INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI - 110016

NOTICE INVITING TENDER

NAME OF WORK	:	**Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi.**
ESTIMATED COST	:	**Rs. 9,44,34,202.00**
EMD	:	**Rs. 18,88,684.00**
N.I.T. No.	:	**0964/111/IITD/EW/EE(ED-1)/2025-26**
Date of Opening	:	02.02.2026

C … Nil I ….. Nil O …… Nil

JE(E) AEE EE(ED-1)

Name of work: Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi.

NIT for the above work has been prepared with the following:

1	Amount of NIT	:	Rs.9,44,34,202.00
2	Earnest money	:	Rs.18,88,684.00
3	Completion time	:	12 Months
4	Last date of submission (on line)	:	30.01.2026 upto 15:00 Hrs.
5	Date of opening	:	02.02.2026 at 15.00 Hrs.
6	Form of NIT	:	IITD – 7
7	Schedule applicable	:	Market Rate, DSR-2025
8	Material stipulated	:	As per Schedule of Work
9	Chargeable head	:	Rehabilitation / Renovation (Furniture and Fixture / 35.04.01
10	Estimate no.	:	IITD/DB/0964
11	Work code no.	:	2021/006/0964
12	NIT No.	:	0964/111/IITD/EW/EE(ED-1)/2025-26
13	Type of work	:	Works of upgradation/ Maintenance.

Certified that this NIT contains 1 to 91 pages.

NIT amounting to Rs. 9,44,34,202.00 is approved.

JE [E]S/Stn. AEE(E) Executive Engineer (ED-1)

Institute Engineer

C … Nil I ….. Nil O …… Nil

JE(E) AEE EE(ED-1)

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI – 110016

NOTICE INVITING E-TENDER

IITD/WORKS (SP- 5226)/2026

Executive Engineer (ED-1), Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016, Ph. No. 011-2654 8437 on behalf of Board of Governors invites online Percentage Rate Tender from enlisted contractors of appropriate class from CPWD, MES, BSNL, Railways, specialized agency having authorization from OEM dealing with manufacturing, repairing and retrofitting of HT, LT substation including Transformer and Switchgears etc. for the following work:

1	Name of work	**:**	**Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi.**
2	NIT No.	**:**	**0964/111/IITD/EW/EE(ED-1)/2025-26**
3	Estimated Cost (Rs.)	**:**	**9,44,34,202.00**
4	Earnest Money Deposit (Rs.)	**:**	**18,88,684.00**
5	Security Deposit	**:**	**2.5% of Tendered Value**
6	Period of completion	**:**	**12 Months**
7	Last date & time of bid submission	**:**	**Upto 3 PM of 30.01.2026**
8	Performance Bank Guarantee	**:**	**5 percent of the tendered amount**

The bid forms and other details may be downloaded from Central Public Procurement Portal (http://eprocure.gov.in/eprocure/app). Aspiring bidders who have not enrolled / registered in e-procurement should enrol / register themselves before participating through web site http://eprocure.gov.in/eprocure/app. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at "Instructions for online bid submission."

Bidders can access quotation / tender documents on the website (for searching in the NIC site), kindly go to quotation search option and type 'IIT'. Thereafter, click on "GO" button to view all IIT quotations. Select the appropriate quotation / tender and fill them with all relevant information and submit the completed Quotation / Tender document online on the website http://eprocure.gov.in/eprocure/app as per the schedule given in the next page.

No manual bids will be accepted. All bids (both Technical & Financial) should be submitted in the e-procurement portal.

Executive Engineer (ED-1)
For & on behalf of BOG, IIT Delhi

C … Nil I ….. Nil O …… Nil

JE(E) AEE EE(ED-1)

Ch. Head : Rehabilitation / Renovation (Furniture and Fixture / 35.04.01
Work Code : 2021/006/0964

Copy to:-
1. Junior Engineer
2. D.A. (Works Accounts)
3. D.R. (A/C)
4. A.R. (Store Purchase Section)
5. Notice Board
6. Website Administrator, IIT Delhi
7. Office copy

INDEX

C … Nil I ….. Nil O …… Nil

JE(E) AEE EE(ED-1)

SCHEDULE

1	Name of organisation	**:**	Indian Institute of Technology Delhi
2	Tender / Quotation type (open / limited / EOI / auction / single)	:	Open
3	Tender / Quotation category (services / goods / works)	**:**	Goods & Works
4	Type of Contract (work / supply / auction / service / buy / empanelment / sell)	**:**	Work
5	Form of contract (IITD – 7/8)	**:**	IITD – 7
6	Work Category (civil / electrical / fleet management / computer systems)	**:**	Electrical
7	Is multi-currency allowed?	**:**	No
8	Date of publishing / issue / start	**:**	09.01.2026 at 17.00 Hrs.
9	Document download start date	**:**	09.01.2026 at 17.00 Hrs.
10	Document download end date	**:**	30.01.2026 at 15.00 Hrs.
11	Date & time of pre-bid meeting	**:**	No pre-bid meeting be held
12	Venue of pre-bid meeting	**:**	Not applicable
13	Last date & time of uploading of bids	**:**	30.01.2026 at 15.00 Hrs.
14	Date & time of opening of Technical bids	**:**	02.02.2026 at 15.00 Hrs.
15	Tender fee	**:**	**NIL**
16	Earnest Money Deposit (EMD) Rs.	**:**	**18,88,684.00**
17	Mode of payment of EMD & Tender Fee	**:**	Can be paid through RTGS/NEFT. IIT Delhi Bank details are as under: Name of the Bank A/C : IITD Revenue Account SBI A/C No. 10773572622 Name of the Bank : State Bank of India, IIT Delhi, Hauz Khas, New Delhi-110016 IFSC Code : SBIN0001077 MICR Code 110002156 Swift No. : SBININBB547 (This is mandatory that UTR Number isprovided in the on-line quotation/bid. (Kindly refer to the UTR Column of the Declaration Sheet at Annexure-II) **OR** Demand Draft favouring **Registrar, IIT Delhi** Payable at SBI, IIT Delhi Branch. **Scanned copy of DD needs to be uploaded alongwith the Technical Bid.** Original DD shall have to be submitted to the tender inviting authority by the bidder as and when required after opening

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			of bid.
17	Bid without EMD / Non-submission of original DD	**:**	To be considered as UNRESPONSIVE and bid shall summarily be rejected
18	No. of bids / covers (1 / 2 / 3 / 4)	**:**	**2**
19	Bid Validity days (180/120/90/60/30)	**:**	75 days (From last date of Submission of bid)
20	Address for communication	**:**	Executive Engineer (ED-1), Works Department, MZ-136, Main Building, IIT Delhi, Hauz Khas, New Delhi – 110016
21	Contact No.	**:**	011-26548437 / 011-26591463
22	e-mail address for communication	**:**	Eoa.Of.Electrical-I@admin.iitd.ac.in aashish@admin.iitd.ac.in

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INSTRUCTIONS FOR ONLINE BID SUBMISSION

As per the directives of Department of Expenditure, this quotation / tender document has been published on the Central Public Procurement Portal (URL: http://eprocure.gov.in/eprocure/app). The bidders are required to submit softcopies of their bids electronically on the CPP portal, using valid Digital Signature Certificates (DSC). 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 submitting their bids online on the CPP portal.

More information useful for submitting online bids on the CPP portal may be obtained at http://eprocure.gov.in/eprocure/app

REGISTRATION

1. Bidders are required to enrol on the e-procurement module of the Central Public Procurement portal (URL: http://eprocure.gov.in/eprocure/app) by clicking on the link, "click here to enrol". Enrolment on the CPP portal is free of charge.
2. As part of the enrolment process, the bidders will be required to choose a unique user name and assign a password for their accounts.
3. Bidders are advised to register their valid e-mail address and mobile number 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 2 or class 3 certificates with signing key usage) issued by any certifying authority recognised by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.) with their profile.
5. Only one valid DSC should be registered by a bidder. Please note that bidders are responsible to ensure that they do not lend their DSCs to others which maylead to misuse.
6. Bidder then logs into the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.

SEARCHING FOR TENDER DOCUMENTS

1. There are various search options built in the CPP portal to facilitate bidders to search active tenders by several parameters. These parameters could include tender ID, organisation 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 organisation name, form of contract, location, date, other keywords etc. to search for a tender published on the CPPportal.

2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. The tenders can bemoved to the respective "My Tenders" folder. This would enable the CPP portal to intimate the bidders through SMS / e-mail 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 other, 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 bids. Please note the number of covers in which the bid documents have to be submitted. Any deviations from these may lead to rejection of the bids.
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 formats. Bid documents may be scanned with 100 dpi with black & white option.
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's certificates, etc.) has been provided to the bidders. Bidders can use "My Space" 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 bid submission process.

SUBMISSION OF BIDS

1. Bidder should log into the site well in advance for bid submission so that h e /she 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 "on-line" to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, EMD / Tender fees is sought, bidders need to pay the tender fee and EMD separately on-line through RTGS (Refer to Schedule, Page no. 3)

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JE(E) AEE EE(ED-1)

4. A standard BOQ Format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the white coloured [unprotected] cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

   OR

   In some cases financial bids can be submitted in PDF format as well (in lieu of BOQ).

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, opening of bids etc. The bidders should follow this timeduring bid submission.
6. All the documents being submitted by the bidders would be encrypted usingPKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorised 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.
7. The uploaded tender documents become readable only after the tender opening by the authorised bid openers.
8. Upon the successful and timely submission of bids, 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. Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

ASSISTANCE TO BIDDERS

1. Any queries relating to 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 24 x 7 CPP Portal Help Desk.The contact number of the helpdesk is 18002337315.

GENERAL INSTRUCTIONS TO THE BIDDERS

1. The tenders will be received online through portal https://eprocure.gov.in/eprocure/app. In the technical bids, the bidders are required to upload all the documents in PDF format.
2. Possession of a valid class II / III Digital Signature Certificate (DSC) in the form of smart card / e-token in the company's name is a prerequisite for registrationand participating in the bid submission activities through https://eprocure.gov.in/eprocure/app. Digital Signature Certificates can be obtained from the authorised certifying agencies, details of which are available in the website https://eprocure.gov.in/eprocure/app under the link "Information about DSC".
3. Tenderers are advised to follow the instructions provided in the "Instructions to the tenderer" for the e-submission of the bids online through the Central Public Procurement Portal for e-procurement at https://eprocure.gov.in/eprocure/app.

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JE(E) AEE EE(ED-1)

INFORMATION & INSTRUCTION TO BIDDERS FOR E-TENDERING

Executive Engineer (ED-1), Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016, Ph. No. 011-2654 8437 on behalf of Board of Governors invites online **Percentage Rate** Tender from enlisted contractors of appropriate class from CPWD, MES, BSNL, Railways, specialized agency having authorization from OEM dealing with manufacturing, repairing and retrofitting of HT, LT substation including Transformer and Switchgears etc. for the following work.

Sr. No.	NIT No.	Name of Work & Location	Estimated cost put to bid (Rs.)	Earnest money (Rs.)	Tender Fee (Rs.)	Period of completion	Last date & time of submission of bid	Time & date of opening of Technical Bid	Time & date of opening of Financial Bid
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	0964/111/IITD/EW/EE(ED1)/2025-26	**Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi.**	9,44,34,202.0	18,88,684.00	NIL	12 Months	Upto 3 PM of 30.01.2026	02.02.2026 at 15.00 Hrs.	To be decided after assessing Technical Bids

1. The successful bidder shall be required to submit a performance guarantee of 5% of the tendered amount in the form of Bank Guarantee or F.D.R. from a Nationalized / Scheduled Bank within fifteen days of issue of letter of intent before award of work. In case of failure by the Contractor to submit the performance guarantee within the specified period, full earnest money will be forfeited by the Institute and the tender shall be treated as null and void. EMD shall be refunded after submission of PBG. **The performance guarantee shall be initially valid up to the stipulated date of completion (i.e. 12 Months) plus sixty days beyond that.**

2. Contractors who fulfil the following requirements shall be eligible to apply. Joint ventures are not accepted.

   a. Should have satisfactorily completed the works as mentioned below during the last Seven years ending **previous day of last date of submission of bids.**

   i. **Three** similar works each costing not less than **Rs.3,77,74,000.00**, or **two** similar works each costing not less than **Rs.5,66,61,000.00**, or one similar work costing not less than **Rs.7,55,47,000.00** (all figures rounded to nearest thousand)

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JE(E) AEE EE(ED-1)

3. **Earnest money (**EMD) shall have to be deposited / submitted as stipulated in the schedule.

4. The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of submission of financial bid.

5. **Similar work means** Supply, installation, testing and commissioning of Substation works Including HT Electrical Panels, HT Transformers, TTA Panels and sandwich busducts.

   The Completion Certificate shall include S/I/T/C of HT Transformers of at least one having minimum rating 2000 KVA Oil Type Transformer.

6. **Tender Specific, Bid Specific Authorization Letter / Certificate from the Manufacturer of HT Panels, HT Transformers, TTA LT panels and Sandwich Bus Duct, on the Letter Head of OEM, to be uploaded during the online submission of Bid.**

7. **Work means work under Government/ Central Public Sector Undertaking / State Public Sector** Under Central Autonomous bodies/ State Autonomous bodies/ City Development Authority/ Municipal Cooperation of City formed under any act by Central/ State Government and published in Central/ State Gazetteer.

8. Completion certificates are required to be got issued by an officer not below the rank of Executive Engineer of similar works completed by the Firm. The work experience certificates submitted by the bidders shall clearly indicate that:

   a. The similar work executed shall be **as per '5' above**

   b. The completed cost of the work

   c. Actual date of completion of the work

9. IITD is committed to follow the principle of transparency, equity and competitiveness in public procurement. Before submission of bid, **each bidder should sign integrity pact at respective places** and submit the bid. **If duly signed integrity pact is not submitted by bidder, such bidshall not be considered.**

10. **The intending bidder must read the terms and conditions [both commercial & Additional] & IITD - 6 carefully** which will be the part of the Contract. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.

11. Information and Instructions for bidders posted on website shall form part of bid document.

12. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website e-procure.gov.in free of cost.

13. But the bid can only be submitted after submission of EMD as prescribed in the schedule.

14. Copy of all mandatory documents as desired in the NIT shall be scanned and up-loaded to the e-Tendering website within the period of bid submission. However, certified / original copy of all the scanned and up-loaded documents shall have to be submitted by the lowest bidder only within a week physically in the office of e-tendering authority. During scrutiny of technical bids, if required, bidders may be asked to submit original documents for cross checking.

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JE(E) AEE EE(ED-1)

15. Online bid documents submitted by intending bidders shall be opened only of those bidders, who has submitted prescribed EMD and other documents scanned and uploaded are found in order.

16. Those contractors not registered on the website mentioned above, are required to get registered beforehand. Bidders should refer "Instruction for Online Bid Submission" given earlier for further assistance

17. When bids are invited in two / three stages systems and if it is desired to submit revised financial bid it shall be mandatory to submit revised financial bid. If not submitted, then the bid submitted earlier shall become invalid

18. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion

19. Contractors must ensure to quote rate of each item

20. The bid submitted shall become invalid if:

a. The bidder is found ineligible.
b. The bidder does not upload all the documents (including GSTIN registration) as stipulated inthe bid document including the undertaking / declaration if any.
c. EMD not deposited as specified
d. Not registered with EPFO & ESIC

21. The bidder shall upload following document / information in support of technical eligibility (Part No.–II technical bid).

a. Duly signed and stamped copy of bid document, downloaded from e-tender portal.
b. Copy of BIS certificate of manufacturing HT Panels.
c. Copy of ISO: 9001:2015 certification of HT Panels Manufacturer.
d. Copy of ISO: 14001:2015 certification of HT Panels Manufacturer.
e. Copy of ISO: 45001:2018 certification of HT Panels Manufacturer.
f. Copy of BIS certificate of manufacturing HT Transformer.
g. Copy of ISO: 9001:2015 certification of HT Transformer Manufacturer.
h. Copy of ISO: 45001:2018 certification of HT Transformer Manufacturer.
i. Copy of ISO: 14001:2015 certification of HT Transformer Manufacturer.
j. Copy of BIS certificate of manufacturing LT Panels.
k. Copy of ISO: 9001:2015 certification of LT Panels Manufacturer.
l. Copy of ISO: 14001:2015 certification of LT Panels Manufacturer.
m. Copy of ISO: 45001:2018 certification of LT Panels Manufacturer.
n. Copy of BIS certificate of Sandwich Bus Duct.
o. Copy of ISO: 9001:2015 certification of LT busduct Manufacturer.
p. Copy of ISO: 14001:2015 certification of LT bus Manufacturer.
q. Copy of ISO: 45001:2018 certification of LT Busduct Manufacturer.
r. Duly filled Guaranteed Technical Particulars, Performa of GTP as appears in the technical specification for HT Panel, HT Transformer, TTA LT Panels, APFC Panels, Sandwich Busduct, HT LT cabling, any other equipment / item GTP as required by the Engineer-in-Charge.
s. Type test reports for 2 –tier TTA Panels (up to 4000 A rating) and for 2-tier TTA Panels (1600 A rating), APFC Panels Type Test report for 500KVAR and 300 KVAR Panels, Type Test Reports for 2500 KVA Oil Type Transformer, Type Test Report of 4000 Amp and 1600

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JE(E) AEE EE(ED-1)

Amp Busduct, Type Test reports of HT and LT Cables to be submitted along with the bid. The Type test reports should not be earlier than 10 years from the date of submission of bid.

t. Duly filled GTP as mentioned in technical specifications & Type test reports as per IEC 62271 for HT Panels and sandwich type bus ducting.

u. Duly filled GTP as mentioned in technical specifications & Type test reports as per IEC for HT Transformers IS 2026, IS 1180, IEC 62770, Bushing (IS 2099 & IS 3347), Fitting and Accessories IS:2026 & CBIP.

v. Duly filled GTP as mentioned in technical specifications & Type test reports as per IEC 61439 part 1 and 2 for LT Panels.

w. Duly filled GTP as mentioned in technical specifications & Type test reports as per IEC 61439, part 1 and 6 and IS 8626 part 1 and 2 for sandwich type bus ducting.

x. Duly filled GTP as mentioned in technical specifications & Type test reports as per IEC 61439 part 1 and 2 for LT Panels and sandwich type bus ducting.

y. Documentary Proof of manufacturing unit of LT Panel having in house facility of CNC cutting, Bending & Tolling machines and 7 Tank Chemical process with powder coating facility for accuracy and quality.

z. Make and catalogue of earth electrode and earth enhancing compound.

aa. Duly filled GTP for maintenance free earthing as mentioned in technical specifications.

bb. Type tests (as mentioned in technical specifications) for wireless temperature sensors conducted from CPRI/ERDA/NABL Lab within the last 10 years as on the date of bid opening.

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JE(E) AEE EE(ED-1)

List of Mandatory Documents to be scanned and uploaded within the period of bid submission:

1. Annexure – 1 duly filled in and got signed.
2. Annexure – X-1, X-2, C-1, C-2 and Guaranteed Technical Particulars for TTA Panel, Transformer & Busduct) duly complied and got signed (on OEM Letter Head).
3. Enlistment certificate of composite category.
4. Proof of EMD deposit / Scanned copy of DD submission (favouring 'Registrar, IIT Delhi')

   The following undertaking on firm's letter head shall be uploaded by the bidder I scanned copy of DD/FDR is uploaded by the bidder: "The exact physical EMD (as uploaded) shall be deposited by me / us with the authority inviting tender, in case I/we become the lowest tenderer, within a week of the opening of financial bid, otherwise, IITD may reject the tender and also take actions to debar me/ us from tendering in any form in IIT Delhi".
5. The Authorization Certificate from the OEM shall be Bid specific, Tender Specific Authorization Certificate on the Letter Head of OEM, to be uploaded during the online submission of Bid.
6. Certificate of work experience as desired (vide clause 5 above)
7. Certificate of GST Registration of the State in which the work is to be taken up, if already obtained by the bidder. If the bidder has not obtained GST registration in the State in which the work is to be taken up, or as required by GST authorities then in such a case the bidder shall scan and upload following undertaking along with other bid documents.

   "if work is awarded to me, I/we shall obtain GST registration certificate of the State, in which work is to be taken up within one month from the date of receipt of award letter or before release of any payment by IIT Delhi, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by IIT Delhi or GST department in this regard."
8. Affidavit as per provision of the clause 1.2.2 of IITD-6 [To be submitted on stamp paper and date of affidavit and purchase of stamp paper shall not be earlier than the publication of NIT. NIT number, name of work shall invariably be written on the **1st page** of the Affidavit.]
9. Acceptance to execute INTEGRITY PACT [see integrity pact]
10. Valid Electrical License of the Contractor
11. IITD 7 / 8 duly signed
12. Any other document as specified in the NIT

Executive Engineer [ED-1]
For & on Behalf of BOG, IIT Delhi

C … Nil I ….. Nil O …… Nil

JE(E) AEE EE(ED-1)

IITD – 6

INDIAN INSTITUTE OF TECHNOLOGY DELHI

NOTICE INVITING E-TENDER

12.0 Percentage Rate tenders are invited on behalf of The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 110016 invites online Percentage Rate Tender from OEM or enlisted contractors of appropriate class from CPWD, MES, BSNL, Railways, specialized agency having authorization from OEM dealing with manufacturing, repairing and retrofitting of Transformer and switchgears etc. for the following work for the work of **Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi.**

12.1 The work is estimated to cost Rs.**9,44,34,202.00.** This estimate, however, is given merely as a rough guide.

12.1.1 The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids.

12.2 Intending bidder is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:-

12.2.1 Criteria of eligibility for submission of bid documents: Conditions for intending bidders / contractors

12.2.1.1 **Three** similar works each costing not less than **Rs.3,77,74,000.00**, or **two** similar works each costing not less than **Rs.5,66,61,000.00**, or one similar work costing not less than **Rs.7,55,47,000.00** in last 7 years ending previous day of last date of submission of bids. The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of submission of financial bid.

12.2.2 **To become eligible for issue of bid, the bidders shall have to furnish an affidavit as under: -** *"I / We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I / we shall be debarred for bidding in IIT Delhi in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee (Scanned copy to be uploaded at the time of submission of bid)"*

2.0 Agreement shall be drawn with the successful bidders on prescribed Form No. IITD 7/8 which is available as IIT Delhi Publication. Bidders shall quote their rates as per various terms and conditions of the said form which will form part of the agreement.

3.0 The time allowed for carrying out the work will be **12 Months from** the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later,in accordance with the phasing, if any, indicated in the bid documents.

4.0 The site for the work is available.

C … Nil I ….. Nil O …… Nil

JE(E) AEE EE(ED-1)

5.0 The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen from the web Site **e-procure.gov.in.**

6.0 After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified.

7.0 While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.

8.0 If it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the tender submitted earlier shall become invalid.

9.0 EMD shall have to be deposited / submitted as stipulated in the schedule of the NIT.

9.1 Copy of all 'mandatory documents' and other documents as specified in the press notice shall be scanned and uploaded to the e-tendering website within the period of bid submission. ***However, certified copy of all the scanned and uploaded documents as specified in press notice shall have to be submitted by the lowest bidder only within a week physically in the office of tender opening authority.***

10.0 The bid submitted shall become invalid, if:

10.1 The bidder is found ineligible.

10.2 The bidder does not upload all the documents (including GSTIN Registration) as stipulated in the bid document**.**

10.3 EMD & Proper Affidavit not submitted as specified

10.4 If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted ***physically by the lowest bidder*** in the office of the bid opening authority.

11.0 The contractor whose bid is accepted will be required to furnish **performance guarantee of 5% (Five Percent)** of the bid amount within the period specified in Schedule F. This guarantee shall be in the form of Deposit at Call receipt of any scheduled bank / Banker' cheque of any scheduled bank/ Demand Draft of any scheduled bank/Pay order of any Scheduled Bank (in case guarantee amount is less than Rs.1,00,000/-) or Government Securities or Fixed Deposit Receipts or irrevocable Bank Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to thecontractor.

12.0 Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and subsoil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he

inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. 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 work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

13.0 The competent authority on behalf of the Board of Governors does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidder shall be summarily rejected.

14.0 Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

15.0 The competent authority on behalf of the Board of Governors reserves to himself the right of accepting the whole or any part of the bid and the bidder shall be bound to perform the same at the rate quoted.

16.0 The contractor shall not be permitted to bid for works in the IITD responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Gazetted officer in the IIT Delhi. Any breach of this condition by the contractor would render him liable to be debarred from bidding process in future in IIT Delhi.

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

18.0 The bid for the works shall remain open for acceptance for a period of **seventy five days from the date of opening of financial bids**, if any bidder withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the IIT Delhi shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidder shall not be allowed to participate in the re-bidding process of the work.

19.0 This notice inviting bid shall form a part of the contract document. The successful bidder / contractor, on acceptance of his bid by the Accepting Authority shall **within fifteen days** from the stipulated date of start of the work, sign the contract consisting of:-

19.1 The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

19.2 Standard IITD Form –7/8 or other Standard IITD Form as applicable.

20.0 In case any discrepancy is noticed between the documents as uploaded at the time of submission of the bid online and hard copies as to be submitted physically in IIT Delhi, if so desired by the accepting authority, then the bid submitted shall become invalid and the IIT Delhi shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidder shall not be allowed to participate in the bidding process of the work.

21.0 GST or any other tax applicable in respect of inputs procured by the contractor for this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same. However, component of GST at time of supply of service (as provided in CGST Act 2017) provided by the contract shall be varied if differentfrom that applicable on the last date of receipt of tender including extension if any.

INTEGRITY PACT

To

……..,

……..,
……..

Sub: NIT No. **0964/111/IITD/EW/EE(ED-1)/2025-26** for the work of **"Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi."**

Dear Sir,

It is hereby declared that IIT Delhi (IITD) is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the Integrity Agreement, which is an integral part of the tender/bid documents, failing which the tender/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the IITD.

Yours faithfully,

Executive Engineer (ED-1)

[TO BE SUBMITTED DULY SIGNED BY THE BIDDER ALONGWITH BID DOCUMENTS]

To

Executive Engineer (ED-I),
IIT Delhi, Hauz Khas,
New Delhi – 110016

Subject: Submission of Bid for the work of **"Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi."**

Dear Sir,

I / We acknowledge that IIT Delhi is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I / We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I / We will sign the enclosed integrity Agreement, which is an integral part of tender / bid documents, failing which I / We will stand disqualified from the tendering process. I / We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I / We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by IITD. I / We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I / We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, IITD shall have unqualified, absolute and unfetteredright to disqualify the tenderer /bidder and reject the tender/bid is accordance with terms and conditions of the tender/bid.

Yours faithfully,

(Duly signed by authorized signatory of the Bidder)

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

[To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of IITD]

INTEGRITY AGREEMENT

This Integrity Agreement is made at ..... on this ..... day of..... 20.....

BETWEEN

The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 represented through **Executive Engineer (ED-I)**, IIT Delhi
....., (Hereinafter referred as the '**Principal/Owner**',
(Address of Division)
'**Principal/Owner**', 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
(Details of duly authorized signatory)
to as the "**Bidder/Contractor**" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

PREAMBLE

WHEREAS the Principal / Owner has floated the Tender (NIT No. **0964/111/IITD/EW/EE(ED-1)/2025-26**) (hereinafter referred to as "**Tender/Bid**") and intends to award, under laid down organizational procedure, contract for **"Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi."** (Name of work) 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 of 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 termsand 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 Pact witnesses as under:

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

ARTICLE 1: COMMITMENT OF THE PRINCIPAL / OWNER

1. The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:
   - **1.1.** No employee of the Principal / Owner, 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 isnot legally entitled to.
     - **1.1.1.** The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner 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.
     - **1.1.2.** The Principal/Owner shall Endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.
2. If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PoC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner 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) adhere to the highest ethical standards, 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 throughout the negotiation or award of a contract.
2. The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:
   - **2.1.** 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 Contract or 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 Contract.
   - **2.2.** The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any 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.
   - **2.3.** The Bidder(s) / Contractor(s) will not commit any offence under the relevant IPC/PoC 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 part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
   - **2.4.** 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 principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalfof 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.

2.5. 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 intermediariesin connection with the award of the Contract.

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

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

5. 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 an action or influencing a decision through intimidation, threat 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).

ARTICLE 3: CONSEQUENCES OF BREACH

Without prejudice to any rights that may be available to the Principal / Owner 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 Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

1. If the Bidder(s)/Contractor(s), either before award or during 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 14 days' notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/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 the Principal/Owner**.

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

3. **Criminal Liability**: If the Principal/Owner obtains knowledge of conduct 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 IPC Act, or if the Principal / Owner has substantive suspicion in this regard, the Principal/Owner 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 confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.
2. If the Bidder makes 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 own discretion, revoke the exclusion prematurely.

ARTICLE 5: EQUAL TREATMENT OF ALL BIDDERS/CONTRACTORS/SUBCONTRACTORS

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/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

1. This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 6 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.
2. If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority of IIT Delhi.

ARTICLE 7: OTHER PROVISIONS

1. This Pact is subject to Indian Law, place of performance and jurisdiction is the Head Quarters of the Division of the Principal/Owner, 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 partner holding power of attorney signed by all partners and consortium members. In 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 to their original intensions.
5. It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to

arbitration.

ARTICLE 8: LEGAL AND PRIOR RIGHTS

1. All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

.....
(For and on behalf of Principal / Owner)

.....
(For and on behalf of Bidder / Contractor)

WITNESSES:

1. .....

(signature, name and address)

2. .....

(signature, name and address)

Place:

Dated :

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

IITD - 7/8

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI - 110016

Percentage Rate Tender / Percentage Rate Tender & Contract for Works

Tender for the work of **"Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi."**

1. To be submitted online by **Upto 3 PM of 30.01.2026**
2. To be opened on **31.01.2026 at 3 PM** online

e-TENDER

I / We have read and examined the Notice Inviting Tender, schedule, A, B, C, D, E & F, Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, Clauses of Contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I / We hereby tender for the execution of the work specified for the Board of Governors, IIT Delhi within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.

We agree to keep the tender open for seventy-five (75) days from the due date of its opening / seventy-five days from the date of submission of bid in case tenders are invited on 2/3 envelop system (**strike out as the case may be**) and not to make any modification in its terms and conditions.

A sum of **Rs. 18,88,684.00** is hereby deposited in IIT Delhi Revenue Account No. 10773572622 as earnest money / **A Demand Draft of Rs. 18,88,684.00** favouring Registrar, IIT Delhi has been scanned and uploaded with the Technical Bid. If I / We, fail to furnish the prescribed performance guarantee within prescribed period I / We agree that the said The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I / We fail to commence the work as specified, I / We agree that The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained inClause 12.2 and 12.3 of the tender form. Further, I / We agree that in case of forfeiture of Earnest Money & Performance Guarantee as aforesaid I / We shall be debarred for participation in the re- tendering process of the work.

I / We undertake and confirm that eligible similar work(s) has/have not been got executed

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I / We shall be debarred for tendering in IIT Delhi in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I / We hereby declare that I / We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I / We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated:

Signature of Contractor

Witness:

Postal Address

Address:

Occupation:

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for an on behalf of The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 110016 for a sum of (Rupees….....).

The letters referred to below shall form part of this contract agreement:-

(a)

(b)

(c)

For & on behalf of Board of Governors, IIT Delhi

Signature ……..

Dated: Designation …….

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

PROFORMA OF SCHEDULES

SCHEDULE "A"

Schedule of Quantities (enclosed)

SCHEDULE "D"

Extra schedule for specific requirements / documents for the work, if any.

NIL

SCHEDULE "E"

Reference to General Conditions of Contract:

1	Reference to General Conditions of Contract	:	GCC for Maintenance work 2023 for CPWD works along with correction on slips/amendments issued upto last date of submission of bid.
2	Name of work	:	**Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi.**
3	Estimated cost of work (Rs.)	**:**	9,44,34,202.00
4	Earnest Money (Rs.)	**:**	18,88,684.00
5	Performance Guarantee	**:**	5 percent of tendered value
6	Security Deposit	**:**	2.5 percent of tendered value

SCHEDULE "F"

GENERAL RULES & DIRECTIONS:

Officer inviting tender	**:**	Executive Engineer (Electrical)
Maximum percentage for quantity of items ofwork to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3	**:**	**See Clause 12 below**

DEFINITIONS:

2 (V)	Engineer-in-charge	**:**	Executive Engineer (Electrical)
2 (viii)	Accepting authority	**:**	Institute Engineer
2 (x)	Percentage on cost of materials and labour to cover all overheads and profits	**:**	15 percent
2 (xi)	Standard Schedule of Rates	**:**	Market, DSR-2025 for Electrical Works

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

			with corrected up to date of submission of bid.
2 (xii)	Department	:	Estate & Works, IIT Delhi
9 (ii)	Standard IITD Contract Form	:	PWD / IITD Form 7 / 8 as modified and corrected upto date, GCC 2023 for Miantenance work of CPWD with latest modifications.

CLAUSE 1

i)	Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance	:	15 days
ii)	Maximum allowable extension beyond the period provided in (i) above with late fees @0.1% per day of performance guarantee	:	10 days

CLAUSE 2

(i)	Authority for fixing compensation under Clause 2	:	Institute Engineer

CLAUSE 2A

(i)	Whether Clause 2A shall be applicable	:	No

CLAUSE 5

(i)	Number of days from the date of issue of letter of acceptance for reckoning date of start	:	10 days

TABLE OF MILE STONE(S):

Sr. No.	Description of Milestone (physical)	Time allowed in days (from date of start)	Amount to be with-held in case of non-achievement of milestone
(1)	(2)	(3)	(4)
	--- NOT SPECIFIED ----		

Time allowed for execution of work	:	12 Months

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

Authority to decide:	**Extension of time**	:	Institute Engineer
	Rescheduling of milestones	:	Institute Engineer
	Shifting of date of start in case of delay in handling over of site.	:	Executive Engineer (Electrical)

CLAUSE 5

Clause applicable 5 / 5A	:	5

CLAUSE 6

MB applicable: Computerized Measurement Book (CMB) / Electronic Measurement Book (EMB)	:	CMB

CLAUSE 7

Gross work to be done together with net payment / adjustment of advances for materials collected, if any, since the last such payment for being eligible to interim payment	:	100 Lakhs

CLAUSE 7A

Whether clause 7A shall be applicable	:	No

CLAUSE 10A

List of testing equipment to be provided by the contractor at site lab					
1	**NIL**	**2**	**NIL**	**3**	**NIL**
4	**NIL**	**5**	**NIL**	**6**	**NIL**

CLAUSE 10B (ii)

Whether Clause 10 B (ii) shall be applicable (Yes / No)	:	No

CLAUSE 10 C

Component of labour expressed as percent of value of work	:	15 Percent

CLAUSE 10CC (Not Applicable)

Whether Clause 10 CC shall be applicable (Yes / No)	:	Not applicable

C … Nil I ….. Nil O …… Nil

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CLAUSE 11

Specification to be followed for execution of work	:	**Part-IV Sub Station 2013**, CPWD Specification 2023 **for Electrical works corrected slips & manufacturers Specifications upto the last date of bid submission/uploading of tender.** **Detailed nomenclature of items& specifications for market rate items as per Engineer-in-charge**

CLAUSE 12

12.2	Deviation limit beyond which clauses 12.2 & 12.3 shall apply for building work / Upgradation for providing and fixing E.I work	:	100%

CLAUSE 16

Competent authority for deciding reduced rates	:	Institute Engineer

CLAUSE 18

List of mandatory machinery, tools & plants to be deployed by the contractor at site					
1	**NIL**	**2**	**NIL**	**3**	**NIL**
4	**NIL**	**5**	**NIL**	**6**	**NIL**

CLAUSE 19 C

Authority to decide penalty for each default	:	Engineer-in-charge

CLAUSE 19 D

Authority to decide penalty for each default	:	Engineer-in-charge

CLAUSE 19 G

Authority to decide penalty for each default	:	Engineer-in-charge

CLAUSE 19 K

Authority to decide penalty for each default	:	Not applicable

C … Nil I ….. Nil O …… Nil

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CLAUSE 32 (i)

Requirement of Technical Representative for SITC (s) and recovery rate

Sr. No.	Minimum qualification of Technical Representative	Discipline	Designation (Principal Technical / Technical representative)	Minimum experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36 (i)	
						Figures	**Words**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Graduate or Diploma Engineer	Electrical / mechanical	Technical Representative	5 years for Diploma and 2 years for Graduate	3	15,000	Fifteen thousand per month

Assistant Engineers retired from Govt. / IIT Delhi services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10 yearrelevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

CLAUSE 38

Authority to clause 38	:	Not applicable

C … Nil I ….. Nil O …… Nil

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COMMERCIAL AND ADDITIONAL CONDITIONS

1. GENERAL

1.1. Location: Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi.

1.2. The work shall be executed as per CPWD General Specifications for Electrical Works Part-I (Int.) 2023, Part-II (Ext.) 2023, Part-IV Sub Station – 2013, as amended upto date, relevant I.E. Rules, BIS/IEC and as per directions of Engineer-in• Charge. These additional specifications/conditions are to be read in conjunction with above and in case of variations; specifications given in theseadditional conditions shall apply. However, nothing extra shall be paid on account of these additional specification and conditions, as the same are to be read along with schedule of quantities for the work.

1.3. The tenderer should in his own interest visit the site and get familiarize with the site conditions before tendering.

1.4. No T&P shall be issued by the Department and nothing extra shall be paid on account of this.

2. COMMERCIAL CONDITIONS:

2.1. **Type of contract:** The work to be awarded by this tender shall be treated as indivisible works contract.

2.2. **Submission and opening of Tenders:**

2.2.1. The tender is in two parts:

2.2.1.1. Part-I -Technical cum Un-priced commercial Bid

2.2.1.2. Part-II-Price Bid

2.3. The tender shall be submitted online, duly completed as per NIT conditions within period of bid submission.

2.4. The tenderers are advised not to deviate from the technical specifications / item, commercial terms and conditions of NIT like terms of payment, guarantee, arbitration clause, escalation etc.

2.5. Technical cum un-priced commercial bid only shall be opened on the due date and time inthe presence of tenderers or their authorized representative who wish to remain present.

2.6. Scrutiny/evaluation of the technical-cum-commercial bid shall be done by the department. In case, it is found that the technical-cum-commercial bid of a tenderer is not in line with NIT specifications/requirements and/or contains too many deviations, the department reserves the right to reject the technical bid of such firms(s) without making any reference to the tenderer(s).

2.7. Necessary clarifications required by the department shall have to be furnished by the tenderer within the time given by the department for the same. The tenderer will have to depute his representative to discuss with the officer(s) of the department as and when so

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desired. In case, in the opinion of the department a tenderer is taking undue long time in furnishing the desired clarifications, his bid will be rejected without making any reference.

2.8. After obtaining clarification from all the tenders, the department will intimate the tenders whose technical cum commercial bids are acceptable.

2.9. The price bids of only those tenderers shall be opened whose technical bids are found to be technically acceptable. The time and date of opening of price bid shall be fixed after the technical cum unpriced commercial bid is accepted and intimated to them by post/Fax/e-mail.

2.10. The department reserves the right to reject any or all the price bids and call for fresh prices/tenders as the case may be without assigning any reason.

3. TERMS OF PAYMENTS

3.1. Payment shall be released after successful completion (Supply, Installation, Testing and satisfactory commissioning) of the work. However, R.A. bill may be preferred to the extent of prorata basis based on progress of overall work. Bidder should note that necessary documents (PAN card, cancelled cheque, GST Reg. proof and RTGS mandate form as per prescribed proforma of IIT Delhi) be submitted as soon as the work is awarded to them. Separate Contractor's Code shall be generated in IIT Delhi if the bidder is a new contractor toIIT Delhi ('Code' is perpetual in nature). Payment shall be processed after submission of Invoice and necessary documents / certificates (as mentioned in the NIT). There is a prevailing practice of pre-audit (for total tendered amount more than 3 lakhs) at IIT Delhi before releasing payment. Bidder shall have to comply all necessary documents as outlinedin the Contract as to be desired by the Auditor and or by the Accountant. It may take one to two months in the whole process (from submission / acceptance of bill in CMB / MB by the contractor upto processing by Accounts section) to release payment subject to quick compliance of all submittals by the contractor. Applicable Taxes shall be got deducted from the bill as per prevailing orders of the Government. 'GST part of the bill' shall be released after submission of proof of payment of GST, i.e. B2B challan, etc. as may be, by the contractor.

4. AWARD OF WORK

4.1. Work shall be awarded to the successful bidder only after concurrence of the **Auditor of the Internal Audit Section** of the IIT Delhi as per extant Rules of the Institute.

5. SECURITY DEPOSIT

5.1. Security Deposit shall be deducted from each running bill and final bill to the extent of 2.5% of the gross amount payable. The security deposit shall be released on the expiry of guarantee/ Maintenance period stipulated in the contract i.e 01 Years.

6. PERFORMANCE GUARANTEE

6.1. The successful tenderer shall submit an irrevocable performance guarantee of 5% of the tendered amount in addition to other deposit mentioned elsewhere in the contract for his proper performance of the contract agreement within 15 days of issue of letter of acceptance

of tender. This guarantee shall be in the form of Demand Draft/Pay order of irrevocable bank guarantee bond of any schedule bank or the State Bank of India in the specified perform a of Government Security, fixed deposit receipt pledged in favour of **Registrar, IIT Delhi** or as specified in the letter of acceptance of tender. The performance guarantee shall be initially valid up to the stipulated date of completion plus 60 days. This bank guarantee shall be kept valid till the recording of completion certificate for the work by the competent authority. This shall be released after submission of fresh bank guarantee for the comprehensive maintenance. Fresh bank guarantee shall have to be submitted @5% of the contract amount of comprehensive maintenance for the whole period of maintenance plus 60 days beyond.

6.2. Income tax, GST, labour cess & other statutory deduction etc. shall be made at source as per the prevalent laws. The deduction of Security Deposit, Income Tax, etc., shall be done after calculation for the above due payment as per clause 3 above and net payment shall reduce accordingly.

7. RATES

7.1. The rates quoted by the tenderer, shall be firm and inclusive of all taxes (including works GST & labour cess), duties, levies, etc. and all charges for packing forwarding, insurance, freight and delivery, installation, testing and commissioning etc. at site including temporary construction of storage, risks overhead charges, general liabilities/ obligations.

8. COMPLETENESS OF TENDER

8.1. All sundry equipments, fitting, unit assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections and all other items which are useful and necessary for efficient assembly and installation of equipment and components of the work shall be deemed to have been included in the tender irrespective of the fact whether such items are specially mentioned in the tender documents or not.

9. STORAGE AND CUSTODY OF MATERIAL

9.1. The agency has to make his own arrangement for storage. No separate storage accommodation shall be provided by the department Watch and ward of the storage and their safe custody shall be responsibility till the final taking over of the installation by the department.

10. CARE OF THE BUILDING

10.1. Care shall be taken by the contractor while handling and installing the various equipment and components of the work to avoid damage to the building. He shall be responsible forrepairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste material arising out of the installation from the siteof work.

11. COMPLETION PERIOD

11.1. The completion period indicated in the tender documents is for the entire work of planning, designing, approval of drawings etc, arrangement of materials & equipments, delivery at site

including transportation, installation, testing, commissioning and handing over of the entire system to the satisfaction of the Engineer-in-charge.

12. GUARANTEE

12.1. The contractor shall guarantee the entire augmentation of Transformer, TTA Panel & Bus duct work etc. as per specifications both for components and for system as a whole. All E.I work shall be guaranteed for One year from the date of commissioning against unsatisfactory performance and / or breakdown due to defective design, workmanship or material. The equipment or component, or any part thereof, so found defective during guarantee period shall be forthwith replaced free of cost to the satisfaction of the Engineer-in-Charge. In case it is felt by the department that undue delay is being caused by the contactor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of Engineer-in-Charge in this regard shall be final & binding on the contractor.

12.2. The tenderer shall guarantee among other things, the following:

12.2.1. Quality, strength and performance of the material used as per manufacturer's standards.

12.2.2. Safe mechanical and electrical stress on all part under all specified conditions of operation.

12.2.3. Satisfactory operation during the maintenance period.

13. POWER SUPPLY

13.1. Power supply shall be made available by the department at one point near the site free of cost, if required. Further, the arrangement for tapping power supply from this point shall be made by the contractor.

14. EXTENT OF WORK

14.1. The work shall comprise of entire labour including supervision and all material necessary to make a complete installation and such tests and adjustment and commissioning as may be required by the department. The term complete installation shall not only mean major items of the plant and equipment's covered by the specification but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in details in the tender documents in connection with this contract as this is a turnkey job.

15. VALIDITY

15.1. Tenders shall be valid for acceptance for a period 75 days of days from the date of submission of the Bids.

16. COMPLIANCE WITH REGULATIONS AND INDIAN STANDARDS

16.1. All works shall be carried out in accordance with relevant regulation both statutory and those specified by the Indian Standards related to the works covered by this specification inparticular, the equipment and installation will comply with the following:

16.1.1. Factories Act

16.1.2. Indian Electricity Rules

16.1.3. B.I.S. & other standards as applicable

16.1.4. Workmen's compensation Act

16.1.5. Statutory norms prescribed by local bodies like fire department, CEA, Power Supply Co. etc.

17. INDEMNITY

17.1. The successful tenderer shall at all times indemnify the department, consequent on this works contract. The successful tenderer shall be liable, in accordance with the Indian Lawand Regulations for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of erection, construction and putting into operation the equipments and ancillaryequipment under the supervision of the successful tenderer in so far as the latter is responsible. The successful tenderer shall also provide all insurance including third party insurance as may be necessary to cover the risk. No extra payment would be made to the successful tenderer on account of the above.

18. ERECTION TOOLS

18.1. No tools and tackles either for unloading or for shifting the equipments for erection purposes would be made available by the department. The successful tender shall make his arrangement for all these facilities

19. COOPERATION WITH OTHER AGENCIES AND OCCUPANTS OF THE BUILDING

19.1. The successful tenderer shall co-ordinate with other working contractors, if any and other occupants of different offices / Labs, etc., and exchange freely all technical information so as to make the execution of this work / contract smooth. No remuneration should be claimed from the department for such technical cooperation. If any unreasonable hindrance is caused to other agencies and any completed portion of the work has to be dismantled and re-done for want or cooperation and coordination by the tenderer during the course of work, such expenditure incurred will be recovered from the successful tenderer if the restoration work to the original condition or specification of the dismantled portion of work was not under taken by the tenderer himself.

20. MOBILIZATION ADVANCE

20.1. No mobilization advance shall be paid for this work

21. INTERPRETING SPECIFICATION

21.1. In interpreting the specification, the following order of decreasing importance shall be followed in case of contradictions:

21.1.1. Schedule of quantities

21.1.2. Technical Specification

21.1.3. Drawing (if any)

21.1.4. General Specification for Electrical Works of CPWD (relevant Parts)

21.1.5. Relevant BIS or other international code in case BIS code is not available.

22. POLICY OF THE INSTITUTE

22.1. **Insti**tute has a policy against **sexual harassment** and is committed to providing an environment free from **sexual harassment of women** at the workplace. Contractor shall have to abide by the policy of the Institute with due diligence. Any violation on the part of the contractor shall be dealt with the extant rules of the Institute.

C … Nil I ….. Nil O …… Nil

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SPECIAL TERMS & CONDITIONS

1. The Civil Work required in any respect shall be treated as the part of work and no additional/extra payment shall be made on account of the same.
2. The contractor executing the work shall make necessary measures/arrangements to maintain the continuity of electric supply, electric work permit, shutdowns. Nothing extra shall be paid to the contractor in lieu of the same.
3. The work shall be carried out strictly in accordance with the specifications of the NIT & complete in all respect as required at site and shall also conform to requirement of Indian Electricity Rules, CPWD guidelines, CPWD specifications as applicable in force as amended up to date.
4. The above-mentioned conditions are only indicative and not limited to them. The contractors are required to quote their rates considering the work, inclusive of all the required materials, accessories, small or big in all respects. The contractor shall not be relieved of his responsibilities of completion of work for not mentioning some particular item, material, T&P etc. in the tender document. The parts not specifically included but required otherwise for the successful completion of the work, should form part of the equipment.
5. Minor material such as nuts, bolts, washers, M.S. Hooks, thimbles, ferrules, clamp etc. require completing the job will be provided by the contractor without any extra charges.
6. The OEM must produce PERFORMANCE CERTIFICATES of TTA Panels, HT Transformer, APFC Panels, Sandwich Type Busducts for atleast one equipment working in good condition installed in government buildings, the equipment should have commissioned atleast 05 years from the date of submission of bids, the certificate shall be from the Engineer-in-charge (Not below the rank of Executive Engineer). The Performance certificate should be uploaded during the Bid Submission.

GUIDELINES TO BE FOLLOWED

Below Guidelines to be followed during the execution otherwise as specified in the CPWD, Indian Electricity Rules amended up to date.

1. Insulating mats, rubber gloves, electrical insulated shoes etc., shall be used while carrying out work at or near electrically live apparatus / Equipment etc.
2. Only insulated or non-conducting tools should be used on or near live electrical apparatus /Equipment.
3. All electrical tools used shall be "all insulated" or "double insulated" tools which do not require earthing.
4. Only persons having valid licenses should be allowed to work on electrical facilities.
5. No person should be allowed to work on live circuit. The same, if unavoidable, special care and precautions need to be taken.
6. Treat all circuits as "LIVE" unless tested and made dead.
7. Electrical "Tag Out" lock out procedure "MUST" be followed for carrying out maintenance jobs.
8. Display voltage ratings prominently with "Danger" signs.
9. Put caution / notice signs before starting the repair works.
10. All electrical equipment shall have separate and distinct connections to earth grid.
11. Proper grounding to be ensured for all switch boards and equipment including portable ones prior to taking into service.
12. Make sure that electrical switchboards, portable tools, equipment (like grinding machine etc.) don't get wet during their usage. If it happens, stop the main supply, make the tools dry and then only use them. Check proper earthing. All temporary switch boards put up at work site should be suitably protected from rain and the level of same should be high enough to avoid contact with water due to water logging.
13. Don't work with wet hands / body on electrical system.
14. Don't overload the electrical systems.
15. Use only proper rated High Rupturing Capacity fuses or circuit breakers.
16. Industrial type extension boards and Plug sockets are only to be used.
17. ELCB for all temporary connections must be provided. Use insulated 3-pin plug tops.
18. All power supply cables should be laid properly and neatly so that they don't cause hindrance to persons working and no physical damage also takes place to the cables during various construction activities.
19. All Power cables shall be properly terminated using glands and lugs of proper size and adequately crimped.
20. Never connect any earthing wire to the pipelines / structures.
21. Don't make any unsafe temporary connections, naked joints / wiring etc.

22. Ensure that temporary cables are free from cuts, damaged insulation, kinks or improper insulated joints.
23. Check at periodic intervals that pins of sockets and joints are not loose.
24. Protect electrical wires / equipment from water and naked flames.
25. Insulating mats shall be provided in the front and back end of switch boards.
26. All parts of electrical installations should be so constructed, installed and maintained as to prevent danger of electric shock, fire and external explosion.
27. Inspection and maintenance:
28. All electrical equipment should be tested as per approved procedures and commissioning inspected before to ensure suitability for its proposed use.
29. At the beginning of every work, the person using the electrical equipment should make a careful external examination of the equipment and conductors, especially the flexible cables for any physical damage, which is likely to give electric shock or damages to the equipment.
30. When work has to be done in dangerous proximity to live parts the power supply should be cut off. If for operational reasons this is not possible, the live parts should be fenced off or enclosed by qualified staff from the work area concerned.

C … Nil I ….. Nil O …… Nil

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TECHNICAL SPECIFICATIONS of LT ACB (2 Tier) Panels

1. LT ACB Panels in Two Tier conforming to relevant IS/ IEC with up-to-date amendments shall have: -
2. All the LT ACB Panels should be SCADA compatible. The release should be able to communicate on MODBUS RTU protocol using RS485 port for communication on PMS/SCADA. LT ACB Panels incoming as well as outgoing panels in double tier (4000A, 1600A) system, are required to be installed in 11/0.433 kV substations, having 2500 kVA, 1000 KVA transformers. Detailed engineering shall be done at the time of GA & GTP approval. The double (two) tier shall be arranged in such a way that workman can independently work on each breaker without making board or the other tier dead. All these panels shall be suitable for further extension on either side. The operating handles of the circuit breakers shall be at a height convenient for operating by a normal man standing on the floor.
3. The LT Panels shall be total Type Tested Assembly (TTA) (With equipment) confirming to relevant and latest IS/IEC 61439 part 1 and 2.
4. All TTA panels offered should be type tested (with equipment) as per the relevant and latest IS/IEC 61439 standards. The Temperature rise test shall be for natural ventilated and cooled panels at an ambient temperature 45° C, NO forced cooling or ventilations shall be acceptable. Bidder shall submit the temperature rise test report on TTA panel of ratings i.e. 4000A, 1600A. The type test report(s) earlier than 10years from the date of submission of bid shall not be acceptable.
5. All the panels should be factory built and of proven design duly approved by the original ACB manufacturer (i.e. original manufacturer as per IEC 61439-1).
6. Compliance with the requirement for all types of Type Tests for the purpose of Design verification shall be in accordance with IEC 61439-1. Type tests reports for compliance of Latest IEC 61439 from CPRI / ERDA/ NABL shall be submitted.
7. The switchboard/panels shall be supplied with a unique identifier (like QR code), for each switchboard to enable quick access to switchboard details like – GA of panel, BOM of panel, SLD of panel, catalogue etc.
8. TTA and PTTA panels shall be from the same panel manufacturer, the GA drawings and scheme during the approval process shall be vetted by the OEM and subsequently signed and stamped by the OEM to confirm the design, testing, manufacturing process etc. Work shall be started only after approval of Drawings and TDS from Engineer-In-Charge. The Approval and direction of the Engineer-In-Charge shall be final and binding.

PROTECTIONS:

1. In 4000A incomer 65kA ACB shall have protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC for On/Off/Trip Indication light, Elec. Interlocked. ACB Incomer release should provide under and overvoltage, current and voltage unbalance, temperature rise etc. The release should also have display of power parameters.
2. In 1600A incomer 65kA ACB shall have protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC for On/Off/Trip Indication light, Elec. Interlocked. ACB Incomer release should provide under and overvoltage, current and voltage unbalance, temperature rise etc. The release should also have display of power parameters.
3. For Outgoing ACB in addition to the item description in SOQ it shall also have standard ports, Current measurement, Voltage measurement, UV/OV, Phase unbalance with percentage loading and last 10 trip data with date and time stamping.
4. For All outgoing MCCB the make of the MCCB shall be same as ACB makes provided during the Approvals and manufacturing.
5. For Incomer Multi-function meters in addition to the item description in SOQ it shall also have Maximum demand, current and voltage THD, individual order harmonics upto 31st order.
6. **SAFETY FEATURES**

1. The safety shutter shall prevent inadvertent contact with isolating contacts when breakers are withdrawn from the Cradle. An automatically operated safety shutter shall be provided inside the breaker, which shall conceal live contacts of ACB housing, when basic ACB unit is withdrawn from SERVICE position on draw out mechanism.
2. It shall not be possible to interchange two circuit breakers of two different thermal ratings. For Draw-out breakers, an arrangement shall be provided to prevent rating mismatch between breaker and cradle.
3. For the safety of users, electrical and mechanical interlocks should be provided.
4. Draw-out breakers should not close unless in distinct Service/Test/Isolated positions.
5. All non-current carrying metallic components shall be permanently connected to earth.
6. All terminals, connections, relays and other components which may remain live when access doors are open shall be screened.

CONSTRUCTIONS OF PANELS

1. The panels shall be of robust and compact design to eliminate fire risk and shall comply with the requirements of the latest IEC/ IS standard like IEC:61439 and IEC 61641 with up-to-date amendments. The Electrical Panel shall pass the internal arc fault containment tests in accordance with IEC 61641 for respective fault current ratings of the panels for a minimum time of 0.5 sec (not applicable for pTTA panels).
2. It shall be of cubicle design, free standing type and dead front, fully interlocked and easily extensible at site on either side.

3. Adequate provisions shall be made for the escape of hot gases by providing louvers on the panels. The louvers shall be covered with perforated M.S. sheets and shall be located such as to direct the hot gases away from operating personnel. Ventilating louvers along with filters, where required, shall ensure compliance of IP requirement shall be provided. It should be provided in such a way that it is easily accessible for cleaning or self-cleaning filters should be provided.
4. The door in front of all ACB's shall be separately provided and these shall not form an integral part of the drawn-out portion of the ACB, so that entry of rats and vermin into the panels shall not be possible, even when the circuit breaker is drawn out. The switchgear assembly/sub-assemblies or panels shall be termite and rodent proof. Sheet thickness should be minimum 14 guage (2mm) and powder coating thickness should be minimum 60-70 microns.
5. Glanding plates, glanding brackets and extension boxes shall be removable and shall be of adequate size for the particular cables to be terminated. The cables shall not put any stress on to the glanding plate and shall be secured adequately.
6. Anti-condensation heaters shall be provided adequate rating as per the dimension of the cubicle. Suitable panel light and 5/15A socket shall be provided in each panel.
7. End connections/adopter(s) for connecting bus ducting with terminals of ACB is also to be supplied along with panels.

INTERLOCKING AND OTHER ARRANGEMENTS: - Sequence type strain free interlock shall be provided so that:

1. The ACB shall trip automatically, when it is withdrawn from SERVICE to TEST or TEST to ISOLATED position, if it is in ON position.
2. It shall not be possible for the breaker to be switched ON until it is either in fully INSERTED position or in TEST position or it is in fully ISOLATED position. A mechanical indication of breaker position with respect to the cradle shall be provided to be visible, even if the panel door is in CLOSED position.
3. A safety latch shall be provided to ensure that the movement of circuit breakers, as they are withdrawn, is checked before it is completely out of cubicle, thus preventing its accidental fall due to its weight.
4. ACB should preferably have facilities for carrying out maintenance without physically removing the breaker from panels.
5. It shall be possible to bring the ACB to SERVICE/TEST/ISOLATED position while the panel door is closed.
6. The ACB shall be provided with a door interlock i.e. the door should not be open when circuit breaker is closed and the breaker should not be closed when door is open.
7. Electrical and mechanical interlocking shall be provided between incomer and bus coupler, to avoid short circuit of both the supply sources (incomers).

BUSBAR: -

1. Busbar shall be made of EC grade Aluminum as per relevant IS and of uniform rectangular cross section throughout the lengths with a suitable current carrying capacity for phase and neutral. Busbar shall be designed with a suitable current density to take into account temperature rise and magnetic stresses within limits of relevant standards, but in no case it should be more than 0.8 ampere/square mm.
2. Fish plates and necessary hardwired (adopter etc.) as required for coupling the main bus bar of TTA panel shall also be provided (as per IEC 61439-1 and 2).
3. Similarly, the designed rupturing capacity of the busbars and its chamber shall not be less than 65 kA for 1 Sec. The busbar and other current carrying parts shall be properly supported by SMC/DMC insulators spaced at suitable intervals and insulated with shrinkable special grade sleeving and suitable color coded at regular intervals. The complete assembly shall be capable of withstanding the maximum mechanical stresses to which it may be subjected to under fault conditions. The bus bar shall be provided in the upper portion of panel.
4. The material for phase identification sleeves shall be non-fading colour of proven design to be decided by the Engineer In Charge and use of adhesive label shall not be acceptable.

OTHER REQUIREMENTS AND CONDITIONS

1. The Contractor/bidder shall also submit the QAP, FAT (Factory acceptance test) protocol for approval of the Engineer submitting details of all such tests which shall constitute the FAT, with clarity on the acceptance /rejection criteria in co-relation to relevant standards.

2. The Contractor shall also submit the SAT (Site acceptance test) protocol for approval of the Engineer submitting details of all such tests which shall constitute the SAT, with clarity on the acceptance/rejection criteria in co-relation to relevant standards.

3. The In-House Testing Facility of the Manufacturer shall be NABL Accredited.

GUARANTEED TECHNICAL PARTICULARS

(To be filled by OEM of TTA Panel)

S. No.	Details	Minimum required specification	OEM Particulars / Remarks
1.	Application	: Indoor	
2.	Type	: Cubical, Metal enclosed	
3.	Degree of Protection	: IP 42 (Min.)	
4.	Rated Voltage	: 415 V	
5.	Design Ambient Temperature	: 45° C	
6.	Temperature rise over an ambient temperature	: As per IEC 61439	
	Busbar		
7.	Number phase / wires	: 3 phase, 4 wire	
8.	Continuous Current	: As per design of ACB	
9.	Frequency	: 50 HZ	
10.	Fault level	: 65 kA for 1sec.	
11.	Material	: Aluminium	
12.	Bus bar Support	: SMC/ DMC	
	Earthing		
13.	Material	: Copper	
14.	size	: as per Specification	
15.	Insulation level	: As per standard	
16.	Painting	: Epoxy Powder Coated	
17.	Control Voltage	: 230 V AC & 220V DC	
	Control wiring		
18.	C.T. circuits	: 2.5 sq.mm Cu. Multi stranded	
19.	Others	: 1.5 sq.mm Cu. Multi stranded	
20.	Voltage Grade	: 660 V	
	Construction		
21.	Impact Rating	IK 10	
22.	Corrosion Resistance	As per IEC 61439	
23.	Internal Arc	65 kA for 0.5 Sec. or higher as per **IEC- 61641**	
24.	Type of switchboard Installation	Draw out type	
25.	Mounting	Floor (free standing)	
26.	Lifting arrangement	To be provided	
27.	Additional channel frame for embedment in floor / foundation	An additional 75mm Base frame to be provided.	
28.	Future extension	To be provided, on Both sides	
29.	Panel assembly	Type tested assembly (TTA)	

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

TECHNICAL SPECIFICATION OF SANDWICH TYPE LT BUS DUCTING

1. The sandwich type Bus duct shall be of compact design, maintenance free and Suitable for outdoor application confirming to IP 65 as per IEC 60529. A type tested low voltage switchgear and control gear assembly as per IEC 61439 (1 & 6) shall only be acceptable. The complete assembly shall include rising mains, straight length, bends, joints, expansion joints, offset, flanges, Copper flexible, overlapped jointing arrangement with indication of OEM recommended Torque during tightening, thrust pads, flexible tinned copper links at terminations / joints, flexible rubber bellow and adopter box on flange terminations at Transformer side, universal fixing brackets, supports etc. in line with the site Requirements. Bolted joints shall be provided with suitable bolts, spring washers, lock nuts etc. in line with the type tested design. The bus duct shall be reusable and can be dismantled without any loss and breakdown of material.
2. The Sandwich type bus ducting should be suitable to take continuous 100% loading in all positions. The temperature rise of Bus bars shall not exceed 55°C over the 45°C ambient at enclosure. Calculations shall be submitted, demonstrating rating and temperature rise.
3. The minimum rated RMS short circuit withstand current for the Bus bars shall be 65 kA for 1 sec. Bare GI earth bus of minimum size 2 runs 25 x3 mm shall be provided along the length of the bus duct. The Impedance balance shall be ensured among the phases for achieving equal current sharing and voltage balance.

CODES AND STANDARDS

1. The equipment specified in the specification shall be designed, manufactured and tested in accordance with latest relevant Indian standards IS or IEC codes. In the event of any contradiction between this specification and IS/IEC codes then the more stringent of the two shall govern.
2. IEC 61439 (part-I): Low voltage switchgear and controller gear assemblies IEC 61439 (Part-6): bus trunking systems.
3. IEC 60529: Degree of protection provided by enclosures.
4. Material description and construction features:
5. Busbars and Joint:
   i. The bus bars shall be fully round edge and made of reputed make EC grade Aluminum, all joints should be silver plated. Each bus bar shall be individually insulated by means of minimum class F insulation. If required, the bus bars shall be suitably treated at termination ends and bimetallic strips can be used. Neutral conductor shall have the same size as phase conductors. The Sandwich Bus duct system shall be manufactured in convenient lengths to facilitate easy transportation and installation. Each section shall be provided with suitable brackets at convenient intervals for fixing to the wall/roof support. Expansion joints may be provided as per the manufacturer's design and recommendation. Cross-section of the bus bar and current density shall be in accordance with the Type tested assembly for the rated capacity. Flexible tinned copper

links shall be used for terminations to the transformer/Panel.

Enclosure:

1. Material: The enclosure shall be made up of Electro-galvanized Sheet steel.
2. Process: After proper metal pre-treatment (7-tank process) the enclosure shall be hot dip galvanized/Electro-galvanized Sheet steel. The same shall be duly coated with epoxy powder paint of approved shade. The minimum thickness of coating shall not be less than 50 micron.
3. Supports and Canopy
4. The supplier shall use the purpose made fixing brackets/mountings. The supporting structure shall have adequate space and strength for laying additional one run of similar bus duct and stresses under short circuit (65kA for 1 sec.). The supplier is requested to submit the drawings and design details of required supporting structure. The outdoor bus duct shall be provided with canopy made out of CRCA sheet. This CRCA sheet shall be processed under 7-tank metal pre-treatment process before painting. The canopies and supports shall be duly painted with polyurethane paint of approved shade. Hanger spacing shall be noted on layout drawings and shall not exceed manufacturer's recommendations.

Inspection & Testing:

1. A comprehensive pre-dispatch inspection including following Acceptance tests in line with IEC 61439 (1 & 6) shall be conducted prior to dispatch at manufacturer's works / approved testing laboratory in presence of authorized representative(s). Typical section- samples with each of the items of complete sandwich bus duct system including coupling, straight sections, interconnecting sections; bends etc shall be offered for these tests.
2. Visual Inspection and Physical measurements for conformity to the specifications.
3. Measurement of Insulation Resistance between Bus bars and Bus bars & earth with 1KV Megger.
4. mV (milli-volt) drop test of one joint.
5. High Voltage withstand test at 3.5kV; 50 Hz for one minute
6. Any other test as specified by the OEM.

Packing and Transport:

1. The Packing and transport is the responsibility of the supplier. The Company shall furnish the list of packing materials containing items within it along with its weight inside. The company shall do packing in prefabricated wooden crates and on arrival at site material shall be inspected by both supplier and IITD representatives.
2. Equipment shall be packed and protected so as not to suffer deterioration, damage or breakage during shipment, Tran shipment or storage in a tropical climate. All lifting/handling points shall be clearly marked.
3. Each package shall be properly labelled to indicate the type and quantity of material it contains along with the Purchase Order number, dimensions and any other necessary data

to identify the equipment and relate it to the Purchase Order. The supplier shall not ship the equipment without prior approval of the purchaser's representative and subsequent written instructions to do so.

Installation, testing and commissioning:

Installation at site:

1. Sandwich Bus duct system shall be installed as per the recommendation of the manufacturer. The bus bar chamber should not have any access left open to prevent entry of insects inside it. The supplier shall depute their specialist at site during the installation, testing and commissioning period for attending the related issues etc.
2. Starting from activities of transport of the material within the site, supplier shall arrange all the required material, handling equipment and requisite manpower to carry out the installation work at site.
3. The installation of the Bus ducts has to be carried out with necessary rising mains, Straight length, bends, joints, expansion joints, offset, flanges, flexible lengths, Overlapped jointing arrangement (as required at site) with indication of proper pressure during Tightening, thrust pads, spring hangers, flexible tinned copper links at terminations, Flexible rubber bellow and adopter box on flange terminations at transformer side, Universal fixing brackets, supporting system which incorporate MS suspender (minimum 10 nos.),Steel structure having angles of adequate sizes, channel etc. and should be generated from ground/ External wall/ceiling of the substation building considering the factors of ease of Maintenance & replacement of particular section etc.
4. The Supporting and either side Termination system drawings shall be submitted for the approval before Execution. Clearances to be maintained at site: - Minimum 25 mm from wall and 300 mm from floor.

Testing and Commissioning:

1. All the routine tests shall be repeated at site after the completion of Installation of Bus duct System including HV test, Insulation resistance and mill volt – drop as per relevant IEC/IS and duly signed report shall be submitted. The endurance test for 96 hours with available load/rated load shall be considered as part of commissioning. The supplier shall arrange all the required manpower, equipment etc. to carry out the testing and commissioning work at site.

Guaranteed Technical Particulars

(To be filled by OEM of sandwich type Busduct)

DESIGN PARTICULARS	Minimum required specification	OEM Particulars / Remarks
Compliance of Standard	IEC 61439 (1&6) & IS 8623 (1&2)	
Type of Bus Duct	Aluminium sandwich insulated bus trunking	
Independent Certification Authority	CPRI / /ERDA / NABL	
Bus Bar Arrangement	Sandwich Type	
Bus Bar Rating	Suitable & As per design of LT panels	
Bus Bar configuration	3 Phase +100 % Neutral + 50 % Integral Earth	
Rated operational Voltage	1000 Volts, AC	
Rated Insulation Voltage	1000 Volts, AC	
Rated Dielectric voltage	3.5 KV r.m.s	
Rated impulsive withstand Voltage	12 kV (1.2/50 us)	
Rated frequency	50 Hz	
Bus duct Enclosure Material	2.0 mm GI/ Electro-galvanized Sheet steel	
Surface Coating on Enclosure	Epoxy polyester power coated	
Bus Bar Material (Phase/Natural)	99.9% pure ETP grade Aluminium (full round edge) 99.5% pure	
Bus Bar Material (Internal Earth)	GI 25X1.5 mm /As per OEM design tested	
Bus Bar Material (External Earth)	GI 25x3 mm	
Bus bar Insulation	Minimum class F insulation	
Ingress protection	IP 65	
Joint	Unlock Joint (with isolation and temper proof shear off nut)	
Type of Cooling	Natural Air Cooled	
Installation	Indoor and Outdoor both	
Short Time Current Rating	65 kA (RMS)for one second	

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

TECHNICAL SPECIFICATION OF OIL TYPE TRANSFORMER

1. Total losses off the Transformer shall be at 50% and 100% of rated load will be as per IS1180-part1 of energy efficiency level II.
2. The Transformer shall be manufactured having CRGO core grade MOH or better.
3. The Flux density at rated voltage and rated frequency shall be 1.688T
4. The Inhouse Laboratory of the Transformer Manufacturer shall be NABL accredited.
5. The Transformer No-load current shall be within 1% to 2% of FLRC.
6. The Transformer winding Copper shall have purity Cu 99.9%, electrolytic grade.
7. The Transformer Short time withstand at terminal of bushing shall be for 2 sec.
8. Transformer tank shall be conventional type.
9. Painting procedure shall be as per relevant IS or applicable standards.
10. Creepage distance shall be min. 25 mm/KV.
11. The Over-fluxing withstand capability of Transformer shall be 110% continuous, 125% for 1 minute and 140% for 5 seconds.
12. Temperature rise for offered transformer Shall be 55/60C deg. C (Oil/winding temp.) over av. ambient temp. of 50C as per IS 1180 (Part-3).
13. Noise level for offered transformer will be as per NEMA TR1 only.
14. Overloading capacity of offered transformer will be as per IS 6600 only.
15. Tank pressure, Vacuum withstand capability & minimum clearances for offered transformer as per CBIP manual.
16. Encloser for Marshalling box will be of protection class IP65.
17. Transformers are offered with insulation of class A.
18. Protective Accessories: Double float Buchholz Relay, Oil temperature Indicator OTI, Winding Temperature Indicator WTI, Marshalling Box & Silica gel breather Shall be provided with transformer.
19. The cost of all routine tests as per IS1180 and the type testing of Transformer like Unbalanced current test, Lighting Impulse test and Partial discharge measurement, Special Test of Temperature Rise shall be inclusive of rates for all the Transformers.
20. Necessary Protection like REF shall be included and the material required for the protection including NCT, NGR, Spares, Hydraulic Jacks, cable gland, Terminal Connectors, tools & tackles and lugs shall be in the scope of the Bidder, the material shall be as per the recommendation of the Transformer OEM.
21. The Bidder shall provide 10% extra Transformer oil on FOC basis.
22. The Erection and Commissioning of the Transformer shall be performed only in the presence of the Transformer OEM Experienced Engineer.
23. OEM shall dispatch main tank with mineral oil (filtered) duly filled while conservator & radiator shall be dispatched in dismantle condition with corresponding un-filtered oil in separate oil barrels.

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

24. Inter-panel wiring between OLTC DM box and RTCC panel as suitable at site shall be part of scope of the bidder and shall be completed during the commissioning of the Transformer.
25. The Transformer shall support SCADA for OTI, WTI alarm and trip, Tap Position indicator signals (RS 485, 4-20 mA).
26. OLTC Oil tank shall be sterile. The easter Oil shall be tested from a NABL accredited Lab.
27. For REF protection, NCT shall be included and the details for the same shall be provided during the drawing approval.
28. The Transformer and all its accessories shall be PU Painted after due process as per the IS standard, the thickness of the PU shall not be less than 80 microns.
29. The thickness of the CRCA for RTCC and Marshalling Box shall be 14 gauge (2 mm).
30. The On Load Tap changer of The Transformer shall have Line drop compensator with adjustable R and X elements.
31. The OLTC shall have a feature of Back to Normal Tap Position due to sudden power supply failure.
32. For Transformer Core CRGO Mill Certificate shall be provided by the Manufacturer during the Transformer Inspection at Factory.
33. The In-House Testing Facility of the Manufacturer shall be NABL Accredited.

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

GUARANTEED TECHNICAL PARTICULARS

(To be filled by OEM of Transformer)

	TECHNICAL SPECIFICATION SHEET	Minimum required specification	OEM Particulars / Remarks
1	Name of manufacturer		
2	Service	Outdoor	
3	Applicable Standard	IS1180 IS 2026 as applicable	
4	Rating,KVA		
	a) KNAN	**2500**	
	b) ONAF		
5	Rated no load voltage		
	a) HV ,kv	11	
	b) LV ,kv	0.433	
6	Rated current in Ampere		
	a) HV Amps	131.22	
	b) LV Amps	3333.53	
7	Frequency	50 Hertz	
8	**Temp. rise oil/wdg. Over ambient of 50C as per IS1180-3 type B is considered with natural ester oil & TUP paper**	**55/60**	
9	Number of phases	3	
10	Vector Group reference	Dyn11	
11	Insulation - HV	Uniform	
12	Insulation - LV	Uniform	
13	BIL - HV Impulse withstand/ power frequency	75 kVp / 28 kVrms	
14	BIL - LV Impulse withstand/ power frequency	- kVp / 3 kVrms	
15	Terminal arrangement,HV/LV	Cable Box / Bus Duct	
16	Taps on winding		
	a) Off ckt,/On load	OLTC	
	b) Tapping range	+10% to -10%	
	c) No. of steps	16 steps @ 1.25%	
	d) Tap Switch Make	OLG / CTR	
17	Performance figures at 2.5MVA base	**Energy Efficiency Level II**	
	a) Total Losses at 50% loading in KW MAX	As per IS 1180	Value to be provided by OEM
	b)Total Losses at 100% loading in KW Max	As per IS 1180	Value to be provided by OEM
	c) Impedance,Z% (IS Tol)	6.25	
18	% Efficiency at 75degC/Unity P.F.		
	a) At 100% load	As per IS, CBIP	Value to be provided by OEM
	b) At 50% load	As per IS, CBIP	Value to be provided by OEM

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

19	% Efficiency at 75degC/0.8 P.F.		
	a) At 100% load	As per IS, CBIP	Value to be provided by OEM
	b) At 50% load	As per IS, CBIP	Value to be provided by OEM
20	% Regulation at full load		
	a) Unity P.F.	As per IS	Value to be provided by OEM
	b) At 0.8 P.F.	As per IS	Value to be provided by OEM
21	Paint Type	PU Polyurethane	
22	Insulating Oil	As Per IEC 62770	
23	10% extra oil	Applicable	
24	Overloading Of Transformer	As Per IS:6600	
25	Dimensions in mm approx. (10% tol.)	As per OEM	Value to be provided by OEM
26	Max. hotspot temperature over yearly weighted average ambient temperature of 32 deg C	98 deg C	
27	a) Wt. of core of Core & Copper in Kg	As per IS / OEM	
	b) Wt. of oil in Kg	As per IS / OEM	
	c) Wt. of tank & fittings in Kg	As per IS / OEM	
	d) Total wt. of transformer in Kg	As per IS / OEM	
28	Wt. of heaviest package in Kg	As per IS / OEM	
29	Max. efficiency	As per IS, CBIP	
30	Load corresponding to max. efficiency at UPF	As per IS	
31	Disconnecting Chamber is included for HV cable box	Inclusive	
32	Transformer Oil	Savita / APAR	

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

Below are the Accessories to be provided with the Transformer and the rates shall be inclusive: -

	List Of Accessories	
1	Tap switch	1 No.
2	Conservator with plain oil level gauge and oil drain plug	1 No.
3	Silica Gel Breather with oil seal	1 No.
4	Air release Plug	1 No.
5	Top filter valve	1 No.
6	Bottom Filter-cum-Drain Valve	1 No.
7	First filling oil as per IS 335	1 No.
8	Rating Diagram & terminal marking plate	1 No.
9	CGPISL Monogram plate	1No.
10	Inspection cover	As per OEM
11	Earthing Terminals	2 no.
12	Thermometer pockets	3 No.
13	Lifting Lugs for complete transformer	4 No.
14	Plateform lug	1 no.
15	Detachable / Fixed type Radiators	1Set
16	Bi-directional Roller	4 No.
17	Jacking Pads	4 No.
18	Additional Bare LV Neutral when LV is 433V	1 No.
19	AVR (Microcontroller)	1 No.
20	RTCC Panel (IP-42) 2 mm of CRCA	1 No.
21	Oil Surge Relay for OLTC	1 No.
22	Shut of calves on both sides of buch. relay	2 No.
23	WTI CT secondary terminal	1 No.
24	4” Magnetic Oil Level Gauge MOG with low level alarm contacts	1 No.
25	6” Oil Temperature Indicator OTI with alarm & trip contacts	1 No.
26	6” Winding Temperature Indicator WTI with alarm & trip contacts	1 No.
27	Pressure Relief Device with trip contact/ Explosion Vent	1 No.
28	Double Float Buchholz relay with alarm & trip contacts	1 No.
29	Marshalling Box (IP-65) Single Window with OTI/WTI contacts	1 No.
30	12 Channel Window Annunciator in RTCC Panel	1 No.

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

ANNEXURE - 1

<< Organization Letter Head >>

DECLARATION

I / We,_____hereby declare that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. I / we have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

1	Name & Address of the bidder	**:**	
2	Phone	**:**	
3	E-mail	**:**	
4	Contact person name	**:**	
5	Mobile number	**:**	
6	GSTIN number	**:**	
7	PAN number	**:**	
8	UTR no. [if deposited online] for EMD	**:**	
9	DD / FDR / Banker's Cheque No. [if uploaded scanned copy] for EMD	**:**	
	BANK DETAILS of the Bidder		
10	Bank name	**:**	
11	Branch address	**:**	
12	Branch telephone no.	**:**	
13	MICR Code of the bank	**:**	
14	IFSC code	**:**	
15	Bank Account no.	**:**	
16	Type of account	**:**	
17	Pl attach one cancelled cheque	**:**	

We further declare that our organization has not been blacklisted / delisted or put to any holiday by any Institutional agency / Govt. Department / Public Sector Undertaking in the last three years.

(Signature& name of the bidder)
Seal of the bidder

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

ANNEXURE – X1

UNDERTAKING FROM OEM / MANUFACTURER (SELF CERTIFICATION IN CONFORMITY TO RELEVANT CODES AND STANDARDS ISSUED BY BIS)

We, M/s ..... (with name of OEM and complete address) hereby certify that the entire sub-station installation including components, safety devices, various types of controls etc., testing, inspection, operation & maintenance shall conform to relevant Codes, Standards, code of practices, guidelines, safety rules, inspection manual(s), rules issued by Bureau of Indian Standards, as amended up to the last date of receipt of tender as per the following list of BIS Standards.

1. IS/IEC 61439 part 1 and 2 with up-to-date amendments
2. IEC 61641 with up-to-date amendments
3. IEC 60529 with up-to-date amendments
4. IEC 61439 (1&6) & IS 8623 (1&2) with up-to-date amendments
5. IS 1180 (Part-3). with up-to-date amendments
6. IS 6600 with up-to-date amendments
7. IS1180 IS 2026 as applicable with up-to-date amendments
8. IEC 62770 with up-to-date amendments

In addition to the above BIS Standards the entire installation and its individual components shall comply to all other relevant codes / Standards as applicable.

For M/S……

…….

(Authorized signatory of OEM/ manufacturer)

Note: To be furnished on a 'Non-Judicial' stamp paper worth Rs. 200/-.

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

ANNEXURE – X2

UNDERTAKING FROM TRANSFORMER, PANEL, BUSDUCT MANUFACTURER

(To be submitted prior to the supply of transformer, panel, busduct)

We stand guarantee for availability of spares for the entire life of the installation of transformer, panel and busduct a period of minimum …….years after completion of the installation or handing over of the lift whichever is later.

(Note: period shall be up to 20 years)

For M/S ……,

……..

(Authorized signatory of transformer, panel, busduct manufacture

Note: To be furnished on a 'Non-Judicial' stamp paper worth Rs. 200/-

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

FORM 'C'

DETAILS OF ALL WORKS OF SIMILAR CLASS COMPLETED DURING THELAST SEVEN YEARS ENDING LAST DAY OF THE BID SUBMISSION

S. No.	Name of work / project and location	Owner or sponsoring organization	Cost of work in crores of rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation/arbitration cases pending/ in progress with details*	Name and address/ telephone number of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

- Indicate gross amount claimed and amount awarded by the Arbitrator.

Signature of Bidder(s)

FORM 'C-1' PROJECTS UNDER EXECUTION

S. No.	Name of work / project and location	Owner or sponsoring organization	Cost of work in crores of rupees	Date of commen cement as per contract	Stipulated date of completio n	Upto date percentage progress of work	Slow progress if any and reasons thereof	Name and address/ telephone number of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

Signature of Bidder(s)

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

GENERAL SPECIFICATIONS

1.0 The work shall be carried out as per CPWD general Specifications for Electrical Works Part – I, II & Part-IV Sub Station – 2013 as amended upto date along with the following changes, relevant IE Rules and as per directions of Engineer-in-Charge.

Substation Electrical Works		
S.No.	**Material**	**Preferred makes of Material**
1	Air Circuit Breaker	Schneider / LK / Siemens / ABB
2	Panels- Type Tested Assemblies (TTA)	ABB / Schneider / LK / Siemens / Rittal
3	LT Panel Builder (TTA & PTTA)	Advance / Tricolite / Milestone / Marine / Asiatic
4	Transformer (Oil Type)	Schneider / Crompton Greaves / Siemens / ABB / Bharat Bijlee / BHEL
5	33 / 11 KV VCB HT Panels	Schneider / ABB / Siemens / LK
6	APFC Panel	Schneider / ABB / Siemens / LK / Rittal
7	Cables Glands	Comet / Dowel / Braco / Siemens
8	Maintenance Free Earthing & Lightening protection System	Altec / Teksai / OBO Betterman / Jef Techno / ABB / Cape
9	Protection Relays	Schneider / ABB / Siemens
10	BMS	ABB / Schneider / Siemens / Allen Bradley / GE
11	SCADA System	ABB / Schneider / Siemens / Allen Bradley / GE
12	MCB(10KA)/ Isolators & MCB DB with End Box.	Legrand /Siemens/ LK / ABB/ Schneider
13	MCCB	ABB/ Legrand /Schneider / LK/ Siemens
14	MCCB BOX	Legrand / Siemens/ LK / ABB/ Schneider
15	Distribution Board	Legrand /Siemens/ LK / ABB/ Schneider
16	XLPE Alumium/ Copper conductor Armoured cable	Polycab/ Finolex/ / KEI/ Universal
17	Multifunction Meter	LK/ AE/ Schneider/ Rishabh / Secure / Fluke / Conzerv
18	Ammeter	LK/ AE/ Universal/ Rishabh/ Meco/ Kaycee/ Enercom / Conzerv / Secure/ Fluke
19	Voltmeter	LK/ AE/ Universal/ Rishabh/ Meco/ Kaycee/ Enercom / Secure / Fluke / Conzerv

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

20	Frequency Meter	Digitron/ AE/ Rishabh/ Meco/ Keltron/ Fluke / Conzerv / Secure.
21	CT's	LK/AE/ KAPPA/ Precision/ Marshal / Pragati
22	Selector Switches	LK/AE/ KAPPA/ Pragati/ Marshal/ Precision
23	Contractors	Legrand /Siemens/ LK / ABB/ Schneider
24	Push button & Pilor lamps	BCH/ L K/ Siemens/ Vaishno
25	LED indicating Lights	L K/ Siemens/ Kaycee/ Crompton/ Vaishno
26	Cable raceway floor/ wall mounted & Accessories(MS/G.I)	Legrand/ BEC/ Honeywell/ OBO Betterman.
27	Sandwich Bus trunking/ Rising Main	Siemens / C&S/ L K/ Schneider/ ABB / Anant Power (Advance)
28	HT Termination Cable joint Kit	Raychem/ M-Seal/ Densons/ 3M
29	Batteries	Panasonic / Exide / Amaron / Amarraja
30	Batteries Charger	Amarraja / Statcon / Chhabi / AE

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

BID SUBMISSION CHECK LIST

ONLINE BID SUBMISSION:

The Online bids (complete in all respect) must be uploaded online in **two** Envelops as explainedbelow:-

Envelope – 1 (Following documents to be provided as single PDF file)			
Sl. No.	**Documents**	**Content**	**File Types**
1	**Technical Bid**	Annexure – 1 duly filled in and got signed	.PDF
2		Annexure – X-1, X-2, C-1, C-2 and Guaranteed Technical Particulars for TTA Panel, Transformer & Busduct) duly complied and got signed (on OEM Letter Head)	.PDF
3		Enlistment certificate of composite category.	.PDF
4		EMD submission proof with undertaking	.PDF
5		The Authorization Certificate from the OEM shall be Bid specific, Tender Specific Authorization Certificate on the Letter Head of OEM, to be uploaded during the online submission of Bid.	.PDF
6		Certificate of work experience as desired	.PDF
7		Certificate of GST Registration with undertaking	.PDF
8		Affidavit as per provision of the clause 1.2.2 of IITD-6	.PDF
9		Acceptance to execute INTEGRITY PACT	.PDF
10		IITD 7 / 8 duly signed	.PDF
11		Any other document as specified in the NIT	.PDF
Envelope – 2			
Sl. No.	TYPES	Content	
1.	**Financial Bid**	Price bid should be submitted in BOQ format.	.EXL

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

SCHEDULE OF QUANTITY

Name of work: Augmentation of Transformer Capacity along with associated switchgears at Civil, Chemical, MSB, Computer and 99B Substation at IIT Delhi.

S.No.	Description of items. (A)	Qty	Unit	Rate.	Amount
1	Supplying and making end termination with brass compression gland and aluminium lugs of following sizes of PVC insulated and PVC sheathed armoured aluminium conductor cable of 1.1 KV grade as required				
1.1	3½ X 240 sq. mm (62mm)	12	Each	1,160.00	13,920.00
1.2	3½ X 300 sq. mm (70mm)	10	Each	1,330.00	13,300.00
1.3	3½ X 400 sq. mm (82mm)	10	Each	1,713.00	17,130.00
2	Supplying and making straight through joint with heat shrinkable kit including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as requir				
2.1	3½ X 240 sq. mm	6	Each	5,283.00	31,698.00
2.2	3½ X 300 sq. mm	5	Each	6,599.00	32,995.00
2.2	3½ X 400 sq. mm	5	Each	8,541.00	42,705.00
3	Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required.				
3.1	3 X 300 sq. mm	8	Each	17414.00	139,312.00
4	Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required.				
4.1	3 X 300 sq. mm	6	Each	44211.00	265,266.00

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

5	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc.direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required.				-
5.1	90 mm dia (OD-90 mm & ID-76 mm nominal)	80	Metre	336.00	26,880.00
5.2	120 mm dia (OD-120 mm & ID-103 mm nominal)	50	Metre	417.00	20,850.00
6	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 Meter long etc. with charcoal/ coke and salt as required.	14	Each	8351	116,914.00
7	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	24	Set	15004	360,096.00
8	Supplying and laying 32 mm X 6 mm copper strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50mm)	25	Metre	1494	37,350.00
9	Supplying and laying 25 mm X 5 mm copper strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50mm)	25	Metre	1024	25,600.00
10	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	50	Metre	160	8,000.00

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

11	Providing and fixing 32 mm X 6 mm copper strip in 50 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required	50	Metre	2399	119,950.00
12	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	50	Metre	1638	81,900.00
13	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	100	Metre	755	75,500.00
14	Providing and fixing 32 mm X 6 mm copper strip on surface or in recess for connections etc. as required.	75	Metre	1716	128,700.00
15	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	75	Metre	1246	93,450.00
16	Providing and fixing 25 mm X 5 mm GI. strip on surface or in recess for connections etc. as required.	150	Metre	287	43,050.00
17	Providing and fixing 6 SWG dia GI. wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ subnnain wiring/ cable as required.	200	Metre	50	10,000.00
18	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc. as required.	5	Metre	2245	11,225.00
19	Jointing copper/ G.I. tape (with another copper/ G I tape, base of the finial or any other metallic object) by riveting / nut bolting/ sweating and soldering etc as required.	50	Each	139	6,950.00
20	Supplying, installation, testing and commissioning of Level-2 (as amended upto date for higher side) Oil type, power Transformer of 2500 KVA rating, 11/0.433 KV, 3 phase, 50 Hz, Dyn 11 vector group, outdoor KNAN [K(K-Class insulating liquid) Natural Air Natural] copper wound transformer (Electrolytic grade 99.9% pure copper, Core				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	made of first grade Cold Rolled Grain Oriented (CRGO) Core grade MOH or better), Dielectric material shall be type -A copper wound transformer with 55/60 0C temperature rise of oil/ winding (as per IS 1180-Part-3) with ON load tap changing for variation on HV side as +5 % to -15% @1.25% each per tap position (total 16 steps), RTCC, AVR, associated with winding temperature indicator / controller with 6.25% impedance at 75 0C, total allowable losses as per IS 1180 (efficiency level-2) as per amended upto date at 50% and 100% loading, Oil temperature indicator, magnetic oil level gauge, Buchholz relay, silica gel breather, marshalling box, Top oil filter valve, inspection cover, bottom oil filter cum drain valve, air release plug, conservator with oil filling cap and drain plug, explosion vent, bi-directional wheels including first filling of filtered dehydrated Synthetic organic Ester oil, i/c supplying and grouting of suitable M.S. Channel with all accessories and transformer shall be confirming to IS : 2026 (Part 1 to Part 5), IS : 1180 (Part-3) and duly ISI Marked and as per CPWD specifications complete in all respects etc as required at site, with HV side porcelain bushing and LV side bushing of epoxy (as per IS 2099 LV IS 3347), MV connection chamber, outdoor cable end box (suitable for 11KV grade UG cable on HV side and 3.5 x 400 sqmm. UG cable or outdoor BBT on LV side) with neutral brought out separately, complete with standard fittings and accessories like oil level indicator, dehydrating SILICA gel breather, air release device, drain and filter valve with blanking plate, suitable mounted on MS channel including supplying and routing of suitable MS channel, complete in all respect, generally comparing to IS:1180 (part 1 to part 5) energy efficiency level 2 as amended upto date and as per above specification with complete as required. BIS and BEE Certification for Ester Oil Transformer to be submitted.				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

20.1	The transformer manufacturer must have an in-house dust-free core cutting and processing unit in the same location as transformer manufacturing. The maximum flux density in any part of the core and yoke at rated voltage and frequency shall be such that the flux density with +12.5 percent combined voltage and frequency variation from rated voltage and frequency does not exceed 1.9 Tesla.The core shall be slit using automated machine and use of hand shear is not allowed. The Burr level should be less than 10 micron. All routine and type tests shall be done in NABL accredited lab and Bidder should have in-house NABL accredited testing facility. The bidder to provide the NABL certification in line with ISO/IEC-17025, also ISO 5001certification. Transformer can monitor these data :- Water in oil, temperature, vibration, acoustic and RF noise. Transformer can anticipate fault detection:- • Load • Water content • Temperatures • continuous Partial Discharge (PD) • Vibration.	**5.00**	**Each**	**7555267.00**	37,776,335.00
21.0	**MAIN LT PANEL-1 (CIVIL SUBSTATION)**				
	Design, manufacture, Supplying, fixing. testing & commissioning the following sheet steel cubicle type panels fabricated from 14 gauge CRCA sheet, dust and vermin proof, indoor type TPN Main board with hinged lockable doors, suitable for 415V, 3 phase 4 wire 50Hz AC supply with separate cable alley, space heater with thermal controlled and lockable bus-bar chamber and including supplying and fixing following switchgears and accessories, inter-connections, bonding to earth, powder coated painting and marking as specified as complete as per direction of the Engineer-in-charge with following specifications:-				
	Type of construction: Form 3B Type 2 , IP classification: 42				
	The internal control wiring shall be fuse less. All control wiring and metering protection shall be by MCB's.				
	For 2500KVA Transformer - 2 Nos.				
	Each Incomers shall be complete with following: **[For 02 Nos. Incomers]**				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	1no 4000A 65kA FP EDO ACB complete with inbuilt Microprocessor release having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC for On/Off/Trip Indication light, Elec. Inter Locked				
	1Set of TVSS, FP +N+ E ,having 65KA surge capacity				
	Multi function meter with LCD display for Phase voltage (L-L & L-N) Average & Maximum, Phase current Average & Maximum, harmonic, freq., KWH, KVA, P.F. with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter) for Incomer				
	1 sets 4000/ 5A CTs for metering.				
	1 sets of phase indicating lamps with 2A SP MCB				
	1 sets 4000/ 5A extra CTs for Capacitor				
	1 No. T/N/C Selector switch				
	1 No. Auto Manual switch				
	1 sets 4000/ 5A CTs for Protection				
	1No Restricted E/F Relay with Class PS CTs				
	BUS COUPLER - 1 No.				
	Each Bus Coupler consisting of following:				
	1 No. 4000A FP EDO ACB w/o Release, 65kA				
	1 Set of On/Off Ind. Light				
	1 No. T/N/C Selector switch				
	1 No. Auto Manual switch				
	Busbar: Electrolytic high conductivity aluminium bus bar rated for 4000 amp, suitable to withstand a fault level of 65 kA at 415 volts and the neutral bus bar shall be 100% as that of the phase bus bar with Heat Shrink Sleeve				
	Outgoing:				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	1Nos 1600A 65KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2) having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required.				
	2Nos 1250A 65KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2)having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required.				
	12Nos 1000A 65KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2) having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required.				
21.1	**Note:** All outgoing feeders ACB/MCCB's(15 Nos) will have Multi function meter with power metering with LCD display for voltage, current, KWH, KVA, with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter)	1.00	Set	9,671,297.00	9,671,297.00
22.0	**MAIN LT PANEL-2 (CHEMICAL SUBSTATION) PANELS**				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	Design, manufacture, Supplying, fixing. testing & commissioning the following sheet steel cubicle type panels fabricated from 14 gauge CRCA sheet, dust and vermin proof, indoor type TPN Main board with hinged lockable doors, suitable for 415V, 3 phase 4 wire 50Hz AC supply with separate cable alley, space heater with thermal controlled and lockable bus-bar chamber and including supplying and fixing following switchgears and accessories, inter-connections, bonding to earth, powder coated painting and marking as specifiedas complete as per direction of the Engineer-in-charge with following specifications:-				
	Type of construction: Form 3B Type 2 , IP classification: 42				
	The internal control wiring shall be fuse less. All control wiring and metering protection shall be by MCB's.				
	For 2500KVA Transformer - 2 Nos.				
	Each Incomers shall be complete with following:**[For 02 Nos. Incomers]**				
	1no 4000A 65KA FP EDO ACB complete with inbuilt Microprocessor release having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC for On/Off/Trip Indication light, Elec. Inter Locked				
	1Set of TVSS, FP +N+ E ,having 50KA surge capacity				
	Multi function meter with LCD display for Phase voltage (L-L & L-N) Average & Maximum, Phase current Average & Maximum, harmonic, freq., KWH, KVA, P.F. with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter) for Incomer				
	1 sets 4000/ 5A CTs for metering.				
	1 sets of phase indicating lamps with 2A SP MCB				
	1 sets 4000/ 5A extra CTs for Capacitor				
	1 No. T/N/C Selector switch				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	1 No. Auto Manual switch				
	1 sets 4000/ 5A CTs for Protection				
	1No Restricted E/F Relay with Class PS CTs				
	BUS COUPLER - 1 No.				
	Each Bus Coupler consisting of following:				
	1 No. 4000A FP EDO ACB w/o Release, 65KA				
	1 Set of On/Off Ind. Light				
	1 No. T/N/C Selector switch				
	1 No. Auto Manual switch				
	Busbar: Electrolytic high conductivity aluminium bus bar rated for 4000 amp, suitable to withstand a fault level of 65kA at 415 volts and the neutral bus bar shall be 100% as that of the phase bus bar with Heat Shrink Sleeve				
	Outgoing:				
	1Nos 1600A 65KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2) having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required.				
	1Nos 1250A 65KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2) having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required.				
	12Nos 1000A 65KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2), having protection against O/L, S/C & E/F,Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required..(For Capacitor Panel)				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	2nos 400A FP 65KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F& Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	10no 250A FP 65KA MCCB complete with Microprocessor release with having protection against O/L, S/C & E/F& Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
22.1	**Note: All outgoing feeders ACB/MCCB's (26 Nos) will have Multi function meter with power metering** with LCD display for voltage, current, KWH, KVA, with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter)	1.00	Set	10,688,235.00	10,688,235.00
23.0	**MAIN LT PANEL- 3 (COMPUTER SUBSTATION) PANELS**				
	Design, manufacture, Supplying, fixing. testing & commissioning the following sheet steel cubicle type panels fabricated from 14 gauge CRCA sheet, dust and vermin proof, indoor type TPN Main board with hinged lockable doors, suitable for 415V, 3 phase 4 wire 50Hz AC supply with separate cable alley, space heater with thermal controlled and lockable bus-bar chamber and including supplying and fixing following switchgears and accessories, inter-connections, bonding to earth, powder coated painting and marking as specifiedas complete as per direction of the Engineer-in-charge with following specifications:-				
	Type of construction: Form 3B Type 2 , IP classification: 42				
	The internal control wiring shall be fuse less. All control wiring and metering protection shall be by MCB's.				
	1000KVA Transformer - 1 Nos.				
	Each Incomers shall be complete with following:				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	1no 1600A 50KA FP EDO ACB complete with inbuilt Microprocessor release equivalent toU Power Omega LK UW-MTX 3.5 EC having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC for On/Off/Trip Indication light,				
	1Set of TVSS, FP +N+ E ,having 65KA surge capacity				
	Multi function meter with LCD display for Phase voltage (L-L & L-N) Average & Maximum, Phase current Average & Maximum, harmonic, freq., KWH, KVA, P.F. with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter) for Incomer				
	1 sets 1600/ 5A CTs for metering.				
	1 sets of phase indicating lamps with 2A SP MCB				
	1 No. Auto Manual switch				
	1 sets 1600/ 5A CTs for Protection				
	1No Restricted E/F Relay with Class PS CT				
	Busbar: Electrolytic high conductivity aluminium bus bar rated for 1600 amp, suitable to withstand a fault level of 50KA at 415 volts and the neutral bus bar shall be 100% as that of the phase bus bar with Heat Shrink Sleeve				
	Outgoing:				
	2Nos 800A 50KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2) having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required..(For Capacitor Panel)				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	2nos 630A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F& Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	2nos 400A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F& Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	2no 250A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F& Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	2no 125A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F& Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
23.1	**Note: All outgoing feeders ACB/MCCB's (10 Nos) will have Multi function meter with power metering** with LCD display for voltage, current, KWH, KVA, with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter)	1.00	Set	2,620,785.00	2,620,785.00
24.0	**MAIN SWITCH BOARD- 4 (MSB SUBSTATION) PANELS**				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	Design, manufacture, Supplying, fixing. testing & commissioning the following sheet steel cubicle type panels fabricated from 14 gauge CRCA sheet, dust and vermin proof, indoor type TPN Main board with hinged lockable doors, suitable for 415V, 3 phase 4 wire 50Hz AC supply with separate cable alley, space heater with thermal controlled and lockable bus-bar chamber and including supplying and fixing following switchgears and accessories, inter-connections, bonding to earth, powder coated painting and marking as specifiedas complete as per direction of the Engineer-in-charge with following specifications:-				
	Type of construction: Form 3B Type 2 , IP classification: 42				
	The internal control wiring shall be fuse less. All control wiring and metering protection shall be by MCB's.				
	INCOMER-1NO.				
	Each Incomers shall be complete with following:				
	1no 1600A 50KA FP EDO ACB complete with inbuilt Microprocessor release equivalent toU Power Omega LK UW-MTX 3.5 EC having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC for On/Off/Trip Indication light,				
	1Set of TVSS, FP +N+ E ,having 65KA surge capacity				
	Multi function meter with LCD display for Phase voltage (L-L & L-N) Average & Maximum, Phase current Average & Maximum, harmonic, freq., KWH, KVA, P.F. with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter) for Incomer				
	1 sets 1600/ 5A CTs for metering.				
	1 sets of phase indicating lamps with 2A SP MCB				
	1 No. Auto Manual switch				
	1 sets 1600/ 5A CTs for Protection				
	1No Restricted E/F Relay with Class PS CT				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	Busbar: Electrolytic high conductivity aluminium bus bar rated for 1600 amp, suitable to withstand a fault level of 50KA at 415 volts and the neutral bus bar shall be 100% as that of the phase bus bar with Heat Shrink Sleeve				
	Outgoing:				
	2Nos 800A 50KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2) having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required..(For Capacitor Panel)				
	2nos 630A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F& Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	4nos 400A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F& Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	6no 250A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F& Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
24.1	**Note: All outgoing feeders ACB/MCCB's (14 Nos) will have Multi function meter with power metering** with LCD display for voltage, current, KWH, KVA, with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter)	1.00	Set	2,520,346.00	2,520,346.00

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

25.0	**MAIN SWITCH BOARD- 5 (MSB SUBSTATION) PANELS**				
	Design, manufacture, Supplying, fixing. testing & commissioning the following sheet steel cubicle type panels fabricated from 14 gauge CRCA sheet, dust and vermin proof, indoor type TPN Main board with hinged lockable doors, suitable for 415V, 3 phase 4 wire 50Hz AC supply with separate cable alley, space heater with thermal controlled and lockable bus-bar chamber and including supplying and fixing following switchgears and accessories, inter-connections, bonding to earth, powder coated painting and marking as specifiedas complete as per direction of the Engineer-in-charge with following specifications:-				
	Type of construction: Form 3B Type 2 , IP classification: 42				
	The internal control wiring shall be fuse less. All control wiring and metering protection shall be by MCB's.				
	INCOMER-1NO.				
	Each Incomers shall be complete with following:				
	1no 1600A 50KA FP EDO ACB complete with inbuilt Microprocessor release C having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC for On/Off/Trip Indication light,				
	1Set of TVSS, FP +N+ E ,having 65KA surge capacity				
	Multi function meter with LCD display for Phase voltage (L-L & L-N) Average & Maximum, Phase current Average & Maximum, harmonic, freq., KWH, KVA, P.F. with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter) for Incomer				
	1 sets 1600/ 5A CTs for metering.				
	1 sets of phase indicating lamps with 2A SP MCB				
	1 No. Auto Manual switch				
	1 sets 1600/ 5A CTs for Protection				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	1No Restricted E/F Relay with Class PS CTs				
	Busbar: Electrolytic high conductivity aluminium bus bar rated for 1600 amp, suitable to withstand a fault level of 50KA at 415 volts and the neutral bus bar shall be 100% as that of the phase bus bar with Heat Shrink Sleeve				
	Outgoing:				
	2Nos 800A 50KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2) having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required..(For Capacitor Panel)				
	2nos 630A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F & Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	4nos 400A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F & Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	6no 250A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F & Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

25.1	**Note: All outgoing feeders ACB/MCCB's (14 Nos) will have Multi function meter with power metering** with LCD display for voltage, current, KWH, KVA, with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter)	1.00	Set	2,533,344.00	2,533,344.00
26.0	**NEW MAIN SWITCH BOARD- 6 (MSB SUBSTATION) PANELS**				
	Design, manufacture, Supplying, fixing. testing & commissioning the following sheet steel cubicle type panels fabricated from 14 gauge CRCA sheet, dust and vermin proof, indoor type TPN Main board with hinged lockable doors, suitable for 415V, 3 phase 4 wire 50Hz AC supply with separate cable alley, space heater with thermal controlled and lockable bus-bar chamber and including supplying and fixing following switchgears and accessories, inter-connections, bonding to earth, powder coated painting and marking as specifiedas complete as per direction of the Engineer-in-charge with following specifications:-				
	Type of construction: Form 3B Type 2 , IP classification: 42				
	The internal control wiring shall be fuse less. All control wiring and metering protection shall be by MCB's.				
	INCOMER-1NO.				
	Each Incomers shall be complete with following:				
	1no 1600A 50KA FP MDO ACB complete with inbuilt Microprocessor release having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC for On/Off/Trip Indication light,				
	1Set of TVSS, FP +N+ E ,having 65KA surge capacity				

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)

	Multi function meter with LCD display for Phase voltage (L-L & L-N) Average & Maximum, Phase current Average & Maximum, harmonic, freq., KWH, KVA, P.F. with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter) for Incomer				
	1 sets 1600/ 5A CTs for metering.				
	1 sets of phase indicating lamps with 2A SP MCB				
	1 No. Auto Manual switch				
	1 sets 1600/ 5A CTs for Protection				
	1No Restricted E/F Relay with Class PS CT				
	Busbar: Electrolytic high conductivity aluminium bus bar rated for 1600 amp, suitable to withstand a fault level of 50KA at 415 volts and the neutral bus bar shall be 100% as that of the phase bus bar with Heat Shrink Sleeve				
	Outgoing:				
	3Nos 800A 50KA FP MDO ACB complete with inbuilt Microprocessor release with standard ports, Current measurement, Voltage measurement, UV/OV, Phase failure (Emax-2) having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC ,Potenital Free Contact for BMS On/Off/Trip Indication light complete with all accessories as required..(For Capacitor Panel)				
	2nos 630A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F & Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	4nos 400A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F & Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				

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JE(E) AEE (E) EE(ED-1)

	6no 250A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F & Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
	2no 100A FP 36KA MCCB complete with inbuilt Microprocessor release with having protection against O/L, S/C & E/F & Shunt trip coil with Potenital Free Contact for BMS with ON/ Off /Trip ON Ind. Light, complete with all accessories as required..				
26.1	**Note: All outgoing feeders ACB/MCCB's (17 Nos) will have Multi function meter with power metering** with LCD display for voltage, current, KWH, KVA, with built-in RS485 Modbus RTU communication protocol format communication port which can be used for BMS, the releases should also have display of power parameter. (the metering should have at least 1% accuracy i.e. Class 1 Combined Accuracy (CT + Meter)	1.00	Set	3,018,886.00	3,018,886.00
27.0	**CAPACITOR PANEL 500KVAR**				
	Design, manufacture, Supplying, fixing. testing & commissioning the following sheet steel cubicle type panels fabricated from 14 gauge CRCA sheet, dust and vermin proof, indoor type TPN Main board with hinged lockable doors, suitable for 415V, 3 phase 4 wire 50Hz AC supply with separate cable alley, space heater with thermal controlled and lockable bus-bar chamber and including supplying and fixing following switchgears and accessories, inter-connections, bonding to earth, powder coated painting and marking as specified as complete as per direction of the Engineer-in-charge with following specifications:-				
	Type of construction: Form 3B Type 2 , IP classification: 42				
	The internal control wiring shall be fuse less. All control wiring and metering protection shall be by MCB's.				
	INCOMER				

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JE(E) AEE (E) EE(ED-1)

	1 no 1250A 50KA TP EDO ACB complete with inbuilt Microprocessor release having protection against O/L, S/C & E/F, Shutter assembly, Auxiliary contact 4NO+4NC for On/Off/Trip Indication light,				
	Each Incomers shall be complete with following:				
	Digital Multifunction Meter with Metering CTs				
	1Set Phase Indicating Light				
	1No Modbus to TCP/IP Converter				
	APFC RELAY 14 Stage				
	A/M S.Switch				
	ON/OFF Indication Light				
	On Delay Timer				
	Isolating Neutral Link				
	Busbar: Electrolytic high conductivity aluminium bus bar rated for 1000 amp, suitable to withstand a fault level of 50KA at 415 volts and the neutral bus bar shall be 100% as that of the phase bus bar with Heat Shrink Sleeve				
	Outgoing:				
	1No. 100KVAR MPP type Heavy Duty Cap.Bank with 250A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
	5No. 50KVAR MPP type Heavy Duty Cap.Bank with 125A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
	4No. 25KVAR MPP type Heavy Duty Cap.Bank with 63A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
	1No. 20KVAR MPP type Heavy Duty Cap.Bank with 50A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
	1No. 15KVAR MPP type Heavy Duty Cap.Bank with 40A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				

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JE(E) AEE (E) EE(ED-1)

	1No. 10KVAR MPP type Heavy Duty Cap.Bank with 32A TP MCCB 50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
27.1	1No. 5KVAR MPP type Heavy Duty Cap.Bank with 25A TP MCCB 50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect	5.00	Set	1,525,282.00	7,626,410.00
28.0	**CAPACITOR PANEL 300KVAR**				
	Design, manufacture, Supplying, fixing. testing & commissioning the following sheet steel cubicle type panels fabricated from 14 gauge CRCA sheet, dust and vermin proof, indoor type TPN Main board with hinged lockable doors, suitable for 415V, 3 phase 4 wire 50Hz AC supply with separate cable alley, space heater with thermal controlled and lockable bus-bar chamber and including supplying and fixing following switchgears and accessories, inter-connections, bonding to earth, powder coated painting and marking as specified as complete as per direction of the Engineer-in-charge with following specifications:-				
	Type of construction: Form 3B Type 2 , IP classification: 42				
	The internal control wiring shall be fuse less. All control wiring and metering protection shall be by MCB's.				
	INCOMER				
	1 no 630A 50KA FP MCCB complete with inbuilt Microprocessor based O/L, S/C & E/F, protection with Indication light,.				
	Each Incomers shall be complete with following:				
	Digital Multifunction Meter with Metering CTs				
	1Set Phase Indicating Light				
	1No Modbus to TCP/IP Converter				
	Each Incomers shall be complete with following:				
	APFC RELAY 12 Stage				
	A/M S.Switch				
	ON/OFF Indication Light				
	On Delay Timer				
	Isolating Neutral Link				

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JE(E) AEE (E) EE(ED-1)

	Busbar: Electrolytic high conductivity aluminium bus bar rated for 630 amp, suitable to withstand a fault level of 50KA at 415 volts and the neutral bus bar shall be 100% as that of the phase bus bar with Heat Shrink Sleeve				
	Outgoing:				
	1No. 100KVAR MPP type Heavy Duty Cap.Bank with 250A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
	2No. 50KVAR MPP type Heavy Duty Cap.Bank with 125A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
	2No. 25KVAR MPP type Heavy Duty Cap.Bank with 63A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
	1No. 20KVAR MPP type Heavy Duty Cap.Bank with 50A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
	1No. 15KVAR MPP type Heavy Duty Cap.Bank with 40A TP MCCB,50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
	1No. 10KVAR MPP type Heavy Duty Cap.Bank with 32A TP MCCB 50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect				
28.1	1No. 5KVAR MPP type Heavy Duty Cap.Bank with 25A TP MCCB 50KA,Contactor & Ammeter with S.Switch,Indicating Light,Push Button etc to complete in all respect	2.00	Set	1,257,162.00	2,514,324.00
	BUS DUCT				

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JE(E) AEE (E) EE(ED-1)

29.00	Design, Manufacturer, supply, installation, testing & commissioning of Sandwich Insulated construction type Aluminum Indoor/ outdoor busduct, FP, 3P4W configuration, with multilayer Class-F insulation 1.1 kV Grade of following ratings with neutral of 100% of phase conductor rating, with externally mounted 2 run of Aluminium earth bus of size 50 x 6mm, 65kA/1sec, (considering current density of 130 amp/sqcm.) with G.I 1.6mm thickness enclosure and Impulse withstand voltage 8 KV, bus duct shall include joints at suitable intervals, vertical & horizontal bends. Busduct shall be complete with all accessories and temperature rise as per IEC 61439 1&6 with RAL7032 Epoxy powder coating as complete as required.				
29.1.1	4000 Amp, Straight Feeder IP66 (with canopy for outdoor)	60	Metre	49,790.10	2,987,406.00
29.1.2	4000 Amp, Straight Feeder IP54	60	Metre	42,489.44	2,549,366.40
29.1.3	4000 Amp, Fange End with Equilzer/ Shorting plate	20	Each	41,505.32	830,106.40
29.1.4	4000 Amp, Horizontal bend/ Vertical bend	25	Each	15,365.96	384,149.00
29.1.5	4000 Amp, Tinned Copper braided flexibles - 360mm (with hardware - Nuts and bolts)	20	Set	115,106.64	2,302,132.80
29.1.6	4000 Amp, Adaptor box at Transformer end	5	Each	21,151.50	105,757.50
29.1.7	4000 Amp, Adaptor box with rubber belows at DG end 40x40x6 mm channel box with 2 mm sheet openable from all sides.	2	Each	41,598.54	83,197.08
29.1.8	4000 Amp, Adaptor box at panel end	5	Each	16,921.20	84,606.00
29.1.9	4000 Amp, Adaptor box at DG end with bellow	2	Each	41,598.54	83,197.08
29.1.10	4000 Amp, Aluminium interconnection busbar at panel end- 500mm (with hardware - Nuts and bolts)	10	Set	25,381.80	253,818.00
29.2.1	1600 Amp, Straight Feeder IP66 (with canopy for outdoor)	20	Metre	27,491.64	549,832.80
29.2.2	1600 Amp, Straight Feeder IP54	20	Metre	23,063.10	461,262.00
29.2.3	1600 Amp, Fange End with Equilzer/ Shorting plate	10	Each	13,138.12	131,381.20
29.2.4	1600 Amp, Horizontal bend/ Vertical bend	10	Each	8,222.24	82,222.40
29.2.5	1600 Amp, Tinned Copper braided flexibles - 360mm (with hardware - Nuts and bolts)	6	Set	51,722.94	310,337.64
29.2.6	1600 Amp, Adaptor box at Transformer end	2	Each	21,240.00	42,480.00
29.2.7	1600 Amp, Adaptor box with rubber belows at DG end 40x40x6 mm channel box with 2 mm sheet openable from all sides.	1	Each	41,772.00	41,772.00

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JE(E) AEE (E) EE(ED-1)

29.2.8	1600 Amp, Adaptor box at panel end	2	Each	21,240.00	42,480.00
29.2.9	1600 Amp, Aluminium interconnection busbar at panel end- 500mm (with hardware - Nuts and bolts)	5	Set	25,488.00	127,440.00
30	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.	150	Cum	498.90	74,835.00
31	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources).	40	Cum	7878.50	315,140.00
32	Brick work 7 cm thick with common burnt clay F.P.S. (non modular) brick of class designation 7.5 in cement mortar 1:3 (1 cement : 3 coarse sand) in superstructure above plinth level and upto floor five level.	70	Sqm	865.65	60,595.50
33	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.	70	Sqm	662.05	46,343.50
34	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	200	Kg	172.60	34,520.00
35	Providing and fixing angle iron frames for doors, windows and ventilators of mild steel Angle sections of size 35x35x5 mm, joints mitred and welded by angle iron 35x35x5 mm or 35x 5 mm flat pieces to the existing T-iron frame or to the wall with dash fastener, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer, all complete as per the direction of Engineer-In-charge.	200	Kg	130.50	26,100.00

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JE(E) AEE (E) EE(ED-1)

36	Supplying and laying of **3 X 300 sq.mm** stranded Compacted Circular Aluminium Conductor, Conductor Screen with Extruded Semi Conducting Compound, XLPE Insulated, Insulation Screening with Extruded Semi Conducting Compound in Combination with Copper Tape, (A2XFY) Cores Laid Up, Innersheath of PVC, Galvanised Steel Flat Strip Armoured, & Overall PVC Sheathed 3 X 300 sq.mm Aluminium Cable, 11 KV grade, etc. as required with Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size in the existing masonry open duct as required. [conforming to IS-7098 (Part-2) 2011 with upto Date Amendments,	80	Metre	4942.00	395,360.00
37	Supplying and laying of following size PVC insulated, PVC sheathed XLPE aluminium conductor armored cable of Following size, 1.1 KV grade, direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required.[conforming to I.S-1554/1/8].				
37.1	3½ X 240 sq. mm	60	Metre	2,703.00	162,180.00
37.2	3½ X 300 sq. mm	50	Metre	3,178.00	158,900.00
37.3	3½ X 400 sq. mm	50	Metre	3,906.00	195,300.00
38	Supplying and laying of following size PVC insulated, PVC sheathed XLPE aluminium conductor armored cable of Following size, 1.1 KV grade in the existing masonry open duct as required. [conforming to I.S-1554/1/8].				
38.1	3½ X 240 sq. mm	50	Metre	2,285.00	114,250.00
38.2	3½ X 300 sq. mm	60	Metre	2,760.00	165,600.00
38.3	3½ X 400 sq. mm	60	Metre	3,488.00	209,280.00
39	Making the corecut out with boki of 100/ 150 mm dia inside the soil including making good the same etc. as required.	30	Metre	446.00	13,380.00
40	Making the corecut out of 150 mm dia in RCC wall of 150mm thickness including making good the same etc. as required.	20	Each	2229.00	44,580.00

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JE(E) AEE (E) EE(ED-1)

41	Dismantling of existing 1000 KVA Dry type Transformer with disconnection of existing HT incoming cable of size 3 x 150 sq.mm to 400 sq.mm and LT busduct, shifting and locating at another substation in safe condition etc. complete as required.	2	Job	24521.00	49,042.00
42	Dismantling of existing 500/ 750/ 1250 KVA Oil type Transformer with disconnection of existing HT incoming cable of size 3 x 150 sq.mm to 400 sq.mm and LT cable of size 3½ X 300 sq. mm to 400 sq.mm, shifting and locating at another substation in safe condition etc. complete as required.	2	Job	26964.00	53,928.00
43	Dismantling of existing LT panel of various capacity with disconnection of existing LT incoming cable of size 3½ x 300 sq.mm to 400 sq.mm and LT cable of size 3½ X 300 sq. mm to 400 sq.mm, shifting and locating temporary for vacating the space for civil construction in view of minimize the power intruption period for essential load etc. complete as required.	7	Job	14744.00	103,208.00
44	Installation, testing and commissioning of existing LT panel with connection of existing LT incoming cable of size 3½ x 300 sq.mm to 400 sq.mm and LT cable of size 3½ X 300 sq. mm to 400 sq.mm, with relay setting complete as required.	1	Job	6059.00	6,059.00
45	Installation, testing and commissioning of existing Ring main Unit with connection of existing HT incoming cable of size 3 x 300 sq.mm to 400 sq.mm, with relay setting, shifting and locating temporary to feed the 2000 KVA Transformer for vacating the space for civil construction in view of minimize the power intruption period for essential load etc. complete as required.	2	Job	12554.00	25,108.00
46	Installation, testing and commissioning of existing 1000 KVA Dry type Transformer with connection of existing HT incoming cable of size 3 x 150 sq.mm to 400 sq.mm and LT busduct, with protection relay setting with control wiring connection etc. complete as required.	2	Job	7738.00	15,476.00

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JE(E) AEE (E) EE(ED-1)

47	Installation, testing and commissioning of existing HT incoming cable of size 3 x 150 sq.mm to 400 sq.mm and LT cable of size 3½ X 300 sq. mm to 400 sq.mm with High POT of HT and Meggering of LT cable etc. complete as required.	2	Job	9685.00	19,370.00
				Total (A) = Rs	**₹ 94,434,202.30**

Estimated Cost of Electrical Work : Rs.9,44,34,202/-
Total Estimated Cost : Rs.9,44,34,202/-

Note: The agency shall strictly submit the financial bid (percentage above/below) only in the separate BoQ file provided in .xls format. Submission of any financial/price information in the technical bid or along with the technical documents is strictly prohibited. If any agency fails to comply with this requirement or submits the price bid in any form with the technical bid, their bid shall be summarily rejected without any further consideration

JE[E] **AEE[E]** **EE[ED-1**

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N/A

C … Nil I ….. Nil O …… Nil

JE(E) AEE (E) EE(ED-1)