over speed, low lube oil pressure and high coolant water temp, overload trip of alternator, earth fault trip of alternator, engine lock out and failure to start etc. All these indications shall have an audio and visual alarm. When operator accepts the alarm, the hooter will be silenced and the fault indication will become steady until reset by operating a reset button.

66 Operating devices

A set of operation devices shall be incorporated in the front of panel as under.

a) Master Engine Control Switch

This shall cut off in "OFF" position DC control supply to the entire panel, thus preventing start-up of engine due to any cause. However, battery charger, lamp test button for testing the healthiness of indication lamps, DC voltmeter, ammeter etc. shall be operative. It shall be feasible to lock the switch in OFF position for maintenance and shut down purposes.

- b) Operation selector switch OFF/AUTO/MANUAL/TEST position.
- c) A Set of push buttons as specified.
- d) Necessary battery charger with boost / trickle selector, DC voltmeter and DC ammeter.

7. Battery / Electrical System

7.1 Battery

- 7.1.1 Batteries supplied with Genset are generally dry and uncharged. First charging of uncharged batteries should be done from authorized battery charging Centre.
- 7.1.2 Batteries should be placed on insulated stands and relatively at cool place.
- 7.1.3 The battery capacity should be as per the recommendations of the manufacturer with 24 Volts electrical system and the size of copper conductor battery cable should be of 70 sq.mm.
- 7.1.4 Battery shall be of pure lead thin tin plate type any.

7.2 Cabling

- 7.2.1 Power cabling (including their termination) between alternator to the AMF panel should be done with 2 run 3.5 core 300 Sq. mm size aluminum conductor cable of total 80 meters (Minimum).
- 7.2.2 Multi core copper cable should be used for inter connecting the engine controls with the switch gear and other equipment's.

Scope of Work:

The detailed scope of supply, Installation, and commissioning of 500 kVA DG in NITK with AMF panel and all other accessories of the institute includes the following:

- a) Diesel Generating Set with 500 kVA capacity at 0.8 power factor developing 415 volts 3 phase 4 wire output with the engine and alternator mounted on common bedplate completely and all accessories required. The DG Sets shall be capable of delivering the desired kVA at 0.8 P.F. for the external load after meeting its own requirement for auxiliaries etc. and after accounting for de-rating due to various factors.
- b) Necessary acoustic enclosure.
- c) Necessary piping required for Fuel, Lubricating oil system, and exhaust piping.
- d) Necessary batteries for started including cable work as per the schedule of quantities.
- e) Necessary Engine control Panel and AMF panel as per detailed specification.
- f) Necessary set of suitable vibration isolation mountings.
- g) Minor building work including cutting and making good of openings in wall and floors, grouting, etc. as required.
- h) All clamps support etc. for all components of the installation as required.
- i) Necessary earthing sets for the system neutral and body earthing and earth leads for connections and naming of pits etc.
- j) Power cable from 500 kVA D.G. Set to its AMF panel.

STATUTORY CLEARANCE(S): Approval/clearance of the complete installation shall be obtained by the contractor/authorized agency from CPCB/State Pollution Control Board/Local Bodies/Central Electricity Authority (CEA)/other Licensing Authorities, wherever required. However, the application shall be made by Department and any statutory fee, as applicable, shall be paid by Department directly to the Govt. Authorities concerned.

INSPECTION AND TESTING

a. The Supplier/Contractor will arrange staff/fuel/POL for a test run at his cost.

b. **Pre-dispatch Inspection and Testing of DG sets:** All functional testing including 110% overload testing shall necessarily be carried out at factory/ manufacturer premises in presence of a representative of the Department.

For testing, following procedure will be followed: All major items/equipment i.e. engine & alternator in assembled condition, associated electrical control panels, etc. shall be offered for inspection and testing at factory/ manufacturers works. The successful tenderer shall give notice of minimum of two weeks for carrying out such tests. The Engineer-in-charge/ or his authorized representative shall witness such inspection & testing at the mutually agreed date.

Warranty:

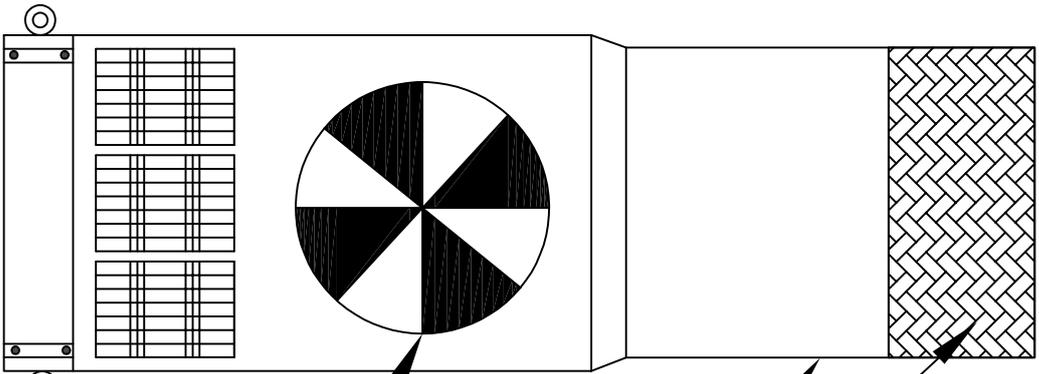
- **2 years comprehensive warranty and 3 years comprehensive AMC after warranty period.**
- On-site comprehensive warranty will be effective from the date of successful installation and commissioning. Any defects found in the product/sub-product within the warranty period of 2 years shall be rectified/ replaced by the vendor free of cost. During this period of warranty, servicing at the quarterly interval or earlier without any additional cost besides attending to call back services in case of break down shall be carried out free-of-cost. This includes replacement of parts and spare parts and any number of break down call.
- The comprehensive maintenance shall be carried out primarily at the premises of NITK on all working days during office hours or even beyond office hours or on holidays depending upon exigency of work as and when so required. In case, the service provider feels that the equipment cannot be repaired at site, they will carry and deliver the equipment at their own cost and get it repaired within 24 hours, failing which replacement shall be provided, the firm shall maintain proper service call sheets which will be duly signed by the Engineer and the concerned official of the department.
- The agency shall ensure that the equipment is retained in its original or higher configuration and form. In the event of any downward alteration to the equipment by the agency or any attachment made thereto, the agency shall pay for any repair/replacement and adjustments required to restore the equipment to its original state. The faulty equipment parts replaced must be new and equivalent in performance of existing parts.
- It shall be ensured that all the equipment is operational under the controlled power supply and all defective equipment if any shall be rectified/replaced without any additional cost to the NITK. The vendor will not raise any condition with regard to the working environments including voltage, earthing, etc. for equipment covered under WARRANTY.

Additions to Technical Specification:

1. 3 years CAMC after warranty period should be quoted separately.

Additional Mandatory Requirements:

1. General warranty is for two years, which is the minimum.
2. Comprehensive AMC for three years after warranty period. Payment for CAMC will be done at the respective time.
3. Any breakdown/service issue is to be sorted out within 72 hours. In case of delay beyond 72 hours, warranty period will be proportionally extended.
4. Companies have to ensure equipment lands at NITK.



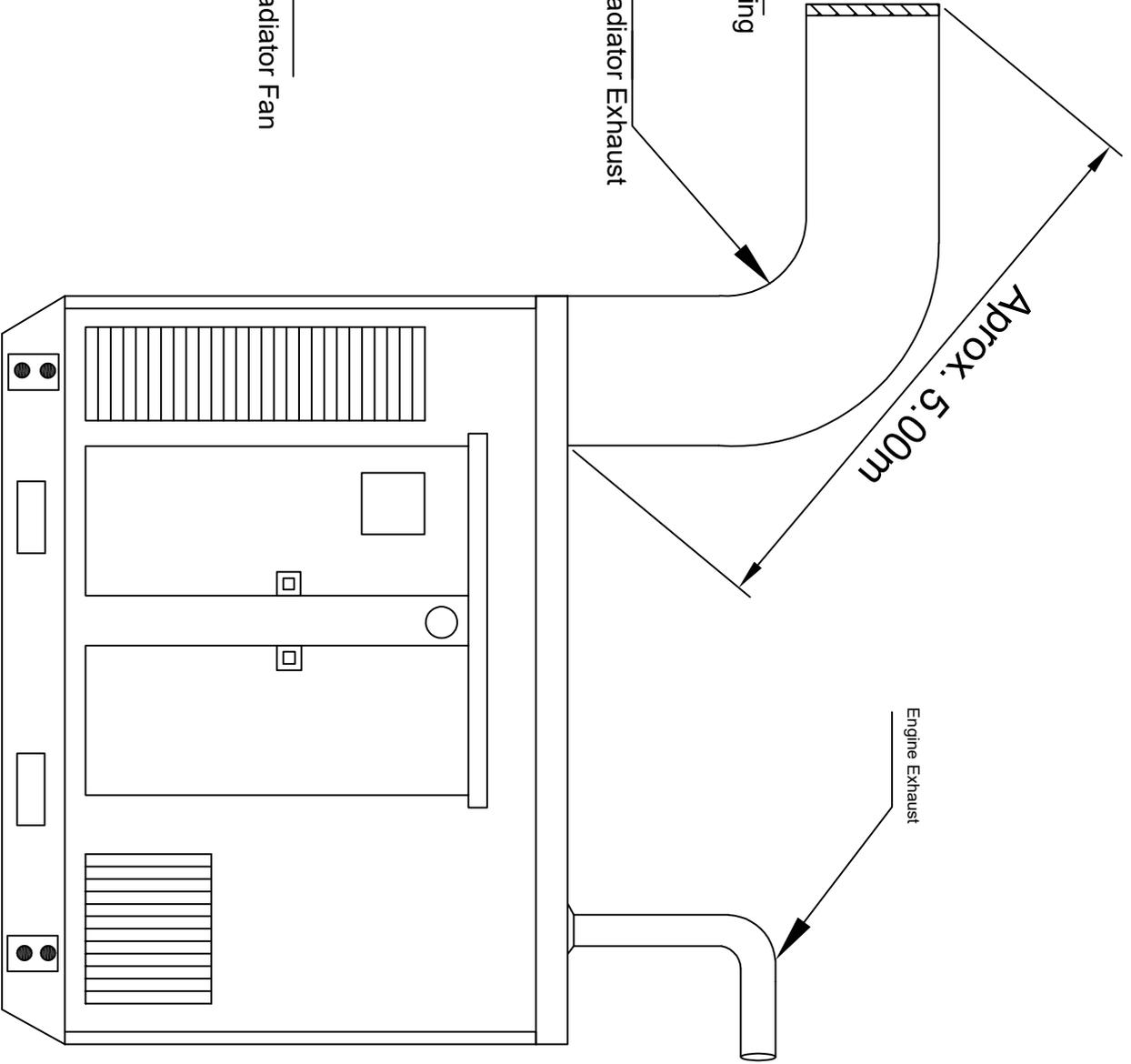
Front View

Radiator Fan

Radiator Exhaust

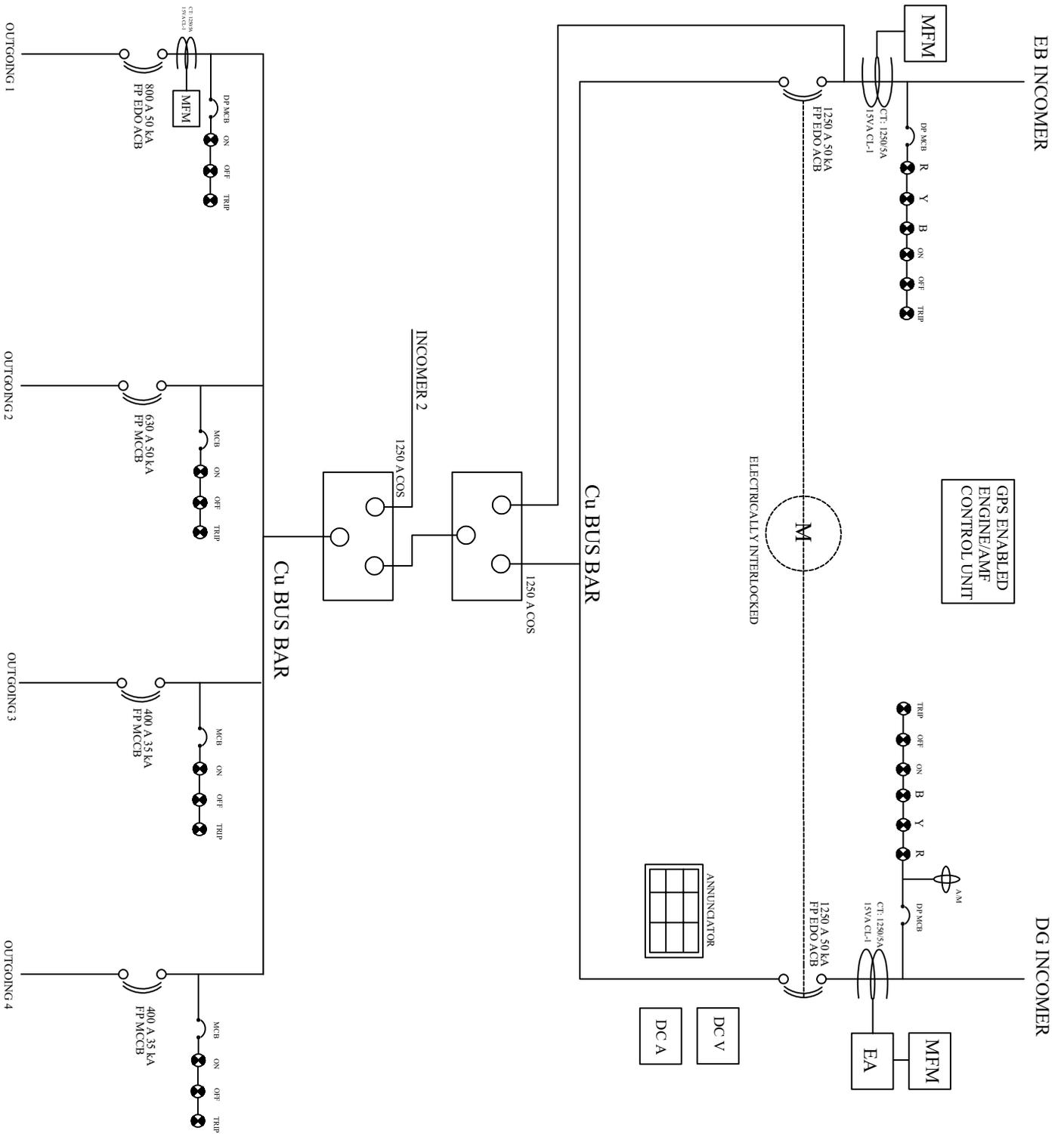
Fencing

Approx. 5.00m



Side View

Engine Exhaust



EB INCOMER

DG INCOMER

GPS ENABLED
ENGINE/AMF
CONTROL UNIT

M

ELECTRICALLY INTERLOCKED

Cu BUS BAR

1250 A COS

INCOMER 2

1250 A COS

Cu BUS BAR

OUTGOING 1
800 A 50 kA
RPEDO ACB
MFM
DP/MCB ON OFF TRIP
CT: 1250/5A
1SVA CL-1

OUTGOING 2
630 A 50 kA
FP/MCCB
MCCB ON OFF TRIP

OUTGOING 3
400 A 35 kA
FP/MCCB
MCCB ON OFF TRIP

OUTGOING 4
400 A 35 kA
FP/MCCB
MCCB ON OFF TRIP

ANNUNCIATOR

DC V
DC A

MFM
EA