

SECTION – I
NOTICE INVITING E-TENDER
(SINGLE STAGE TWO ENVELOPE BIDDING)

NleT No: DGM/TD/AGT/NleT/2025-26/05 Date: 18.07.2025

1.0 Dy. General Manager, Transmission Division, 79 - Tilla, Agartala - 799006, on behalf of TPTL invites online two bid system tender from the resourceful experienced firms for the following work through electronic tendering (e-tendering)

Sl. No.	DNleT No	Name of work	Estimated cost put to bid	Earnest Money	Period of completion
1	2	3	4	5	6
1.	DGM/TD/AGT/DNleT /2025-26/ 05 Date 15.07.2025	Implementation of Drone Surveillance Mechanism for monitoring of EHV Transmission Line TPTL	Rs. 10,62,89,680.00 including GST	Rs. 21,25,794.00	850 (Eight Hundred Fifty) Days
<ul style="list-style-type: none"> Bids shall be rejected if the offer is submitted without Earnest Money or with adequate Earnest money i.e. less than the prescribed fee mentioned in the NIT and Tender Fee / e-tender processing fee Rs.20,000.00 /-. Earnest money deposit shall be 2% of the Estimated Value put to tender. If the offer is submitted with inadequate Earnest money i.e. less than 2% of the Estimated value put to tender the bid shall be rejected. ➤ Period of completion : 850 Days ➤ Supply & Installation : 120 Days ➤ Service : 365 Days ➤ AMC: 365 Days (After completion of service period) 					

2.0 This NIT for the above work will appear in National Newspapers and in State Newspapers. This shall also be available on website at www.tptl.co.in and www.tsecl.in from xx.xx.2025. The complete Bidding Documents shall be available at Government e-procurement portal <http://tripuratenders.gov.in> from 18.07.2025 Interested bidders can download the Bidding Documents and commence preparation of bids to gain time.

3.0 QUALIFYING REQUIREMENTS FOR BIDDERS: -

To be qualified to bid for the package, the bidder shall have to meet the following minimum criteria :

3.1 TECHNICAL ELIGIBILITY: -

3.1.1 Pre-Qualification Criteria of the Bidder

S.I No.	Basic Requirement	Specific Requirements	Documents Required
1	Legal Entity	The Bidder should have a legal entity registered in India for last Five (5) Years as on the date of publishing of this EOI. The bidder should produce Articles of Association (in case of registered firms), Bye laws and certificates for registration (in case of registered co-operative societies), Partnership deed (in case of partnership firm).	Copy of Certificate of Incorporation /Registration under Companies Act, 1956/2013. And Shop Establishment certificate.
2	Government Registrations	The bidder should be mandatorily registered with the following departments 1. Goods and Service Tax Department, 2. TAN 3. PAN 4. ESIC Registration 5. EPFO Registration 6. Labour Identification No (License Issued by Labour Commissioner)	The bidder should submit the very recent Last 3 Months ECR and challan copies of minimum 50 employees. And Last 3 month latest GST returns along with ITR copies. Numbered list from 1 to 6 must be enclosed.
3	Turnover	The bidder shall have an Average Annual Turnover of minimum INR. 55 Crores (INR Fifty Five Crores) and each year it should be above INR. 50 Crores (INR. Fifty Crores) from the listed services (as mentioned in this bid document) in the previous Three (03) financial years for i.e. 2021-22, 2022-23, 2023-2024. The turnover should be from stated Services and not from supply of Hardware / Software Licenses or any other etc.	Attach a Certificate from the Statutory Auditor/ CA on Turnover details and Audited and Certified Balance Sheet and Profit/Loss Account for the last 3 (Three) Financial Years (2021-22, 2022-23, 2023-2024).
4	Net Worth	The Bidders should have positive net worth as per the audited consolidated financial statements in each of the last Three (03) financial years 2021-22, 2022-23, 2023-24 . Bidder must have minimum the net worth of Rs. 4,00,00,000 (Four Crore) in the last financial year i.e. FY 2023-2024.	Certificate from the Statutory Auditor on net worth.

5	Bank Solvency	The Bidders should have the Bank Solvency Certificate from any of the Nationalized Bank for Rs. 10,00,00,000 (Ten Crores).	Please attach the Solvency Certificate from any Nationalized Bank not before 1 month of publishing this EOI.
6	Blacklisting	Affidavit (Notarized on Rs 100 stamp paper) As on date of submission of the proposal, the Bidders shall not be under a declaration of ineligibility for corrupt or fraudulent practices or blacklisted or suspended/ debarred by any of the State/Central Government/ PSU/ Municipal agencies in India. And also Bidder should not be under any Judicial / Legal Pronouncement in India or Beyond territorial boundaries.	Affidavit (Notarized on Rs 100 stamp paper)
7	Undertaking of correctness of the documents submitted	The bidder should give an undertaking on the Company's Letterhead that all the documents / certificates / information submitted by them against this Bid are genuine. Upon cross verification of the documents furnished by the bidder, in case any of the documents / certificates / information submitted by the bidder is found to be false or forged, the Tender/EOI inviting authority shall immediately reject the bid of such bidder(s) or cancel / terminate the contract and forfeit the bid security / BG and debar them for participating in future Tenders for next three (03) years.	Please attach a self - declaration on this.
8	Work experience	The bidder must have successfully completed at least one drone-based projects amounting of >= 50 lakhs in Drone surveillance/ Drone survey or related infrastructure sectors for Central/State Government entities, PSUs, or Corporates in the last 5 years.	Please attach the Copy of Work orders from Government Department along with the completion certificates mandatorily. For ongoing Project, please provide the details of the Projects in the stated Format.

9	State Specific Project Execution (Tripura State)	Bidder must have executed the Tripura State specific Projects (eGovernance/Citizen Centric). Bidder having work orders executed for Tripura State Electricity Corporation Limited will get extra marks	Please attach the copies of the Work Orders
10	Company Set-up in the State of TIA in Drone Technology	The bidders must be have a dedicated Drone Service Centre, Centre for Excellence, Lab for ease of Repair, Maintenance and Operations of Drones deployed on the projects	Documents related to the evidence of the setup stated in this Document
11	Office Location in TIA state (North Eastern States)	The bidder must have office in any of the North Eastern States, operational for last 1 Year from the date of publication of this document.	Proof of Establishment/ Rent agreement/ Firm Registration.
12	CMMI Certificate	Company should be Internationally Certified and having minimum CMMI Level III Certified from CMMI Institute in field of Services https://www.cmmiinstitute.com/pars	Please attach the Copy of Certificate (Bidder must make sure of the Authenticity and Validity of the Certificate).
13	ISO Certificate	Company should be ISO Certified in field of Services ISO 9001:2015 , ISO 20000-1:2018 , ISO 27001:2022, ISO 45001:2018.	Please attach the Copy of Certificate (Bidder must make sure of the Authenticity and Validity of the Certificate).
14	Joint Venture/Sub-Contract/ Consortium	Joint Venture of firms are NOT ALLOWED to participate in this EOI. Sub-Contracting/ Consortium is not allowed. However, on written consent from the Tender Inviting Authority, the Sole Bidder or the company having 100% Subsidiary of the bidder / wholly owned by the Bidder company can be allowed to execute the assignment.	Please disclose the name of the Subsidiary / wholly owned companies on the letterhead of the Bidder Company (if any).
15	Covering Letter	Bidder should submit the Covering Letter mentioning the Bid Number and Bid Details and the Bid Compliance Details with page numbers of the Bid to the Bid Inviting Authority.	Please find attached the Copy of Covering Letter Format Bid Compliance Details
16	(NDA) Non – Disclosure Agreement	Bidder must sign and submit the NDA pertaining to this Bid document to the Bid Inviting Authority.	Please find attached the NDA Format

17	Details of the SPOC for this Bid	Bidder should submit the following SPOC details on it's letter head.	Please find attached format of the SPOC Details
18	Declaration on indemnification	Bidder must ensure compliance of Regulatory Compliances & License for the Services being offered for. In this regard, the bidder shall indemnify the Bid Inviting Authority against any non-compliance and submit a declaration.	Please find attached format of the Declaration
19	The Paid-up Capital of the Company	Bidder must have minimum of Rs. 1,00,00,000 (One Crore) of Paid-up Capital as shown on MCA-Ministry of Corporate Affairs.	Please attach valid MCA Copy as proof.
20	Bidding Authorization	Bidder should submit the Power of Attorney / Copy of Board Resolution certified and signed by company secretary in the name of the person signing the Bid Document.	Please attach the Copy of Board Resolution / Power of Attorney certified by company secretary.
21	Drone Service	The bidder should have provided drone services in surveillance for at least 300 days to State/Central Government/PSU.	Please attach the Work Completion order
22	Drone Technology Manpower	The bidder must have a minimum of 10 full-time drone pilots on rolls by the company as a regular employee. Additionally the presence of drone instructors on the team will be considered an added advantage.	Please attach appointment letter of resources.
23	GIS Manpower	The bidder must have at least 30 GIS Manpower on companies roll.	Please attach the list of manpower
24	No. of Drones	The bidder must have minimum 4 no. of drones with UIN and Type Certificate.	Please attach the valid proof.
25	No of Remote Pilot Instructor	The bidder must have minimum 2 no. of Remote Pilot Instructor which is DGCA Certified.	Please attach the valid proof.

3.2 Bidder's Marking System for Qualifying for Opening of Financial Bid:- Minimum Total 75 Marks out of 100 Marks :-

➤ Minimum 75 Marks out of 100 Marks will qualify

SL No.	Basic Requirement	Specific Requirements	Documents Required
1	Company Credentials on IT / ITES/Drone technology/UAV Consulting	The bidders must be System Integrator / IT Infrastructure Management/ Technology Company offering IT / ITES and e-Governance Services Provider or into IT Consulting Services to different State / Central Government Organizations / PSUs for the last five (05) financial years. The bidder must be into existence for minimum 5 years till 31 st March'2024 in India.	Total Marks – 5 Bidder Company's existence 1. Last Five (05) Years – 1 Marks 2. Last Eight (08) Years – 3 Marks 3. Last Ten (10) Years – 5 Marks
2	Turnover	The bidder shall have an Average Annual Turnover of minimum INR. 55 Crores (INR Fifty Five Crores) and each year it should be above INR. 50 Crores (INR. Fifty Crores) from the listed services (as mentioned in this bid document) in the previous Three (03) financial years for i.e. 2021-22, 2022-23, 2023-24. The turnover should be from stated Services and not from supply of Hardware / Software Licenses etc.	Total Marks – 10 Bidder Company's Average Turnover in last three FYs 1. Turnover of >55 to <= 65 Cr. – 3 Marks 2. Turnover of > 65 to <= 75 Cr. – 5 Marks 3. Turnover of >75 Cr. – 10 Marks
3	Net Worth	The Bidders should have positive net worth as per the audited consolidated financial statements in each of the last Three (03) financial years 2021-22, 2022-23, 2023-24. Bidder must have Net worth of at least Rs. 4,00,00,000 (Four Crores) in the last financial year i.e. 2023-24.	Total Marks – 5 Bidder Company's Net worth in last FY 1. Net worth of >4 to <=6Cr. – 1 Marks 2. Net worth of >7 to <=8Cr. – 2 Marks 3. Net worth of >9 Cr. – 5 Marks

S.LNo.	Basic Requirement	Specific Requirements	Documents Required
4	Bank Solvency	The Bidders should have the Bank Solvency Certificate from any of the Nationalized Bank for atleast Rs. 10,00,00,000 (Ten Crores).	Total Marks – 5 Bidder Company's Bank Solvency in Last FY <ol style="list-style-type: none"> 1. Bank Solvency of >10 less 11Cr. – 1 Marks 2. Bank Solvency of >11 less 12Cr. – 2 Marks 3. Bank Solvency of > 12 Cr. – 5 Marks
5	Work experience	<ul style="list-style-type: none"> • The bidder must have successfully completed at least one drone-based projects amounting of \geq 50 lakhs in surveillance/survey or related infrastructure sectors for Central/State Government entities, PSUs in the last 5 years. Note: Bidder have work order in Tripura State Electricity Corporation will get extra 5 marks Bidder have work order in Tripura Govt. Departments work order will get extra 5 marks	Total Marks – 25 <ol style="list-style-type: none"> 1. Project Value (15 Lakhs) : 5 Marks. 2. Project Value (25 Lakhs) : 10 Marks. 3. Project Value (>50 Lakhs) : 15 Marks. Tripura State Electricity Corporation: +5 Tripura Government Departments: +5
6	Drone Services	The bidder should have provided drone services in surveillance for at least 300 days to State/Central Government/PSU.	Total Marks – 10 Drone Services - <ol style="list-style-type: none"> 1. 300 to 500 days – 5 Marks 2. >500 to 600 days – 8 Marks 3. More than 600 days – 10 Marks
7	CMMI Certificate	Bidder should be Internationally Certified and having CMMI Level III Certified from CMMI Institute in field of Services Or Development and must be visible on https://www.cmmiinstitute.com/pars	Total Marks – 5 Bidder's CMMI Level Certifications – <ol style="list-style-type: none"> 1. CMMI Level III – 3 Marks 2. CMMI Level V – 5 Marks

S.LNo.	Basic Requirement	Specific Requirements	Documents Required
	ISO Certificate	Company should be ISO Certified in field of Services ISO 9001:2015. Additional certifications will be added advantage.	Total Marks – 5 Bidder's ISO Level Certifications – 1. ISO 9001:2015 – 2 Marks 2. ISO 270001:2022 – 1 Mark (Additional marks) 3. ISO 20000-1:2018 – 1 Mark (Additional marks) 4. ISO 45001:2008 – 1 Mark (Additional marks)
9	Pan-India Presence	Bidder should have at least 2 offices in pan India.	Total Marks – 5 Bidder's Pan India Offices – 1. Two (02) Offices – 2 Marks 2. Five (03) Offices – 3 Marks 3. More than 5 Offices – 5 Marks
10	The Paid-up Capital of the Company	Bidder must have minimum of Rs. 1,00,00,000 (One Crores) of Paid-up Capital as shown on MCA-Ministry of Corporate Affairs.	Total Marks – 5 Bidder's Paid-Up Capital – 1. Paid-Up Cap of 1Cr to 5 Cr – 1 Marks 2. Paid-Up Cap of 6Cr to 10 Cr.– 3 Marks 3. Paid-Up Cap of above 10 Cr. – 5 Marks
11	Presentation on Methodology	Bidder's should give a Presentation on Methodology and Execution of the Project. The Presentation would be indicated before the Opening of Financial Bids.	Total Marks – 20 Bidder should give Presentation on Methodology and Execution of the project.

Annexure- : Single Point of Contact/ Bidder's Contact Information

Details	Authorized Signatory	Secondary Contact
Name		
Title		
Company Address		
Phone		
Mobile		
E-mail		

4.0 The bidder shall bear all cost and expenses associated with purchase and submission of its bid document and TPTL will not be responsible or liable in any case for those cost, regardless of the conduct or outcome of the bidding process.

5.0 The bidder shall furnish documentary evidence in support of the qualifying requirements stipulated above along with their bid. Bid received without such documents shall be summarily rejected.

5.1 In addition to qualifying requirement mentioned above, the bidder's offer must include the following documents which to be submitted with technical bid :

- i. Photo copy of PAN Card.
- ii. Photo Copy of Goods & Service Tax (GST) registration certificate.
- iii. Photo Copy Contractor license and supervisory certificate of competency for requisite parts.
- iv. Photo Copy of balance sheet of the bidder (audited by Chartered Accountant) with auditor's certificate in support of annual turnover in/c. IT Return Certificate for the last 3 (Three) years.
- v. Any bidder who has been debarred / black listed by any Central (GOI) / State Govt. Owned Power Utility, for works of similar type during last 3 years for whatever reasons and thereby shall stand disqualified automatically at the very pre-qualification stage. Therefore, the bidder submitting the tender documents is liable to enclose a "Declaration" to this effect with due certification by "NOTARY" depicting full name & designation. (As per Format, annexed in Bid document).
- vi. Notwithstanding anything stated above, TPTL reserves the right to assess the capability and capacity of the bidder to execute the work satisfactorily.
- vii. The above stated requirements are minimum and the TPTL reserves the right to request for any additional information and also reserves the right to reject the proposal of any bidder, if in the opinion of the owner, the qualification data is incomplete or the bidder if found not qualified to satisfactorily perform the works.
- viii. Price bid of only those bidders shall be opened who qualify based on the specified qualifying requirements after Scrutiny of details / documents furnished by them and found to be techno- commercial responsive.

The bidder shall furnish documentary evidence in support of the qualifying requirements stipulated above along with their bid. Bid received without such documents shall be summarily rejected.

5.2 Eligible bidders shall participate in tender online through the government e-procurement portal at <http://tripuratenders.gov.in>. There is no provision to drop tenders physically (Hard copy). Tender shall be uploaded/submitted in a two-bid system:

- (a) Bid Envelop-I (Technical bid)
- (b) Bid Envelop-II (Financial bid)

- 6.0 Bidders willing to take part in the process of e-tendering are required to obtain a valid Class 2 /Class 3 **Digital Signature certificate (DSC)**, from any of the of the certifying authorities, enlisted by Controller of Certifying Authorities (CCA) at <http://cca.gov.in>. After obtaining the Class 2/3 Digital Signature Certificate (DSC) from the approved CA, Bidders shall Enroll themselves in the Tripura Government e-procurement web site at <http://tripuratenders.gov.in> and obtain User ID and Password for the purpose of bidding.

7.0 **CRITICAL DATES:**

i	Completion period :	850 (Eight Hundred & Fifty) Days
ii	Date of Publishing of tender :	18 / 07 / 2025
iii	Period of downloading of Bidding Documents at tripuratenders.gov.in :	From: - 18 / 07/ 2025 To:- 11 / 08 /2025
iv	Period of Seeking clarifications :	From: - 21/ 07/ 2025 To 25 / 07/ 2025 11.00 A.M.
v	Time and date of Pre-Bid Meeting:	28 / 07 / 2025 at 12.30 P.M.
vi	Place of Pre-Bid Meeting:	O/o the Dy. General Manager, Transmission Division, TPTL, 79-Tilla, Agartala, West Tripura, Pin: 799006. Email: dgmtdagt@gmail.com
vii	Bid submission Start Date	From : 31 / 07 / 2025
viii	Bid submission End Date:	11/08/ 2025 Up to 5.00 P.M.
ix	Time and Date of Opening Technical Bid/Bids:	12 / 08/ 2025 at 3.30 P.M.
x	Time and Date of Opening Price/Financial Bid:	To be notified after Technical Evaluation
xi	Place of Opening Bids:	O/o the Dy. General Manager, Transmission Division, TPTL, 79-Tilla, Agartala, West Tripura, Pin: 799006. Email: dgmtdagt@gmail.com
xii	Bid Validity:	240 (Two Hundred Forty) days from the date of Opening of Technical Bid.
xiii	Officer inviting Bids (TPTL):	O/o the Dy. General Manager, Transmission Division, TPTL, 79-Tilla, Agartala, West Tripura, Pin: 799006. Email: dgmtdagt@gmail.com

8.0 **SCOPE OF WORK:**

Scope of work covered under this package includes Implementation of Drone Surveillance Mechanism for monitoring of EHV Transmission Line TPTL

The detailed scope has been described in the Bid Documents and as per schedule of items(s) / BOQ.

- 9.0 Earnest Money Deposit, 2% of Estimated Value amounting to **Rs. 21,25,794.00** is to be paid electronically using the Online Payment Facility provided in the portal.

Please note that in case of units registered with DIC having permanent registration, (valid up to validity of the offer) has to produce necessary competency certificate. The Tender Fee and

Earnest Money are to be paid electronically using the Online Payment Facility provided in the portal. For online payment for the Tender Fee & EMD, please follow the following process:-

- i. After initiating the bid submission process form “MY tender” option, an “online payment” page will appear which will display the total tender fee amount.
- ii. On submission of TF payment option, System will redirect to the SBI Bank MOPS window
- iii. SBI MOPS will have to options for net banking –“SBI” and “Other banks). Bidder can chose any of the options as desired and can complete the online payment process.

10.0 For EMD , the details information is as follows:

The EMD amount shall be refunded to all the bidders including L₁ (Selected) bidder in their respective Bank Account, after the Letter of Award (LOA) event is completed in the Tripura e-Procurement Portal, on receipt of **Performance Bank Guarantee** from the selected bidder.

No interest will be paid to the bidders on EMD submitted.

EMD of the bidder may be forfeited if any case found to have made in false Declaration or Claims.

~~Bidders exempted under specific Govt. Order / rules from submitting EMD have to furnish Scan copy of the related Govt. Order / rules in English language, along with the tender in support of their claim exemption.~~

Earnest Money and Tender Fee Deposit in any other form or amount will not be accepted. Tender submitted without any one of this EMD & Tender Fee shall render the tender for summarily rejected.

11.0 Power of Attorney, if given to authorized signatory for signing the Contract Agreement, shall be made in an INDIA NON-JUDICIAL STAMP OF Rs.100.00 (Rupees One Hundred) only.

12.0 On award of work the successful bidder shall have to deposit a Contract Performance Guarantee (CPG) equivalent to 10% of the LOA value in the shape of Demand Draft in favour of Tripura State Electricity Corporation Limited from any schedule Bank guaranteed by Reserve Bank of India, payable at Agartala or in the shape of Bank Guarantee from a Public sector / scheduled Indian Bank guaranteed by Reserve Bank of India. The CPG within the definition of clause 34 of section – II of the bid document shall remain valid for actual completion period plus guarantee period against the item as per provision of clause 14.0 of section-III of the bid document. Extension of bank guarantee for performance of the contract shall be extended as & when asked by the Engineer in charge to keep the currency of the contract alive. In the event of failure on the part of agency to extend the bank guarantee before expiry of the bank guarantee submitted, the same shall be encashed without showing the reason thereof.

For preparation of BG, the details Bank information is as follows:

Name of Bank: STATE BANK OF INDIA, TLA HOUSE BRANCH ,AGARTALA.

Account No : 10320312003

IFSC Code No : SBIN0005559

MICR Code No : 799002009

- 13.0 The acceptance of Price bid / financial bid shall be subjected to acceptance of EMD and Tender fee.
- 14.0 The Bidding Documents are meant for the exclusive purpose of bidding against this specification and shall not be transferred to any other party or reproduced or used otherwise for any purpose other than for which they are specifically issued.
- 15.0 Downloaded NIT, Bid Document are to be uploaded back and digitally signed as a part of technical bid, and as a proof of acceptance of all terms and conditions in NIT and Bid Document.
- 16.0 Agency / Firm who does not fulfill the requirement of para 3.1 Section – I, is not allowed to participate in the Tender.
- 17.0 However the intending bidder has to quote all items as per BoQ, part quoting rate will not be entertained and will be rejected.

18.0 SUBMISSION OF BIDS:

Bids are to be submitted online through the website, All the documents uploaded by the TPTL, form an integral part of the contract. Bidders are required to upload all the bidding documents along with the other documents, as asked for in the Bid, through the above website and within the stipulated date and time mentioned in the Tender.

Tenders are to be submitted in two folders at a time for each work, one for Technical Proposal and the other for Financial Proposal. The Bidder shall carefully go through the requirements and prepare the required documents to be uploaded.

The bidder shall scan all the documents before uploading and all scanned documents shall be of 100 dpi resolution in Portable Document Format (PDF).The scanned documents shall be uploaded in the designated locations of Technical Bid and Financial Bid, as prompted by the e-Procurement website.

The Bidder needs to fill up their name and rates for all the items and in the designated Cells of the downloaded BOQ for the related work, and upload the same in the designated location of Financial Bid. The documents uploaded are virus scanned and digitally signed using the Digital Signature Certificate (DSC). Bidders shall specially take note of all the addendum/corrigendum related to the tender and upload the latest documents as part of the tender.

ENVELOP- I (TECHNICAL BID):

The Technical Bid/Bid Envelop-I should contain scanned copies and/or declarations in the following standardized formats.

A. My Document (Non-Statutory):-

All the below-mentioned documents/certificates are to be uploaded with digital signature in the 'My Document' folder option available after login in the e-procurement portal <http://tripuratenders.gov.in>. Bidders are requested to scan the necessary documents in **100 dpi** resolution into PDF. 'My Document' shall be populated prior to real time bidding and during real time bidding, uploaded documents/certificates in the 'My Document' are to be appropriately included (Checked) for incorporation in the Bid.

An indicative organization of 'My Document' folder and the related documents are indicated here under.

SI	Folder Name	Documents to be uploaded
1.	Mfg lic	Firm Details: i. Registration certificate of bidder ii. Valid Labor license.
2.	DNIT Documents	i. Corrigendum, if published
3.	Manpower / Machinery Details	i. Machinery & Manpower in possession of the firm.
4.	Tax related document of bidder	i. GST registration certificate ii. IT return iii. PAN Card
5.	Financial details of bidder	i. Audited Balance Sheets of last three financial years with auditor's certificate regarding annual turnover from contracting business in each year along with Turn Over Certificate
6.	Misc. document	i. Litigation History ii. Notary Declaration regarding De-barred/ Black listed. iii. Declaration of the tenderer /Bidder iv. Performance certificate v. List of names of Manufacturer. vi. Technical Data: GTPs and Drawings specified in the bid

B. Statutory Documents: consortium

After uploading the above mentioned non-statutory documents/certificates, Bidders shall submit the following, during real time bidding

1. NIT
2. Bid Document
3. All annexure with supporting documents/certificates specified in the Bid Document in single PDF.
4. Technical Data Sheet / GTPs and drawings specified in the Bid Document in PDF.

Note-1: Failure of submission of any one of the above mentioned documents shall render the tender to summarily rejection.

Note-2: If the company was set up less than five years ago, audited balance sheet for the no of years since inception is to be submitted.

Note-3: Bidders are requested to scan the necessary documents/certificates in **100 dpi** resolution into PDF.

Bid Envelop-II (Financial Bid):

Documents to be submitted in the Financial Bid are:

BOQ (Bill of quantity/Price schedule).

Note: Bill of Quantity (BOQ) i.e. Price schedule, which is the Rate quoting sheet in Ms-excel shall be downloaded, filled up properly and uploaded in the financial bid after digital signing. The Bidder shall always open the BOQ sheet with Macros Enabled. The Bidder shall quote rates in figures only, for all items in the Bill of Quantity (BOQ).

- 19.0 BOQ (Price Schedule) TAMPERING:** The provided BOQ (Price schedule) in the Tender is meant for downloading in the Bidders client machine, for entering the relevant fields meant for rates & bidder's particulars and finally uploading in the Financial Bid. The BOQ Excel Sheet is Macro enabled and working with the Sheet requires the Macro to be allowed/enabled to run.

Bidders are hereby warned not to tamper the Excel Sheet, make copies and work in a copied Sheet or break through the default Work-Sheet Security. Such BOQs with stated violations will be treated as Tampered BOQs and Bids uploaded with Tampered BOQs will be summarily rejected.

- 20.0** Bidders are allowed to bid 24x7 till the time of Bid closing, with option for Re-Submission, wherein only their latest submitted Bid will be considered for evaluation. The e-Procurement website will not allow any Bidder to attempt bidding, after the scheduled date and time.

- 21.0** For any clarifications related to NIT/Bid Document/e-procurement, bidder(s) are requested to contact:

**O/o the Dy. General Manager,
Transmission Division,
Tripura Power Transmission Limited,
79- Tilla, Agartala, West Tripura, Pin: 799006. E-mail:
dgmtdagt@gmail.com Ph.9436136804**

- 22.0 Addendum/amendments/corrigendum:-** Before the last date for submission of Tenders, the TPTL may modify any of the Contents of the Tender Notice, Tender documents by issuing amendment / Addendum/corrigendum.

Any addendum/amendments/corrigendum issued by the TPTL shall be part of the tender Document and it shall be published in the e-procurement portal at <http://tripuratenders.gov.in>. Registered Bidders shall be notified of the related Corrigendum(s) by e-mail. However TPTL shall bear no responsibility or liability arising out of non-receipt of the same in time or otherwise. Bidders are requested to visit the site frequently to check whether there is any related Corrigendum(s) or not.

- 22.0** TPTL reserves the right to cancel/withdraw this invitation for bids without assigning any reason and shall bear no liability whatsoever consequent upon such a decision.

**Dy. General Manager,
Transmission Division,
TPTL, 79-Tilla, Agartala, Tripura (W)**

SECTION – II

INSTRUCTIONS TO BIDDER

A. INTRODUCTION

1.0 GENERAL INSTRUCTIONS

The bidders are to satisfy themselves by actual site visit to the site of work as regards the prevailing condition of approaches, transportation facilities, availability of labours and availability of materials etc. before submission of bid. No claim or excuse on this account will be entertained at any stage later on.

2.0 Implementation of Drone Surveillance Mechanism for monitoring of EHV Transmission Line TPTL

3.0 COST OF BIDDING

The bidder shall bear all the costs and expenses associated with preparation and submission of its Bid including post-bid discussions, technical and other presentation etc. and the TPTL shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

B. THE BIDDING DOCUMENTS

4.0 CONTENTS OF BIDDING DOCUMENTS

3.1 The goods and services required, bidding procedures and contract terms are as prescribed in the Bidding Documents.

In addition to the Invitation for Bids, the Bidding Documents is a compilation of the following sections:

- Section – I:- Invitation for Bid
- Section – II:- Instruction to Bidder
- Section – III:- General Terms & Conditions of Contract (GCC)
- Section – IV :- Technical Specification
- Section – V:- Price Bidding Schedule

5.0 UNDERSTANDING OF BIDDING DOCUMENTS

A prospective Bidder is expected to examine all instructions, forms, terms and specifications in the Bid Documents and fully inform himself as to all the conditions and matters which may in any way affect the scope of work or the cost thereof. Failure to furnish all information required by the Bid Documents or submission of a Bid not substantially responsive to the Bid Documents in every respect will be at the Bidder's risk and may result in the rejection of its Bid.

6.0 CLARIFICATIONS ON BIDDING DOCUMENTS

- 5.1. If prospective Bidder finds discrepancies or omissions in the specifications and documents or is in doubt as to the true meaning of any part or requires any clarification on Bid Documents should make the request / notify the Tender inviting Authority of TPTL in writing. The concerned authority of TPTL shall respond in writing to any request for such clarification of the Bidding Documents, which it receives not later than as mentioned in section - I prior to the deadline for submission of bids stipulated in tender notice.
- 5.2. Verbal clarification and information given from any offices of TPTL or its employee(s) or representative (s) shall not in any way be binding on TPTL.

7.0 CORRIGENDUM / AMENDMENT TO BIDDING DOCUMENTS

- 6.1 At any time prior to the deadline for submission of bids, TPTL may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by amendment (s).
- 6.2 The amendment(s) will be published in the e-Tender portal at <http://tripuratenders.gov.in>. Registered Bidders shall be notified of the related Corrigendum(s) by e-mail. However, TPTL shall bear no responsibility or liability arising out of non-receipt of the same in time or otherwise. Bidders are requested to visit the site frequently to check whether there is any related Corrigendum or not.
- 6.3 In order to afford prospective bidders reasonable time to take the corrigendum/amendment into account in preparing their bids, TPTL may, at its discretion, extend the deadline for submission of bids.
- 6.4 Such corrigendum/amendment, clarifications, etc shall be binding on Bidders and shall be given due consideration by the Bidders while they submit their bids and invariably enclose such documents as a part of the Bid.

C. PREPARATION OF BIDS

8.0 LANGUAGE OF BID

- 7.1 The Bid prepared by the Bidders and all correspondence and documents relating to the bid, exchanged by the Bidder and TPTL, shall be written in English language, provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by an English translation of its pertinent passages. Failure to comply with this may disqualify a bid. For purposes of interpretation of the bid, the English translation shall govern.

9.0 LOCAL CONDITIONS

8.1 It shall be imperative on each bidder to fully inform him of all local conditions and factors, which may have any effects on the execution of the contract covered under these documents and specifications. The Owner shall not entertain any request for clarification from the Bidders, regarding such local conditions.

8.2 It must be understood and agreed that such factors as above have properly been investigated and considered while submitting the proposals. No claim for financial adjustment to the Contract awarded under these specifications and documents shall be entertained by TPTL. Neither any change in the time schedule of the Contract nor any financial adjustments arising thereof shall be permitted by TPTL.

10.0 DOCUMENTS COMPRISING THE BID

The Bid shall be submitted in 2 (two) parts, post registration in the <http://tripuratenders.gov.in>, as under:

Part-I: Envelop-I (Technical Bid):

- i. Containing Tender Fee & Earnest Money as per the stipulations described under the title “Notice Inviting e-Tender” of Section - I in this Bid Document. No financial aspect will be entertained in Technical bid.
- ii. Containing Documentary Evidence of the Bidder in fulfilling the qualifying requirements as stipulated in the NIT /Bid Document along with other necessary documents. The documents to be submitted shall include copies of the corresponding completion and performance certificates issued by not below the rank of Executive Engineer / Dy. General Manager / Divisional Engineer or equivalent.
- iii. Written power of attorney for the signatory of the bid, if any.
- iv. Photo copy of **PAN Card** and **GST Registration Certificate/Tax Clearance Certificate**.
- v. Copy of **balance sheet** of the bidder (audited by Chartered Accountant) in support of annual turnover for the last 3 (three) years.
- vi. The credential of the participants with reference to quality of recent / past supplies to TPTL will be considered as a criterion among others.
- vii. The bidders who have earlier failed to execute the similar nature of work to any power utility and or Debarred / Black listed by any Power Utility shall not be eligible to participate in this tender. In this context a declaration duly attested by notary shall be attached with the bid that the bidder is not blacklisted by any power utility for bad performance (As per format annexed in Bid Document). In absence of such self declared performance certificate, the bidder may not qualify the techno-commercial evaluation. Any litigation against the bidder but not cleared by court shall be produced along with tender document (As per format annexed in Bid Document).
- viii. Containing Bidders Technical Proposal etc. along with his Commercial Terms, Payment Terms on conformity with the Bid Documents.

- ix. Notwithstanding anything contained herein above, the TPTL reserves the right to assess the capacity and capability of bidder to execute the work.
- x. Bids submitted without documents as indicated above shall be treated as disqualified. Bidders shall have to produce original document as and when asked by the TPTL authority, for verification and authentication of submitted documents.

Part-II: Envelop-II / PRICE BID / FINANCIAL BID :

Only the successfully qualified Technical bidders shall be considered for opening of Price bid/Financial Bid.

The Price Bid/ Financial Bid shall be consisting of the following documents:

Bill of Quantity (BOQ) i.e. the Price Bidding Schedule - to be downloaded.

Regarding **Bill of Quantity** mentioned as above (BoQ), the Bidder shall download the BOQ file in XLS format from the Tender document. All cells of the XLS document will be protected except the field (Bidder's Name and Rates only in figures), the Bidder is expected to fill in. The BoQ XLS document shall contain bundled Macros which shall have to be enabled for automatic calculations and "figure to word conversions".

NB: In addition to the composition of the **Technical Bid** regarding the documents to be supplied, the Bidder may also supply additional documents in either of this Bid, as Non-Sensitive documents, by scanning the related documents in PDF format (100 dps scan resolution) and saving them in Bidder's "My Document" before-hand. The Bidder may suitably use any additional document from his "**My Documents**" for proper justification of his **Technical Bid**.

11.0 SCOPE OF THE PROPOSAL

10.1 The scope of the proposal shall cover all the design, engineering drawing etc. specified under the accompanying Technical Specification. It shall include the following:

- a. Detailed design of the equipment / material.
- b. Complete manufacture including testing at works.
- c. Providing engineering drawing, data, operation, manual, etc. for approval by TPTL.
- d. Packing and transportation from the manufacturer's works and delivery on FOR site basis and providing supervision of unloading.
- e. Receipt, storage, preservation and conservation of materials at the site.
- f. Pre-assembly, if any, handling at site erection, testing and commissioning.
- g. TAKING OVER CERTIFICATE by TPTL's Engineer-in-charge.

10.2 Bids containing deviations from provisions relating to the following clauses shall be considered as non-responsive:

- a. **Price Basis and Payments:** Clause 12.0, Section – II & 33.0, Section – III
- b. **Bid Guarantee:** Clause 18.0, Section – II
- c. **Contract Performance Guarantee:** Clause 34.0 of Section-II
- d. **Liquidated Damages:** Clause 13.0, General Condition of Contract, Section – III
- e. **Guarantee / Warrantee:** Clause 14.0 of Section – III

The determination of a Bid's responsiveness will be based on the contents of the Bid itself without recourse to extrinsic evidence.

- 10.3 Bids not covering the entire Scope of Work as above shall be treated as incomplete and hence rejected.

11.0 BID PRICE

- 11.1 The Bidder shall quote **firm** unit rates in the appropriate schedule of the Bid Document, for the entire period of schedule / extended schedule if any without any additional cost to TPTL.
- 11.2 The Bidder shall also furnish the price breakup in the appropriate schedule of Bid Form to indicate the following:
- i) Ex-works price of the equipment / materials (including tools and tackles etc.)
 - ii) Charges for inland transportation and insurance for delivery of the equipments / materials up to their final destinations.
 - iii) Lump-sum charges towards unloading, storage & transit insurance, erection, testing and commissioning.
 - iv) GST, Octroi duty / entry tax, GST(Service tax) and any other levies legally payable on the transactions between the Owner and the Bidder as per prevailing rates.

12.0 PRICE BASIS AND PAYMENTS

- 12.1 The bidders shall quote **firm Price** in their price bidding schedule for the entire Scope of Work covered under the Technical Specification as required in the Bid, till taking over by TPTL.
- 12.2 Bidder shall indicate Bid prices in Indian Rupees only.

13.0 TAXES AND DUTIES

- 13.1 The quoted price shall be deemed to be inclusive but not limited to all taxes and duties, Municipal taxes, personnel and corporate tax as applicable, statutory levies, royalties, Custom duty and customs related duties, GST Compensation cess, IGST on built-in import content, irrespective of whether same is categorically specified or not but exclusive of "CGST and SGST". Admissible CGST and SGST payable by the CONTRACTOR under the provisions of applicable law(s) / act(s) shall be payable by TPTL as per

CONTRACTORS GST invoice raised to TPTL. Prices, taxes, duties including GST on any transaction between CONTRACTOR and their Sub-Contractor/supplier shall be included in the Unit Rates quoted by the CONTRACTOR.

- 13.2 Bidders are required to ascertain themselves the prevailing rates of Custom Duty, GST (SGST, CGST, IGST, UGST), any applicable Cess including income tax rates as Applicable on the scheduled date of submission of price bids / revised price bid (if any) and TPTL would not undertake any responsibility whatsoever in this regard. However, any Statutory variation in Taxes and Duties, would be governed as follows-
- 13.3 If any new taxes or duties (including any increase in rate of any existing taxes or duties) are levied in India after the date of submission of bids/revised price bids (whichever is later) on any payments due to the CONTRACTOR under the CONTRACT other than tax on income, or profits of the CONTRACTOR, TPTL shall reimburse the CONTRACTOR the amount of such taxes or duties lawfully paid and borne by the CONTRACTOR against proof of payment. However, this is applicable within the GUARANTEED COMPLETION DATE only and shall not be reimbursed by TPTL during the delayed contractual project completion attributable to CONTRACTOR'S account.
- 13.4 If any existing taxes or duties are withdrawn or the rate is decreased after the date of submission of the bids / revised bids (whichever is later) on any payments due to the CONTRACTOR under the CONTRACT other than tax on income, or profits of the CONTRACTOR, TPTL shall be entitled to discount in the amount payable to the CONTRACTOR of amount equivalent to the amount of such taxes or duties. This is applicable within the GUARANTEED COMPLETION DATE and also during the delayed contractual Project completion.
- 13.5 In case of delayed completion beyond the GUARANTEED COMPLETION DATE even though extension of completion time is allowed by TPTL, for reasons solely attributable to Contractor, all extra costs on account of changes of statutory regulations/ acts, or increase in price on any other account including price variation clause, if any, shall not apply to the Contract price and shall be borne by the CONTRACTOR.
- 13.6 However, any decrease in taxes and duties during the delayed period shall be passed on to TPTL.
- 13.7 **Income Tax:-** TOTAL CONTRACT PRICE shall be inclusive of Income Tax including withholding tax (if any) payable in India. TPTL shall deduct Indian Income Tax as per rates prescribed for such contracts from time to time, from the payments due to CONTRACTOR and issue tax deducted at source certificate to CONTRACTOR. It is the responsibility of the CONTRACTOR to file proper income tax return and pay taxes thereon if any, or claim refund thereof if any.

- 13.8 Personal income tax payable, if any, in respect of salary and perquisites of CONTRACTOR's personnel / SUB-CONTRACTOR's personnel shall be payable by the individual so deputed by CONTRACTOR or SUB-CONTRACTOR.

It is the responsibility of the individual or CONTRACTOR to file proper income tax return and pay taxes thereon if any, or claim refund thereof if any.

14.0 TIME SCHEDULE

- 14.1 The basic consideration and the essence of the Contract shall be strict adherence to the time schedule for performing the specified works.
- 14.2 The requirement of completion schedule for the works is mentioned in **Section – I** of this document.
- 14.3 The completion schedule as stated in **Section – I** shall be one of the major factors in consideration of the Bids.
- 14.4 TPTL reserves the right to request for a change in the work schedule during post-bid discussion with successful bidder.
- 14.5 The successful Bidder shall be required to submit detailed BAR CHART and finalize the same with TPTL, as per the requirement of completion schedule.

15.0 CONTRACT QUALITY ASSURANCE

- 15.1 The Bidder shall include in his proposal, the quality assurance programme containing the overall quality management and procedures which he proposed to follow in the performance of the works during various phases, as detailed in relevant clause of the General Technical Conditions.
- 15.2 At the time of award of Contract, the detailed quality assurance programme to be followed for the execution of the contract shall be mutually discussed and agreed to and such agreed programme shall form part of the contract.

16.0 INSURANCE

The bidder's insurance liability pertaining to the scope of Works is detailed out in clauses titled insurance in General Terms & Conditions of Contract and in Erection Conditions of Contract. Bidder's attention is specifically invited to these clauses. The bid price shall include all the cost in pursuance of fulfilling all the insurance liabilities including storage & erection under the Contract.

17.0 BRAND NAMES / MAKE LIST

All the equipments / materials shall be supplied out of the list of the makes as stipulated in **Annexure – VI** attached with this document. Any deviation in this regard shall not be entertained and bids having such deviation shall be rejected. In case brand names are not

specified in the attached technical specification, standard equipments / materials shall be supplied.

18.0 BID GUARANTEE

18.1 The Bidder shall furnish, as part of its Bid, earnest money for an amount as specified in the Notice Inviting Tender (NIT) which is to be paid electronically using the Online Payment Facility provided in the portal.

18.2 The earnest money is required to protect TPTL against the risk of Bidder's conduct, which would warrant the earnest money forfeiture pursuant to **Para 18.6**.

18.3 The earnest money shall be deposited in Indian rupees only.

18.4 Any bid not secured in accordance with **Para 18.1** and **18.3** above shall be rejected by TPTL as non-responsive.

18.5 The earnest money of the unsuccessful Bidders shall be discharged / returned as promptly as possible as but not later than 60 days after the expiration of the period of bid validity prescribed by the Owner.

18.6 The earnest money shall be forfeited:

- a) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the bid form; or
- b) In case of a successful Bidder fails:
 - i) to sign the contract; or
 - ii) to furnish the performance guarantee.

18.7 No interest shall be payable by TPTL on the above earnest money.

19.0 PERIOD OF VALIDITY OF BIDS

19.1 Bids shall remain valid for **240 days** after the date of bid opening prescribed by TPTL, unless otherwise specified in this document. A Bid valid for a shorter period shall be rejected by TPTL as non-responsive.

19.2 In exceptional circumstances, TPTL may solicit the Bidder's consent to an extension of the period of Bid validity. The request and the response thereto shall be made in writing (including phone or fax or e_mail). The Earnest money provided in Section – I shall also be retained upto the extended period. No interest shall be payable by TPTL for retaining the earnest money upto the extended period. A Bidder may refuse the request without forfeiting the earnest money deposited by him. A Bidder granting the request shall not be required or permitted to modify his Bid.

D. SUBMISSION OF BIDS

20.0 FORMAT OF BID

- 20.1 Bids are to be submitted online through the website, and as, stated in Clause 9.0 of ITB of Section-II and as per NIT. All the documents uploaded by the Employer form an integral part of the contract. Bidders are required to upload all the bidding documents along with the other documents, as asked for in the Bid, through the above website and within the stipulated date and time mentioned in the Tender.
- 20.2 Tenders are to be submitted in two folders at a time for each supply/work, one for Technical Proposal and the other for Financial Proposal. The Bidder shall carefully go through the requirements and prepare the required documents to be uploaded
- 20.3 The bidder shall scan all the documents before uploading and all scanned documents shall be of 100 dpi resolution in Portable Document Format (PDF). The scanned documents shall be uploaded in the designated locations of Technical Bid and Financial Bid, as prompted by the e-Procurement website.
- 20.4 The Bidder needs to fill up their name and rates for all the items and in the designated Cells of the downloaded **BOQ** for the related supply/work, and upload the same in the designated location of Financial Bid. The documents uploaded are virus scanned and digitally signed using the Digital Signature Certificate (DSC). Bidders shall specially take note of all the addendum/corrigendum related to the tender and upload the latest documents as part of the tender.

20.5 ENVELOP- I (TECHNICAL BID):

The Technical Bid/Bid Envelop-I should contain scanned copies and/or declarations in the following standardized formats.

My Document (Non-Statutory):-

All the below-mentioned documents/certificates are to be uploaded with digital signature in the 'My Document' folder option available after login in the e-procurement portal <http://tripuratenders.gov.in>. Bidders are requested to scan the necessary documents in **100 dpi** resolution into PDF. 'My Document' shall be populated prior to real time bidding and during real time bidding, uploaded documents/certificates in the 'My Document' are to be appropriately included (Checked) for incorporation in the Bid.

An indicative organization of 'My Document' folder and the related documents are indicated here under:

SI No	Folder Name	Documents to be uploaded
1	Mfg lic	Firm Details: i. Registration certificate of bidder ii. Valid Labor license.
2	DNIT Documents	i. Corrigendum, if published
3	Manpower / Machinery Details	i. Machinery & Manpower in possession of the firm.
4	Tax related document of bidder	i. GST registration certificate ii. IT return iii. PAN Card
5	Financial details of bidder	i. Audited Balance Sheets of last three financial years with auditor's certificate regarding annual turnover from contracting business in each year along with Turn over certificate
6	Misc. document	i. Litigation History ii. Notary Declaration regarding De-barred/ Black listed. iii. Declaration of the tenderer /Bidder iv. Performance certificate v. List of names of Manufacturer. vi. Technical Data: GTPs and Drawings specified in the bid

Statutory Documents:

After uploading the above mentioned non-statutory documents/certificates, Bidders shall submit the following, during real time bidding

1. NIT
2. Bid Document
3. All annexure with supporting documents/certificates specified in the Bid Document in single PDF.
4. Technical Data Sheet / GTPs and drawings specified in the Bid Document in PDF.

Note-1: Failure of submission of any one of the above mentioned documents shall render the tender to summarily rejection.

Note-2: If the company was set up less than five years ago, audited balance sheet for the no of years since inception is to be submitted.

Note-3: Bidders are requested to scan the necessary documents/certificates in **100 dpi** resolution into PDF.

20.6 Bid Envelop-II (Financial Bid):

Documents to be submitted in the Financial Bid are:

BOQ (Bill of quantity/Price schedule).

Note: Bill of Quantity (BOQ) i.e. Price schedule, which is the Rate quoting sheet in Ms-excel shall be downloaded, filled up properly and uploaded in the financial bid after digital signing. The Bidder shall always open the BOQ sheet with Macros Enabled. The Bidder shall quote rates in figures only, for all items in the Bill of Quantity (BOQ).

20.7 BOQ (Price Schedule) TAMPERING: The provided BOQ (Price schedule) in the Tender is meant for downloading in the Bidders client machine, for entering the relevant fields meant

for rates & bidder's particulars and finally uploading in the Financial Bid. The BOQ Excel Sheet is Macro enabled and working with the Sheet requires the Macro to be allowed/enabled to run.

20.8 Bidders are hereby warned not to tamper the Excel Sheet, make copies and work in a copied Sheet or break through the default Work-Sheet Security. Such BOQs with stated violations will be treated as Tampered BOQs and Bids uploaded with Tampered BOQs will be summarily rejected.

20.9 Bidders are allowed to bid 24x7 till the time of Bid closing, with option for Re-Submission, wherein only their latest submitted Bid will be considered for evaluation. The e-Procurement website will not allow any Bidder to attempt bidding, after the scheduled date and time.

20.10 For any clarifications related to NIT/Bid Document/e-procurement, bidder(s) are requested to contact:

**O/o the Dy. General Manager,
Transmission Division,
Tripura Power Transmission Limited,
79- Tilla, Agartala, West Tripura, Pin: 799006. E-mail:
dgmtdagt@gmail.com**

21.0 SIGNATURE OF BIDS

21.1 The Bid must contain the name, residence and place of business of the person or persons making the Bid and shall be signed and sealed by the Bidder with his usual signature. The names of all persons signing shall also be typed or printed below the signature.

21.2 Bid by a partnership must be furnished with full names of all partners and be signed with the partnership name, followed by the signature(s) and designation(s) of the authorized partner(s) or other authorized representative(s).

21.3 Bids by Corporation / Company must be signed with the legal name of the Corporation / Company by the President, Managing Director or by the Secretary or other person or persons authorized to Bid on behalf of such Corporation / Company in the matter.

21.4 A Bid by a person who affixes to his signature the word 'President', 'Managing Director', 'Secretary', 'Agent', or other designation without disclosing his principal shall be rejected.

21.5 Satisfactory evidence of authority of the person signing on behalf of the Bidder shall be furnished with the Bid.

21.6 The Bidder's name stated on the proposal shall be exact legal name of the firm.

21.7 Bids not conforming to all the above requirements of **Para 21.0** above may be disqualified.

21.8 The original tender document shall be digitally signed by the bidder and will be uploaded during the eBid as part of the financial bid.

21.9 The Bidder shall have to give a DECLARATION that he /they have gone through the details of the bidding document as per format appended herewith.

22.0 DEADLINE FOR SUBMISSION OF BIDS

22.1 TPTL may, at its discretion, extend this deadline for the submission of Bids, in which case all rights and obligations of TPTL and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23.0 MODIFICATION AND WITHDRAWAL OF BIDS

23.1 Withdrawal of the Bid is permitted.

23.2 The Bidder may Revise (modify) his Bid as many number of times he wants, till the time of Tender Closing. In such case, only last modified Bid would be considered for evaluation.

24.0 INFORMATION REQUIRED WITH THE PROPOSAL

24.1 The Bids must clearly indicate the name of the manufacturer, the type of model of each principal item of equipment proposed to be furnished and erected. The Bid shall also contain drawings and descriptive materials indicating general dimensions, principles of operation, the extent of pre-assembly involved, major construction equipment proposed to be deployed, method of erection and the proposed erection organizational structure.

24.2 The above information shall be provided by the Bidder in the form of separate sheets, drawings, catalogues, etc. in five copies.

24.3 Any bid not containing sufficient descriptive material to describe accurately the equipment proposed, shall be treated as incomplete and hence rejected. Such descriptive materials and drawings submitted by the Bidder shall be retained by TPTL. Any major departure from these drawings and descriptive material submitted shall not be permitted during the execution of the Contract without specific written permission of TPTL.

24.4 Oral statements made by the Bidder at any time regarding quality, quantity or arrangement of the equipment or any other matter shall not be considered.

24.5 Standard catalogue pages and other documents of the Bidder may be used in the Bid to provide additional information and data as deemed necessary by the Bidder.

24.6 In case the 'Proposal' information contradicts specification requirements; the specification requirements shall govern, unless otherwise brought out clearly in the technical / commercial deviation schedule.

E. BID OPENING AND EVALUATION**25.0 OPENING OF BIDS BY TPTL**

- 25.1 The Employer will designate Tender Opening Authority for each and every Bid separately, and the Technical bids will be opened online by them at the time and date, as specified in the NIT/ Standard Bid Documents.
- 25.2 All the Statements, Documents, Certificates, Demand Draft / Bank Guarantee etc. uploaded by the Bidders will be verified for technical evaluation. The clarifications and particulars, if any, required from the bidders, will be obtained by addressing the bidders directly. The technical bids will be evaluated against the specified parameters/ criteria mentioned in the BID, and in the same process as done in the case of conventional tenders. The technically qualified bidders will be identified and considered for their Financial Bid opening. The result of Technical Bids evaluation shall be displayed in the e-procurement portal and all the Bidders who have participated in the Tender will be able to access the same.
- 25.3 The Bidders or their authorized representatives may remain present at the time of opening of the tenders. Either the Bidder himself or one of his representative with proper authorization only will be allowed at the time of tender opening. If any of the Bidders is not present at the time of opening of tenders, the tender opening authority will, on opening the tender of the absentee Bidder, read out and record the deficiencies if any, and this will be binding on the Bidder.
- 25.4 The Minutes of the Technical bid opening shall be recorded and signed by the Tender Opening Authority as well as Bidders or their Authorized Representatives present and the same shall be uploaded and can be accessed in the e-procurement portal
- 25.4 The Price bids/Financial bids of all the technically qualified bidders will be opened by the concerned Tender Opening Authority at the specified date and time. The same can be tracked through the e-procurement portal by all the technically qualified bidders who participated in the tender. However, Qualified Bidders or their authorized representatives may remain present at the Price Bid (Financial bid) opening.
- 25.6 The Financial Bid's Item-wise Rates and total amount shall be read out, Minutes of the Bid opening shall be recorded and the Bidder's signatures will be taken in the minutes. The result of financial bids (Price bids) evaluation shall be displayed in the e-procurement portal and Bidders can access the same.
- 25.7 The 'BOQ comparative chart' generated & displayed from the e-procurement portal, after the opening of financial Bid (which will be displayed as 'BOQ comparative chart' at financial bid opening summary page), will not be final.
- 25.8 Employer will prepare comparative Statement as per the decision of the Financial Bid Evaluation Committee in the Employer, which will be appropriately displayed in the e-procurement portal (this will be displayed at financial bid opening summary page).
- 25.9 The Price Bid /Financial Bid of the Unqualified Bidders will not be opened.

26.0 CLARIFICATION OF BIDS

- 26.1 To assist in the examination, evaluation and comparison of Bids, TPTL may, at its discretion, ask the Bidder for a clarification of its Bid. The request for clarification and the response shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.

27.0 PRELIMINARY EXAMINATION

- 27.1 TPTL shall examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and whether the Bids are generally in order.
- 27.2 The Bidder shall ensure that the prices furnished by him are complete. In the case of not quoting of rates of any item (supply) in the downloaded BOQ XLS file, TPTL shall be entitled to consider the highest price of the tender for the purpose of evaluation and for the purpose of award of the Contract, use the lowest prices of the tender.
- 27.3 Prior to the detailed evaluation, TPTL shall determine the substantial responsiveness of each Bid w.r.t. Bidding Documents. For purpose of these Clauses, a substantially responsive Bid is one which conforms to all the terms and conditions of the Bidding Documents without material deviations. A material deviation is one which affects in any way the prices, quality, quantity or delivery period of the equipment or which limits in any way the responsibilities or liabilities of the Bidder or any right of TPTL as required in these specifications and documents. TPTL determination of a Bid's responsiveness shall be based on the contents of the Bid itself without recourse to extrinsic evidence.
- 27.4 A Bid determined as not substantially responsive shall be rejected by TPTL and may not subsequently be made responsive by the Bidder by correction of the non-conformity.
- 27.5 TPTL may waive any minor non-conformity or irregularity in a Bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder

28.0 COMPARISON OF BIDS

- 28.1 Evaluated bid prices of all the bidders shall be compared among themselves to determine the lowest evaluated Bid and, as a result of this comparison, the lowest Bid shall be selected for consideration of award of the Contract

29.0 CONTACTING THE OWNER

Bids shall be deemed to be under consideration immediately after they are opened and until such time official intimation of award / rejection is made by TPTL to the Bidders. While the bids are under consideration, Bidders and / or their representatives or other interested parties are advised to refrain from contacting by any means, the Owner and / or his employees / representatives on matters relating to the bids under consideration. TPTL, if

necessary, shall obtain clarifications on the bids by requesting for such information from any or all the Bidders, either in writing or through personal contacts as may be necessary. Bidders shall not be permitted to change the substance of the bids after the bids have been opened.

F. AWARD OF CONTRACT

30.0 AWARD CRITERIA

30.1 TPTL shall award the Contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as technically acceptable and lowest evaluated Bid, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily. TPTL shall be the sole judge in this regard.

30.2 Further, TPTL reserves the right to award separate Contracts to two or more parties in line with the terms and conditions specified in the accompanying Technical Specifications.

30.3 On being Awarded with LOA (Letter of Award), the successful bidder should confirm the unconditional acceptance of LOA duly signed with stamp.

31.0 OWNER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

31.1 TPTL reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for such action.

32.0 NOTIFICATION OF AWARD

32.1 Prior to the expiration of the period of bid validity and extended validity period, if any, TPTL shall notify the successful Bidder in writing by registered letter or by telex or FAX, to be confirmed in writing by registered letter, that his Bid has been accepted.

32.2 The Notification of Award / Letter of Award shall constitute the formation of the Contract.

32.3 Upon the successful Bidder's furnishing of Contract Performance Guarantee pursuant to **Clause 12.0 of Section – I**. TPTL shall promptly notify each unsuccessful Bidder and will discharge its bid guarantee, pursuant to **Clause 18.0 (Section – II)**.

33.0 SIGNING OF CONTRACT

33.1 At the same time as TPTL notifies the successful Bidder that its bid has been accepted, TPTL shall send the Bidder the detailed Letter of Award.

33.2 Within 15 (fifteen) days of receipt of the detailed Letter of Award, the successful Bidder shall convey in writing unconditional acceptance of the Letter of Award and shall attend the respective office of TPTL for signing the contract agreement.

34.0 CONTRACT PERFORMANCE GUARANTEE:

34.1 As a Contract Performance Security, the successful Bidder, to whom the work is awarded, shall be required to furnish a contract Performance Guarantee in the shape of Demand Draft / Banker Cheque / Bank Guarantee in favour of Tripura State Electricity Corporation

Limited payable at Agartala, West Tripura or in the shape of Bank Guarantee from a Public Sector / Scheduled Indian Bank having paid up capital (net of any accumulated losses) of Rs.100 Crores or above (the latest annual report of the Bank should support compliance of capital adequacy ratio requirement) in the form attached as annexure – II in favour of **TRIPURA STATE ELECTRICITY CORPORATION LIMITED**. The guarantee amount shall be equal to three percent (10%) of the Contract Price and it shall guarantee the faithful performance of the Contract in accordance with the terms and conditions specified in these documents and specifications.

The contract performance guarantee submitted in the shape of Bank Guarantee shall be valid upto guarantee period as per clause – 14 of section – III.

- 34.2 The Performance Guarantee shall cover additionally the following guarantees to TPTL:
- a. The successful Bidder guarantees the successful and satisfactory operation of the equipment supplied and erected under the Contract, as per the specifications and documents.
 - b. The successful Bidder further guarantees that the equipment provided and installed by him shall be free from all defects in design, material and workmanship and shall upon written notice from TPTL fully remedy free of expenses to TPTL such defects as developed under the normal use of the said equipment within the period of guarantee specified in the relevant clause of the General Terms and conditions.
- 34.3 The Contract Performance Guarantee is intended to secure the performance of the entire contract. However, it is not to be construed as limiting the damages under clause entitled “Equipment Performance Guarantee” in Technical Specifications and damages stipulated in other clauses in the Bidding Documents.
- 34.4 The Contract performance Guarantee submitted in the shape of demand draft shall be returned to the Contractor without any interest at the end of successful completion and commissioning of the work against a Bank Guarantee of equivalent amount from any Public Sector / scheduled Indian Bank valid up to the Guarantee period. The Bank Guarantee such deposited shall be discharged after expiry of Guarantee period.
- 34.5 The contract performance Guarantee shall be forfeited: -
- a) If the contractor fails to start the work as per approved BAR CHART for reasons solely rest on him.
 - b) If the contractor left / suspends the work without prior written intimation to the owner’s Engineer in charge of the work stating the reasons for such suspension of work.
 - c) If the contractor left / suspends the work for reasons which are not acceptable to TPTL.

35.0 CORRUPT OR FRAUDULENT PRACTICES

35.1 TPTL expects the bidders / suppliers / contractors to observe the highest standards of ethics during the procurement and execution of such contracts. In pursuance of this policy, TPTL

- a. Defines, for the purpose of this provision, the terms set forth below as follows:
 - i) “Corrupt practice” means offering, giving, receiving or soliciting of anything of value to influence the action of a official in the procurement process or in contract execution, and
 - ii) “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the owner, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the owner from the benefits of free and open competition.
- b. Will reject a proposal for award if it determines the bidder recommended for award has engaged a corrupt or fraudulent practice in competing for the contract in question.
- c. Will declare a firm ineligible, either indefinitely or for a stated period of time, if TPTL at any time determines that the firm has engaged in corrupt / fraudulent practices in competing for, or in executing the contract.

36.0 CONSIGNEE:

The Sr. Manager, Transmission Sub-Division, 79 tilla, Agartala.

SECTION – III GENERAL TERMS & CONDITIONS OF CONTRACT

A. INTRODUCTION

1.0 DEFINITION OF TERMS

- 1.1 'The Contract' means the agreement entered into between Tripura State Electricity Corporation Limited and Contractor as per the Contract Agreement signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- 1.2 'Owner' shall mean **TRIPURA POWER TRANSMISSION LIMITED (TPTL)** and shall include their legal representatives, successors and assigns.
- 1.3 'Contractor' or 'Manufacturer' shall mean the Bidder whose bid shall be accepted by TPTL for award of the Works and shall include such successful Bidder's legal representatives, successors and permitted assigns.
- 1.4 'Sub-contractor' shall mean the person named in the Contract for any part of the Works or any person to whom any part of the Contract has been sublet by the Contractor with the consent in writing of the owner's Engineer in charge of the work and shall include the legal representatives, successors and permitted assigns of such person.
- 1.5 'Engineer in Charge' shall mean TPTL's nominated representative who will sign the agreement on behalf of TPTL for the purpose of carrying out the work.
- 1.6 The terms 'Equipment', 'Stores' and 'Materials' shall mean and include equipment, stores and materials to be provided by the Contractor under the Contract.
- 1.7 'Works' shall mean and include the furnishing of equipment, labour and services, as per the Specifications and complete erection, testing and putting into satisfactory operation including all transportation, handling, unloading and storage at the Site as defined in the Contract.
- 1.8 'Specifications' shall mean the Specifications and Bidding Documents forming a part of the Contract and such other schedules and drawings as may be mutually agreed upon.
- 1.9 'Site' shall mean and include the land and other places on, into or through which the works and the related facilities are to be erected or installed and any adjacent land, paths, street or reservoir which may be allocated or used by TPTL or Contractor in the performance of the Contract.
- 1.10 The term 'Contract Price' shall mean the item wise price / lump-sum price quoted by the Contractor in his bid with additions and / or deletions as may be agreed and incorporated in the Letter of Award, for the entire scope of the works.

- 1.11** The term 'Equipment Portion' of the Contract price shall mean the ex-works value of the equipment.
- 1.12** The term 'Erection Portion' of the Contract price shall mean the value of field activities of the works including erection, testing and putting into satisfactory operation including successful completion of performance and guarantee tests to be performed at Site by the Contractor including cost of insurances.
- 1.13** 'Manufacturer's Works' or 'Contractor's Works', shall mean the place of work used by the manufacturer, the Contractor, their collaborators / associate or sub-contractors for the performance of the Contract.
- 1.14** 'Inspector' shall mean TPTL or any person nominated by TPTL from time to time, to inspect the equipment; stores or Works under the Contract and / or the duly authorized representative of TPTL.
- 1.15** 'Notification of Award of Contract' / Letter of Award' / Telex of Award' shall mean the official notice issued by TPTL notifying the Contractor that his bid has been accepted.
- 1.16** 'Date of Contract' shall mean the date on which Notification of Award of Contract / Letter of Award / Telex of Award has been issued.
- 1.17** 'Month' shall mean the calendar month. 'Day or 'Days', unless herein otherwise expressly defined, shall mean calendar day or days of 24 hours each.
A 'Week' shall mean continuous period of seven (7) days.
- 1.18** "Writing" shall include any manuscript, type written or printed statement, under or over signature and / or seal as the case may be.
- 1.19** When the words 'Approved' subject to Approval', 'Satisfactory', 'Equal to', 'Proper', 'Requested', 'As Directed', 'Where Directed', 'When Directed', 'Determined by', 'Accepted', 'Permitted', or words and phrases of like importance are used the approval, judgment, direction etc. is understood to be a function of TPTL.
- 1.20** "Test on Completion" shall mean such tests as prescribed in the Contract to be performed by the Contractor before the work is taken over by TPTL.
- 1.21** 'Start Up' shall mean the time period required to bring the equipment covered under the Contract from an inactive condition, when construction is essentially complete, to the state ready for trial operation. The Start-up period shall include preliminary inspection and checkout of equipment and supporting sub-system, initial operation of the complete equipment covered under the Contract to obtain necessary pre-trial operation data, perform calibration and corrective action, shut down, inspection and adjustment prior to the trial operation period.
- 1.22** "Initial Operation" shall mean the first integral operation of the complete equipment covered under the Contract with the sub-system and supporting equipment in service or available for service.

- 1.23** 'Trial Operation', 'Reliability Test', 'Trial Run', 'Completion Test' shall mean the extended period of time after the start up period. During this trial operation period, the unit shall be operated over the full load range. The length of Trial Operation shall be as determined by the Engineer of TPTL unless otherwise specified elsewhere in the Contract.
- 1.24** 'Performance and Guarantee Test' shall mean all operational checks and tests required to determine and demonstrate capacity, efficiency and operating characteristics as specified in the Contract Documents.
- 1.25** The term 'Final Acceptance / Taking Over' shall mean written acceptance of the Works performed under the Contract by TPTL, after successful commissioning / completion of Performance and Guarantee Tests, as specified in the accompanying Technical Specification or otherwise agreed in the Contract.
- 1.26** "Commercial Operation" shall mean the Conditions of Operation in which the complete equipment covered under the Contract is officially declared by TPTL to be available for continuous operation at different loads upto and including rated capacity. Such declaration by TPTL, however, shall not relieve or prejudice the Contractor of any of his obligations under the Contract.
- 1.27** 'Guarantee period' / 'Maintenance Period' shall mean the period during which the Contractor shall remain liable for repair or replacement of any defective part of the works performed under the contract.
- 1.28** 'Latent Defects' shall mean such defects caused by faulty designs, material or workmanship which cannot be detected during inspection, testing etc, based on the technology available for carrying out such tests.
- 1.29** 'Drawings', 'Plans' shall mean all:
- a. Drawing furnished by TPTL as a basis for Bid Proposals.
 - b. Supplementary drawings furnished by TPTL to clarify and to define in greater detail the intent of the Contract.
 - c. Drawings submitted by the Contractor with his Bid provided such drawings are acceptable to TPTL.
 - d. Drawings furnished by TPTL to the Contractor during the progress of the Work; and
 - e. Engineering data and drawings submitted by the Contractor during the progress of the Work provided such drawings are acceptable to the owner's Engineer in charge of the work.
- 1.30** "Codes" shall mean the following including the latest amendments and / or replacement, if any:
- a. A.S.M.E. Test Codes.
 - b. A.I.E.E. Test Codes.

- c. American Society of Testing Materials Codes.
- d. Standards of the Indian Standards Institutions.
- e. I.E.E. standards.
- f. I.E.C. standards.
- g. Other Internationally approved standards and / or rules and regulations touching the subject matter of the Contract.

1.31 Words imparting 'Person' shall include firms, companies, corporation and association or bodies of individuals.

1.32 Terms and expressions not herein defined shall have the same meaning as are assigned to them in the Indian Sale of Goods Act (1930), failing that in the Indian Contract Act (1872) and failing that in the General Clauses Act (1897) including amendments thereof if any.

1.33 In addition to the above the following definitions shall also apply.

- a. 'All equipment and materials' to be supplied shall also mean 'Goods'.
- b. 'Constructed' shall also mean 'erected and installed'.
- c. 'Contract Performance Guarantee shall also mean 'Contract Performance Security'.

2.0 APPLICATION

These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

3.0 STANDARDS

The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications and when no applicable standard is mentioned; to the authoritative standard appropriate to the Goods and such standards shall be the latest issued by the concerned institution.

4.0 LANGUAGE AND MEASURES

All documents pertaining to the Contract including specification, Schedules, notices, correspondence, operating and maintenance instructions, drawings or any other writing shall be written in English language. The Metric System of measurement shall be used exclusively in the Contract.

5.0 CONTRACT DOCUMENTS

5.1 The term "Contract Documents" shall mean and include the following which shall be deemed to form an integral part of the Contract:

- a. Invitation of Bid including letter forwarding the Bidding Documents, Instructions to Bidders, General Terms and Conditions of Contract, Erection Conditions of Contract and all other documents included under various other sections.

- b. Specifications of the equipment to be furnished and erected under the Contract as brought out in the accompanying Technical Specification.
- c. Contractor's Bid proposal and the documents attached thereto including the letter of clarifications thereto between the Contractor and TPTL prior to the Award of Contract.
- d. All the materials, literature, data and information of any sort given by the Contractor along with his bid, subject to the approval of TPTL.
- e. Letter of Award and any agreed variations of the conditions of the documents and special terms and conditions of contract if any.

6.0 USE OF THE CONTRACT DOCUMENTS AND INFORMATION

The Contractor shall not communicate or use in advertising, publicity, sales releases or in any other medium, photographs or other reproduction of the Works under this contract, or descriptions of the site, dimensions, quantity, quality, or other information, concerning the Works unless prior written permission has been obtained from TPTL.

7.0 JURISDICTION OF CONTRACT

The laws applicable to the Contract shall be the laws in force in India. The Courts of **Agartala** shall have exclusive jurisdiction in all matters arising under this Contract. No case can be transferred to any place than Agartala.

8.0 MANNER OF EXECUTION OF CONTRACT

- 8.1 The contractor should attend the concerned office of TPTL within 15 (fifteen) days from the date of issue of the Letter of Award to the Contractor for signing the contract agreement.
- 8.2 The Contractor shall provide for signing of the Contract, Performance Guarantee, appropriate power of attorney and other requisite materials.
- 8.3 The Agreement shall be signed in two originals and the Contractor shall be provided with one signed original and the rest shall be retained by TPTL.
- 8.4 The Contractor shall provide free of cost to TPTL all the Engineering data, drawings, and descriptive materials submitted with the Bid, in at least six (6) copies to form a part of the contract immediately after issue of Letter of Award.
- 8.5 Subsequent to signing of the Contract, the Contractor, at his own cost, shall provide TPTL with at least ten (10) true copies of Agreement and one soft copy including 6 (six) hard copies of the approved drawings within fifteen (15) days after the signing of the Contract.

9.0 ENFORCEMENT OF TERMS

- 9.1 The failure of either party to enforce at any time any of the provisions of this Contract or any rights in respect thereto or to exercise any option therein provided, shall in no way be

construed to be a waiver of such provisions, rights or options or in any way to affect the validity of the Contract. The exercise by either party of any of its rights herein shall not preclude or prejudice either party from exercising the same or any other right it may have under the Contract.

10.0 COMPLETION OF CONTRACT

- 10.1** Unless otherwise terminated under the provisions of any other relevant clause, this Contract shall be deemed to have been completed on the date stipulated in the NIT.

B. GUARANTEE & LIABILITIES

11.0 TIME – THE ESSENCE OF CONTRACT

- 11.1** The time of completion of the Contract as stipulated in the bidding document by TPTL without or with modifications, if any, and so incorporated in the Letter of Award, shall be deemed to be the essence of the Contract. The Contractor shall so organize his resources and perform his Work as to complete it not later than the date agreed to.

- 11.2** The Contractor shall submit a detailed **BAR CHART / PERT NETWORK** consisting of adequate number of activities covering various key phases of the Work such as design, procurement, manufacturing, shipment and field erection activities within fifteen (15) days of the date of Notice of Award of Contract. This Bar Chart shall also indicate the interface facilities to be provided by TPTL and the dates by which such facilities are needed. The Contractor shall discuss with the owner's Engineer in charge of the work for finalization and approval of the Bar Chart by TPTL. The agreed Bar Chart shall form part of the contract documents. During the performance of the Contract, if in the opinion of the owner's Engineer in charge of the work, proper progress is not maintained, suitable changes shall be made in the Contractor's operations to ensure proper progress without any cost implication to TPTL. The interface facilities to be provided by TPTL in accordance with the agreed Bar Chart shall also be reviewed while reviewing the progress of the Contractor.

- 11.3** Based on the agreed Bar Chart fortnightly reports shall be submitted by the Contractor as directed by the owner's Engineer in charge of the work.

- 11.4** Subsequent to the finalization of the Bar Chart, the Contractor shall make available to the owner's Engineer in charge of the work a detailed manufacturing programme in line with the agreed Contract Bar Chart. Such manufacturing programme shall be reviewed, updated and submitted to the owner's Engineer in charge of the work once in every month.

- 11.5** The above Bar Charts / manufacturing programme shall be compatible with TPTL computer environment and furnished to TPTL on such media as may be desired by TPTL.

12.0 EFFECTIVENESS OF CONTRACT

The Contract shall be considered as having come into force from the date of the Notification of Award, unless otherwise provided in the Notification of Award.

13.0 LIQUIDATED DAMAGES**13.1 For Equipment Portion (Excluding Spares)**

13.1.1 If the Contractor fails to successfully complete the commissioning within the time fixed under the Contract, the Contractor shall pay to TPTL as liquidated damages and not as penalty a sum specified for each specified period of delays as below.

13.1.2 Equipment and materials will be deemed to have been delivered only when all its components, parts are also delivered. If certain components are not delivered in time, the equipment and materials will be considered as delayed until such time the missing parts are also delivered.

13.1.3 **The total amount of Liquidated Damages (LD) for delay under the Contract will be subject to a maximum of 5% of the Contract price for maximum 120 days delay exceeding stipulated completion period, beyond that imposition of percentage of LD lies at the discretion of TPTL. Fixing of LD shall be the sole responsibility of TPTL.**

13.2 For Spares

13.2.1 The liquidated damages for delay in supply of spares, beyond the dates stipulated under **clause 35.0 Section – III** shall be ½% (Half per cent) of the price of undelivered spares, per week or part thereof.

13.2.2 The total amount of liquidated damages for delay under the Contract shall be subject to a maximum of ten per cent (10%) of the value of spares ordered unless otherwise specifically mentioned.

14.0 GUARANTEE:

14.1 The Contractor shall warrant that the equipment shall be new, unused and in accordance with the contract documents and free from defects in material and workmanship for a period of twelve (12) calendar months commencing immediately upon the satisfactory commissioning. The Contractor's liability shall be limited to the replacement of any defective parts in the equipment of his own manufacture or those of his sub-contractors under normal use and arising solely from faulty design, materials and/or workmanship provided always that such defective parts are repairable at the site and are not in the meantime essential in the commercial use of the equipment. Such replaced/defective parts shall be returned to the Contractor unless otherwise arranged. No repairs or replacement shall normally be carried out by owner's Engineer in charge of the work when the equipment is under the supervision of the Contractor's supervisory engineer. **The successful bidder shall submit BG (Bank Guarantee) valid up to the stipulated period of contract.**

14.2 In the event of any emergency, where in the judgment of the owner's Engineer in Charge of work, delay would cause serious loss or damages, repairs or adjustment may be made by

him or a third party chosen by him without advance notice to the Contractor and the cost of such work shall be paid by the Contractor. In the event such action is taken by the Dy. General Manager in Charge of work, the Contractor shall be notified promptly and he shall assist wherever possible in making necessary corrections. This shall not relieve the Contractor of his liabilities under the terms and conditions of the Contract.

- 14.3** If it becomes necessary for the Contractor to replace or renew any defective portions of the Works, the provision of this clause shall apply to portion of the Works so replaced or renewed until the expiry of twelve (12) months from the date of such replacement or renewal. If any defects are not remedied within a reasonable time, the owner's Engineer in Charge of work may proceed to do the work at the Contractor's risk and cost, but without prejudice to any other rights which TPTL may have against the Contractor in respect of such defects.
- 14.4** The repaired or new parts shall be furnished and erected free of cost by the Contractor. If any repair is carried out on his behalf at the site, the Contractor shall bear the cost of such repairs.
- 14.5** The cost of any special or general overhaul rendered necessary during the maintenance period due to defects in the equipment or defective work carried out by the Contractor shall be borne by the Contractor.
- 14.6** The acceptance of the equipment by the owner's Engineer in Charge of work shall in no way relieve the Contractor of his obligation under this clause.
- 14.7** In the case of those defective parts, which are not repairable at site but are essential for the commercial operation of the equipment, the Contractor and the Owner's Engineer in Charge of work shall mutually agree to a programme of replacement or renewal, which shall minimize interruption to the maximum extent in the operation of the equipment.
- 14.8** At the end of the guarantee period, the Contractor's liability ceases except for latent defects. For latent defects, the Contractor's liability as mentioned in **clause nos. 14.1 through 14.7 above** shall remain till the end of 5 years from the date of commissioning.
In respect of goods supplied by sub-contractors to the Contractor, where a longer guarantee (more than 12 months) is provided by such sub-contractor, TPTL shall be entitled to the benefits of such longer guarantee.
- 14.9** The provisions contained in this clause shall not be applicable:
- a. If TPTL has not used the equipment according to the generally approved industrial practice and in accordance with the conditions of operations specified and in accordance with operating manuals, if any.
 - b. In cases of normal wear and tear of the parts to be specifically mentioned by the Contractor in the offer.

15.0 TAXES, PERMITS & LICENCES

The Contractor shall be liable and pay all non-Indian taxes, duties, levies lawfully assessed against TPTL or the Contractor in pursuance of the Contract. In addition, the Contractor shall be responsible for payment of all Indian duties, levies and taxes lawfully assessed against this contract.

16.0 REPLACEMENT OF DEFECTIVE PARTS AND MATERIALS

16.1 If during the performance of the Contract, owner's Engineer in charge of the work shall decide and inform in writing to the Contractor that the Contractor has manufactured any equipment, material or part of equipment unsound and imperfect or has furnished any equipment inferior to the quality specified, the Contractor on receiving details of such defects or deficiencies shall at his own expense within seven (7) days of his receiving the notice, or otherwise, within such time as may be reasonably necessary for making it good, proceed to alter, reconstruct or remove such works and furnish fresh equipment/materials up to the standards of the specifications. In case, the Contractor fails to do so, the Owner's Engineer in charge of the work may on giving the Contractor seven (7) days notice in writing of his intentions to do so, proceed to remove the portion of the works so complained of and at the cost of the Contractor perform all such work or furnish all such equipment / materials.

16.2 The Contractor's full and extreme liability under this clause shall be satisfied by the payment to TPTL of the extra cost, of such replacement procured including erection as provided for in the Contract, such extra cost being the ascertained difference between the price paid by TPTL for such replacements and the Contract Price by portion for such defective equipment / materials / works and repayments of any sum paid by TPTL to the Contractor in respect of such defective equipment / material. Should TPTL not so replace the defective equipment / materials, the Contractor's extreme liability under this clause shall be limited to repayment of all sums paid by TPTL under the Contract for such defective equipment / materials.

17.0 PATENT RIGHTS AND ROYALTIES

Royalties and fees for patents covering materials, articles, apparatus, devices, equipment or processes used in the works shall be deemed to have been included in the Contract Price. The Contractor shall satisfy all demands that may be made at any time for such royalties or fees and he alone shall be liable for any damages or claims for patent infringements and shall keep TPTL indemnified in that regard. The Contractor shall, at his own cost and expense, defend all suits or proceedings that may be instituted for alleged infringement of any patents involved in the Works, and, in case of an award of damages, the Contractor shall pay for such award. In the event of any suit or other proceedings instituted against TPTL, the same shall be defended at the cost and expense of the Contractor who shall also satisfy/comply with any decree, order or award made against TPTL. But it shall be understood that no such machine, plant, work, material or thing has

been used by TPTL for any purpose or any manner other than that for which they have been furnished and installed by the Contractor and specified under these specifications. Final payment to the Contractor by TPTL shall not be made while any such suit or claim remains unsettled. In the event any apparatus or equipment, or any part thereof furnished by the Contractor, is in such suit or proceedings held to constitute infringement, and its use is enjoined, the Contractor shall at his option and at his own expense, either procure for TPTL, the right to continue the use of said apparatus, equipment or part thereof, replace it with non-infringing apparatus or equipment or modify it, so it becomes non-infringing.

18.0 DEFENCE OF SUITS

If any action in court is brought against TPTL for the failure, omission or neglect on the part of the Contractor to perform any acts, matters, or things under the Contract, or for damage or injury caused by the alleged omission or negligence on the part of the Contractor, his agents, representatives or his Sub-Contractors, or in connection with any claim based on lawful demands of Sub-Contractors, workmen, suppliers or employees, the Contractor shall in all such cases indemnify and keep TPTL, from all losses, damages, expenses or decrees arising of such action.

19.0 LIMITATION OF LIABILITIES

The final payment by TPTL in pursuance of the contract shall mean the release of the Contractor from all his liabilities under the Contract. Such final payment shall be made only at the end of the Guarantee period, and still such time as the contractual liabilities and responsibilities of the Contractor, shall prevail. All other payments made under the Contract shall be treated as on-account payments.

20.0 POWER TO VARY OR OMIT WORK

20.1 No alterations, amendments, omissions, suspensions or variations of the Works (hereinafter referred to as 'variation') under the Contract as detailed in the Contract Documents, shall be made by the Contractor except as directed in writing by owner's Engineer in charge of the work, but he shall have full powers subject to the provisions hereinafter contained, from time to time during the execution of the Contract, by notice in writing to instruct the Contractor to make such variation without prejudice to the Contract. The Contractor shall carry out such variation and be bound by the same conditions as far as applicable as though the said variations occurred in the Contract Documents. If any suggested variations would, in the opinion of the Contractor, if carried out, prevent him from fulfilling any of his obligations or guarantees under the Contract, he shall notify the owner's Engineer in charge of the work thereof in writing and the owner's Engineer in charge of the work shall decide forthwith whether or not, the same shall be carried out and if the owner confirm his instructions, the Contractor's obligations and guarantees shall be modified to such an extent as may be mutually agreed. Any agreed difference in cost occasioned by any such variation shall be added to or deduced from the Contract Price as the case may be.

- 20.2** In the event of the owner requiring any variation, a reasonable and proper notice shall be given to the Contractor to enable him to work his arrangement accordingly, and in cases where goods or materials are already prepared or any design, drawings or pattern made or work done requires to be altered, a reasonable and agreed sum in respect thereof shall be paid to the Contractor.
- 20.3** In any case in which the Contractor has received instructions from the owner's Engineer in charge of the work as to the requirement of carrying out the alterations or additional or substituted work which either then or later on, shall in the opinion of the Contractor, involve a claim for additional payment, the Contractor shall immediately and in no case later than thirty (30) days, after receipt of the instructions aforesaid and before carrying out the instructions, advise the Owner's Engineer in charge of the work to that effect. But the Owner's Engineer in charge of the work shall not become liable for the payment of any charges in respect of any such variations, unless the instructions for the performance of the same shall be confirmed in writing by the owner's Engineer in charge of the work.
- 20.4** If any variation in the Works results in reduction of Contract Price, the parties shall agree, in writing, to the extent of any change in the price, before the Contractor proceeds with the change.
- 20.5** In all the above cases, in the event of a disagreement as to the reasonableness of the said sum, the decision of owner's Engineer in charge of the work shall prevail.
- 20.6** Notwithstanding anything stated above in this clause, owner's Engineer in charge of the work shall have the full power to instruct the Contractor, in writing, during the execution of the Contract to vary the quantities of the items or groups of items in accordance with the provisions of clause entitled 'Change of Quantity in Section – III'. The Contractor shall carry out such variations and be bound by the same conditions as though the said variations occurred in the Contract Documents.
- 21.0** **ASSIGNMENT AND SUB-LETTING OF CONTRACT**
- 21.1** The Contractor may, after informing owner's Engineer in charge of the work and getting his written approval, assign or sub-let the Contract or any part thereof other than supply of main equipments and any part of the plant for which makes are identified in the Contract. Suppliers of the equipment not identified in the Contract or any change in the identified suppliers shall be subjected to approval by the owner's Engineer in charge of the work. The experience list of equipment vendors under consideration by the Contractor for this Contract shall be furnished to the owner's Engineer in charge of the work for approval, prior to procurement of all such items / equipment. Such assignment / sub-letting shall not relieve the Contractor of any obligation, duty or responsibility under the Contract. Any assignment as above, without prior written approval of the owner's Engineer in charge of the work, shall be void.
- 21.2** For components / equipment procured by the Contractor for the purposes of the Contract, after obtaining the written approval of TPTL, the Contractor's purchase specifications and

enquiries shall call for quality plan to be submitted by the suppliers along with their proposals. The quality plans called for from the Vendors shall set out, during the various stages of manufacture and installation, the quality practices and procedures followed by the Vendors quality control organization, the relevant reference document / standard used, acceptance level, inspection documentation raised, etc. Such quality plans of the successful vendors shall be discussed and finalized in consultation with the owner's Engineer in charge of the work and shall form part of the purchase order/contract between the Contractor and the Vendor. Within three weeks of the release of the purchase orders / contracts for such bought out items / components, a copy of the same without price details but together with detailed purchase specifications, quality plans and delivery conditions shall be furnished to the owner's Engineer in charge of the work by the Contractor.

22.0 CHANGE OF QUANTITY

22.1 During the execution of the Contract, TPTL reserves the right to increase or decrease the quantities of items under the Contract but without any change in unit price or other terms & conditions. Such variations shall not be subjected to any limitation for the individual items but the total variations in all such items including items not covered under the Contract shall be limited to **±25%**.

22.2 The base unit rates, as identified in the Contract shall however remain constant during the currency of the contract. In case, the unit rates are not available in the contract, the same shall be worked out as below: -

- i) If the rates for the additional, altered or substituted work are specified in the contract, the contractor is bound to carry the additional, altered or substituted work at the same rates as are specified in the contract.
- ii) If the rates for the additional, altered or substituted work are not specifically provided in the contract, the rates will be derived from a similar class of work as are specified in the contract.
- iii) If the rates for the additional, altered or substituted work includes any work for which no rate is specified in the contract / can not be derived from the similar class of work in the contract, then such work shall be carried out at the rates which will be determined on the basis of current schedule of rate of TPTL above minus / plus the percentage which the total contract amount bears to the estimated cost put to tender. Provided always if the rate for particular part or parts of the item is not available in the schedule of rates the rate of such part or parts will be determined by TPTL of the work on the basis of the prevailing market rate when the work was done.
- iv) If the rates for the additional, altered or substituted work can not be determined in the manner specified in sub-clause i, ii & iii above, then the contractor shall within 7 (seven) days of receipt of order to carry out the order, inform the owner's Engineer in charge of the work of rate which it is his intention to charge for such class of work,

supported by analysis of rate or rates claimed, and TPTL shall determine the rate or rates claimed with mutual settlement with the contractor.

- v) The deviation limit referred to above is the net effect (algebraically sum) of all additions and deductions ordered.
- vi) Time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work bears to the original contract of the work and the certificate of the owner's Engineer in charge of the work shall be conclusive for approval of the time extension by TPTL.
- vii) The contractor shall submit to owner's Engineer-in-charge of the work the time extension application as per proforma attached at **Annexure – III**.

23.0 PACKING, FORWARDING AND SHIPMENT

23.1 The Contractor, wherever applicable, shall after proper painting, pack and crate all equipment in such a manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till the time of erection. The Contractor shall be held responsible for all damages due to improper package.

23.2 The Contractor shall notify the owner's Engineer in charge of the work of the date of each shipment from his works, and the expected date of arrival at the site.

23.3 The Contractor shall also give all shipping information concerning the weight, size and content of each packing including any other information the owner's Engineer in charge of the work may require.

23.4 The Contractor shall prepare detailed packing list of all packages and containers, bundles and loose materials forming each and every consignment dispatch to Site.

The Contractor shall further be responsible for making all necessary arrangements for loading, unloading and other handling, right from his works up to the Site and also till the equipment is erected, tested and commissioned. He shall be solely responsible for proper storage and safe custody of all equipment.

24.0 CO-OPERATION WITH OTHER CONTRACTORS AND CONSULTING ENGINEERS

The Contractor shall agree to cooperate with the TPTL's Consulting Engineers and freely exchange with them such technical information, as is necessary to obtain the most efficient and economical design and to avoid unnecessary duplication of efforts. The owner's Engineer in charge of the work shall be provided with three copies of all correspondence addressed by the Contractor to the consulting Engineers of TPTL in respect of such exchange of technical information.

25.0 NO WAIVER OF RIGHTS

Neither the inspection by TPTL nor any order by TPTL for payment of money or any payment for or acceptance of, the whole or any part of the Works by the owner's Engineer in charge of the work, nor any extension of time, nor any possession taken by the owner's

Engineer in charge of the work shall operate as a waiver of any provision of the Contract, or of any power herein reserved to TPTL or any right to damages herein provided nor shall any waiver of any breach in the Contract be held to be a waiver of any other or subsequent breach.

26.0 CERTIFICATE NOT TO AFFECT RIGHT OF TPTL AND LIABILITY OF CONTRACTOR

No interim payment certificate of the owner's Engineer in charge of the work, nor any sum paid on account by TPTL, nor any extension of time for execution of the Works granted by TPTL shall affect or prejudice the rights of TPTL against the Contractor or relieve the Contractor of his obligation for the due performance of the Contractor, or be interpreted as approval of the Works done or of the equipment furnished and no certificate shall create liability for TPTL to pay for alterations, amendments, variations or additional works not ordered, in writing, by the owner's Engineer in charge of the work or discharge the liability of the Contractor for the payment of damages whether due, ascertained or certified or not or any sum against the payment of which he is bound to indemnify TPTL, nor shall any such certificate nor the acceptance by him of any sum paid on account or otherwise affect or prejudice the rights of TPTL against the Contractor.

27.0 INSPECTION AND TESTING OF EQUIPMENTS & MATERIALS

27.1 All equipments / materials shall be inspected by the inspecting officer / team of TPTL / TPIA (Third Party Inspecting Agency) as nominated by TPTL unless otherwise waived by TPTL during execution of the contract in special circumstances.

27.2 After manufacturing or at the stage of dispatch of equipments / materials the contractor shall give intimation to the owner's Engineer in charge of the work for conducting inspection of equipments / materials at manufacture's works or at recognized testing laboratories to be arranged by the contractor. **The intimation shall be made at least 15 (fifteen) days before the equipments / materials become ready for dispatch.**

27.3 Pre – dispatch inspection and testing of equipments / materials as specified above shall be conducted at the risk and cost of the Contractor. The Contractor shall also bear the to and fro travelling, food and lodging charges of the inspecting Officer / team of TPTL.

27.4 All equipments / materials shall be dispatched by the contractor only after issuance of Materials Dispatch Clearance Certificate (MDCC) by the TPTL authority.

28.0 TRAINING OF OWNER'S PERSONNEL

28.1 The Contractor shall undertake to train free of cost, two engineering personnel selected and sent by TPTL at the works of the manufacturer. The period and nature of training for the personnel shall be agreed upon mutually between the Contractor and TPTL. These engineering personnel shall be given special training in the shops, where the equipment shall be manufactured and / or in their Collaborator's works and where possible, in any other plant where equipment manufactured by the Contractor or his Collaborator is under

installation, operation, or testing to enable those personnel to become familiar with the equipment being supplied by the Contractor.

28.2 All traveling and living expenses for the engineering personnel to be trained during the total period of training shall be borne by the Contractor. These engineering personnel, while undergoing training, shall be responsible to the Contractor for discipline.

28.3 TPTL shall not be entitled for any rebate, whatsoever on any account in the event of his failing to avail of the training facilities, for any reason.

29.0 PROGRESS REPORTS AND PHOTOGRAPHS

During the various stages of the Work in the pursuance of the Contract, the Contractor shall at his own cost submit periodic progress reports as may be reasonably required by the owner's Engineer in charge of the work with such materials as, charts, Bar Charts, photographs, test certificates, etc. Such progress reports shall be in the form and size as may be required by the owner's Engineer in charge of the work and shall be submitted in at least three (3) copies.

30.0 TAKING OVER

Upon successful completion of all the tests to be performed at Site on equipment furnished and erected by the Contractor, the owner's Engineer in charge of the work shall issue to the Contractor a **Taking over Certificate** as a proof of the final acceptance of the equipment. Such certificate shall not unreasonably be withheld.

C. CONTRACT SECURITY AND PAYMENTS

31.0 CONTRACT PERFORMANCE GUARANTEE

The Contractor shall furnish contract performance guarantee as specified in **clause 12.0 of Section – I** for the proper fulfillment of the Contract within fifteen (15) days of "Notice of Award of Contract."

32.0 PAYMENT

32.1 The payment to the Contractor for the performance of the Works under the Contract will be made by TPTL as per the guidelines and conditions specified herein. All payment made during the Contract shall be on account payments only. The final payment will be made on completion of all Works and on completion of warranty / guaranty period including fulfillment by the Contractor of all his liabilities under the Contract.

32.2 Currency of Payment

All payments under the Contract shall be in Indian Rupees only.

32.3 Due Dates for Payments

TPTL will make progressive payment as and when the payment is due as per the terms of payment set forth as herein after.

33.0 MODE OF PAYMENT

Payment due on supply / erection of Equipment & materials / services shall be made by the owner's Engineer in charge of the work through account payee Banker cheque.

33.1 TERMS OF PAYMENT

The terms of payments for various activities under the contract are as follows:

33.1.1 Minimum bill value in a single R/A bill shall not be less than 5% of the contract value.

33.1.2 Price of Supply and Erection:

The terms of payments for price of all equipment / materials and erection are detailed herein after.

A) For supply of Equipment / materials:

- i) 80% of the cost of equipment / materials after fulfillment of the following requirements:
 - a. Acknowledgement of Letter of Award.
 - b. Submission of contract performance guarantee as per **clause 12.0 (Section – I)**.
 - c. Submission of a detailed Bar Chart based on the work schedule stipulated in the Bid document and its approval by TPTL.
 - d. Signing of contract agreement.
 - e. On production of dispatch documents including the material inspection clearance certificate (MICC) issued by the inspecting officer / team of TPTL/ TPIA.
 - f. On receipt of materials at site.
- ii) 10 % of the cost of equipment / materials after successful erection/ installation at site.
- iii) Balance 10% of the cost of equipment / materials after successful warrantee period.

B) FOR SERVICE : Payment will be done in 2 (Two) Installment after certification of the Engineer-in-Charges.

C) FOR AMC : Payment will be done in 2 (Two) Installment after certification of the Engineer-in-Charges.

33.1.3 All further payments under the Contract shall be made as stipulated in the Contract document after signing the Contract Agreement.

33.1.4 Inland Transportation & Insurance

Inland transportation (including port handling) and inland insurance charges shall be borne by the contractor and TPTL in no way shall be liable for the inland transportation and insurance charges.

33.1.5 Spares

The Ex-works price components including packing and forwarding charges of spares shall be paid as indicated below: -

- a. On receipt and storage at Site and on physical verification by the owner's Engineer in charge of the work.

33.1.6 DEDUCTION FROM CONTRACT PRICE

All costs, damages or expenses which TPTL may have paid, for which under the Contract, the Contractor is liable, will be deducted from the progressive bill of the contractor.

D. SPARES**34.0 SPARES**

- 34.1** All the spares for the equipment under the Contract will, strictly, conform to the specification and documents and will be identical to the corresponding main equipment / components supplied under the Contract and shall be fully interchangeable.
- 34.2** All the mandatory spares covered under the Contract shall be produced along with the main equipment as a continuous operation and the delivery of the spares will be affected along with the main equipment in a phased manner and the delivery would be completed by the respective dates for the various categories of equipment as per the agreed Bar chart. In case of recommended spares, the above will be applicable provided the order for the recommended spares has been placed with the Contractor prior to commencement of manufacture of the main equipment.
- 34.3** The quality plan and the inspection requirement finalized for the main equipment will also be applicable for the corresponding spares.
- 34.4** The Contractor will provide TPTL with the manufacturing drawings, catalogues, assembly drawings and any other documents required by TPTL so as to enable the Owner to identify the recommended spares. Such details will be furnished to TPTL as soon as they are prepared but in any case not later than six months prior to commencement of manufacture of the corresponding main equipment.
- 34.5** The Contractor will provide TPTL with all the addresses and particulars of his sub-suppliers while placing the order on vendors for items / components / equipment covered under the Contract and will further ensure with his vendors that TPTL, if so desires, will have the right to place order(s) for spares directly on them on mutually agreed terms based on offers of such vendors.

35.0 WARRANTY FOR SPARES

The Contractor shall warrant that all spares supplied will be new and in accordance with Contract Documents and will be free from defects in design, materials and workmanship and shall further guarantee as under:

- 35.1** For 3 years operational spares (both mandatory and recommended)
- a. For any item of spares ordered or to be ordered by TPTL for 3 years operational requirement of the plant which is manufactured as a continuous operation together with the corresponding main equipment/component, the warranty will be 12 months from the scheduled date of commercial operation of the last unit of main equipment under the Contract. In case of any failure in the original component/equipment due to faulty designs, materials and workmanship, the corresponding spare parts, if any, supplied will be

replaced without any extra cost to TPTL unless a joint examination and analysis by TPTL and the Contractor of such spare parts prove that the defect found in the original part that failed, can safely be assumed not to be present in spare parts. Such replaced spare parts will have the same warranty as applicable to the replacement made for the defective original part/ component provided that such replacement for the original equipment and the spare replaced are again manufactured together. The discarded spare parts will become the property of the Contractor as soon as they have been replaced by the Contractor.

- b. For the item of spares ordered / to be ordered by TPTL for 3 years operational requirement of the equipment, which with the written approval of the Owner, are not manufactured as a continuous operation together with the manufacture of the corresponding main equipment / component, will be warranted for 6000 hrs of trouble free operation, if used within a period of 18 months (reckoned from the date of delivery at Site). However, if such spare parts are put to use after 18 months of the delivery at site then the guarantee of such spares will stand valid till the expiry of 36 months from the scheduled date of the completion of commissioning of the last unit of equipment or 6000 hrs of trouble free operation after such spares are put in service, whichever is earlier.
- c. For long Term Requirement.

For items of spares that may be ordered by TPTL to cover requirements beyond 3 years of initial operation of the plant, the warranty will be till the expiry of 6000 hrs. of trouble free operation if used within a period of 18 months from the date of delivery at Site. For items of spares that may be used after 18 months from the date of delivery at Site, the warranty period will be 12 months from the date they are put to use or 6000 hrs of trouble free operation, whichever is earlier.

35.2 The warranty of spares that are not used within 18 months from the respective dates of the delivery at Site covered in Para (b) & (c) above will, however, be subject to the condition that all such spares have been stored / maintained / preserved in accordance with Contractor's standard recommended practice, if any, and the same have been furnished to TPTL.

35.3 To enable TPTL to finalize the requirement of recommended spares which are ordered subsequent to placement of order for main equipment in addition to necessary technical details, catalogue and such other information brought-out here-in-above, the Contractor will also provide a justification in support of reasonableness of the quoted prices of spares which will, inter-alia, include documentary evidence that the prices quoted by the Contractor are not higher than those charged by them from other customers in the same period.

35.4 In addition to the spares recommended by the Contractor, if TPTL further identifies certain particular items of spares, the Contractor will submit the prices and delivery quotations for

such spares within 30 days of receipt of such request with validity period for 6 months for consideration of placement of order for additional spares, if TPTL so desires.

- 35.5** The Contractor shall guarantee the long-term availability of spares to TPTL for the full life of the equipment covered under the Contract. The Contractor shall guarantee that before going out of production of spare parts of the equipment, he shall give at least twelve (12) months advance notice so that the latter may order his bulk requirement of spares, if he so desires. The same provision will also be applicable to Sub-Contractor of any spares by the Contractor or his Sub-Contractors. Further, in case of discontinuance of manufacture of any spares by the Contractor or his Sub-Contractors, the Contractor will provide TPTL, two years in advance, full manufacturing drawings, material specifications and technical information required by TPTL for the purpose of manufacture of such items.
- 35.6** Further in case of discontinuance of supply of spares by the Contractor or his Sub-contractors, the Contractor will provide TPTL with full information for replacement of such spares with other equivalent makes, if so required by TPTL.
- 35.7** The prices of all future requirements of items of spares beyond 3 years operational requirement will be derived from the corresponding ex-works price at which the order for such spares have been placed by TPTL as part of mandatory spares or recommended spares. Ex-works order price of future spares shall be computed in accordance with the price adjustment provisions covered under the main Contract excepting that 'the base indices will be counted from the scheduled date of successful completion of trial operation of the last equipment under the main project and there will be no ceiling on the amount of variation in the prices. The above option for procuring future long term requirement of spares by TPTL shall remain valid for a period of 5 years from successful completion of commissioning of the last unit of equipment.
- 35.8** The Contractor will indicate in advance the delivery period of the items of spares, which TPTL may procure in accordance with above Sub-clause. In case of emergency requirements of spares, the Contractor would make every effort to expedite the manufacture and delivery of such spares on the basis of mutually agreed time schedule.
- 35.9** In case the Contractor fails to supply the mandatory, recommended or long term spares in accordance with the terms stipulated above, TPTL shall be entitled to purchase the same from alternate sources at the risk and the cost of the Contractor and recover from the Contractor, the excess amount paid by TPTL over the rates worked out on the above basis. In the event of such risk purchase by TPTL, the purchases will be as per the works and procurement policy of TPTL prevalent at the time of such purchases and at his option, may include a representative of the Contractor in finalizing the purchases.
- 35.10** It is expressly understood that the final settlement between the parties in terms of the relevant clauses of the Bidding Documents shall not relieve the Contractor of any his

obligations under the provision of long term availability of spares unless otherwise discharged in writing by TPTL.

E. RISK DISTRIBUTION

36.0 TRANSFER OF TITLE

36.1 This Transfer of Title of equipments / materials shall not be constructed to mean the acceptance and the consequent "Taking Over" of equipment and materials. The Contractor shall continue to be responsible for the quality and performance of such equipment and materials and for their compliance with the specifications until "Taking Over" and the fulfillment of guarantee provisions of this Contract.

36.2 This Transfer of Title shall not relieve the Contractor from the responsibility for all risks of loss or damage to the equipment and materials as specified under the clause entitled "Insurance" of this Section.

37.0 INSURANCE

37.1 The Contractor at his cost shall arrange, secure and maintain all insurance as may be pertinent to the Works and obligatory in terms of law to protect his interest and interests of TPTL against all perils detailed herein. The form and the limit of such insurance as defined herein together with the under-writer in each case shall be acceptable to TPTL. However, irrespective of such acceptance, the responsibility to maintain adequate insurance coverage at all times during the period of Contract shall be of the Contractor alone. The Contractor's failure in this regard shall not relieve him of any of his contractual responsibilities and obligations. The insurance covers to be taken by the Contractor shall be in a joint name of TPTL and the Contractor. The Contractor shall, however, be authorized to deal directly with Insurance Company or Companies and shall be responsible in regard to maintenance of all insurance covers. Further the insurance should be in freely convertible currency.

37.2 Any loss or damage to the equipment during handling, transportation, storage, erection, putting into satisfactory operation and all activities to be performed till the successful completion of commissioning of the equipment shall be to the account of the Contractor. The Contractor shall be responsible for preference of all claims and make good the damages or loss by way of repairs and/or replacement of the equipment, damaged or lost. The transfer of title shall not in any way relieve the Contractor of the above responsibilities during the period of Contract. The Contractor shall provide TPTL with copy of all insurance policies and documents taken out by him in pursuance of the Contract. Such copies of documents shall be submitted to TPTL immediately after such insurance coverage. The Contractor shall also inform TPTL in writing at least sixty (60) Days in advance regarding the expiry / cancellation and / or change in any of such documents and ensure revalidation, renewal etc., as may be necessary well in time.

37.3 The perils required to be covered under the insurance shall include, but not be limited to fire and allied risks, miscellaneous accidents (erection risks) workman compensation risks, loss or damage in transit, theft, pilferage, riot, strikes, social unrest and malicious damages, civil commotion, weather conditions, accidents of all kinds, etc. The scope of such insurance shall be adequate to cover the replacement / reinstatement cost of the equipment for all risks up to and including delivery of goods and other costs till the equipment is delivered at Site. The insurance policies to be taken should be on replacement value basis and / or incorporating escalation clause. Notwithstanding the extent of insurance cover and the amount of claim available from the underwriters, the Contractor shall be liable to make good the full replacement / rectification value of all equipment / materials and to ensure their availability as per project requirements.

37.4 All costs on account of insurance liabilities covered under the Contract will be to Contractor's account and will be included in Contract Price, However, TPTL may from time to time, during the pendency of the Contract, ask the Contractor in writing to limit the insurance coverage, risks and in such a case, the parties to the Contract will agree for a mutual settlement, for reduction in Contract price to the extent of reduced premium amount. The Contractor, while arranging the insurance shall ensure to obtain all discounts on premium, which may be available for higher volume or for reason of financing arrangement of the project.

37.5 The clause entitled 'Insurance' under the Section – IV, covers the additional insurance requirements for the portion of the works to be performed at the Site.

38.0 LIABILITY FOR ACCIDENTS AND DAMAGES

Under the Contract, the Contractor shall be responsible for loss or damage to the equipment until the successful completion of commissioning as defined else-where in the Bidding Documents.

38.1 DELAYS BY TPTL OR HIS AUTHORISED AGENTS

In case the Contractor's performance is delayed due to any act on the part of TPTL or his authorized agents, then the Contractor shall be given due extension of time for the completion of the Works, to the extent of such act on the part of TPTL has caused delay in the Contractor's performance of the Contract.

Regarding reasonableness or otherwise of the extension of time, the decision of the TPTL shall be final.

39.0 DEMURRAGE, WHARFAGE, ETC.

All demurrage, wharf-age and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the Contractor.

40.0 FORCE MAJEURE

40.1 Force majeure is herein defined as any cause which is beyond the control of the Contractor or TPTL as the case may be, which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affects the performance of the Contract, such as:

- a. Natural phenomena, including but not limited to floods, droughts, earthquakes and epidemics;
- b. Acts of any Government including but not limited to war, declared or undeclared, quarantines, and embargoes.

Provided the contractor shall within fifteen (15) days from the occurrence of such a cause notify TPTL in writing of such causes, acceptance of which will be given by TPTL after verification.

40.2 The Contractor or TPTL shall not be liable for delays in performing his obligations resulting from any force-majeure cause as referred to and /or defined above.

The date of completion will, subject to hereinafter provided, be extended by a reasonable time. In such case the contractor shall submit to owner's Engineer-in-charge of the work the time extension application as per proforma attached at **Annexure – III**.

41.0 SUSPENSION OF WORK

41.1 TPTL reserves the right to suspend and reinstate execution of the whole or any part of the Works without invalidating the provisions of the Contract. Orders for Suspension or reinstatement of the Works will be issued by TPTL to the Contractor in writing. The time for completion of the works will be extended for a period equal duration of the suspension.

42.0 CONTRACTOR'S DEFAULT

42.1 If the Contractor shall neglect to execute the Works with due diligence and expertise or shall refuse or neglect to comply with any reasonable order given to him, in the Contract by the owner's Engineer in charge of the work in connection with the works or shall contravene the provisions of the Contract, TPTL may give notice in writing to the Contractor to make good the failure, neglect or contravention complained of. Should the Contractor fail to comply with the notice within thirty (30) days from the date of serving the notice, then and in such case TPTL shall be at liberty to employ other workmen and forthwith execute such part of the Works as the Contractor, may have neglected to do or if TPTL shall think fit, without prejudice to any other right he may have under the Contract to take the work wholly or in part out of the Contractor's hands and re-contract with any other person or persons to complete the works or any part thereof and in that event TPTL shall have free use of all Contractor's equipment that may have been at the time on the Site in connection with the works without being responsible to the Contractor for fair wear and tear thereof and to the exclusion of any right of the Contractor over the same, and TPTL shall be entitled to retain and apply any balance which may otherwise be due on the

Contract by him to the Contractor, or such part there of as may be necessary, to the payment of the cost of executing the said part of the Work or of completing the Works as the case may be. If the cost of completing of Works or executing a part there of as aforesaid shall exceed the balance due to the Contractor, the Contractor shall pay such excess. Such payment of excess amount shall be independent of the liquidated damages for delay, which the Contractor shall have to pay if the completion of Works is delayed.

42.2 In addition, such action by TPTL as aforesaid shall not relieve the Contractor of his liability to pay liquidated damages for delay in completion of Works as defined in **clause 13.0 of this Section**.

42.3 Such action by TPTL as aforesaid, the termination of the Contract under this clause shall neither entitle the Contractor to reduce the value of the Contract Performance Guarantee nor the time thereof. The Contract Performance Guarantee shall be valid for the full value and for the full period of the Contract including guarantee period.

43.0 TERMINATION OF CONTRACT ON OWNER'S INITIATIVE

43.1 TPTL reserves the right to terminate the Contract either in part or in full due to reasons stipulated in the clause entitled "Contractor's Default." TPTL shall in such an event give fifteen (15) days notice in writing to the Contractor of his decision to do so.

43.2 The contractor upon receipt of such notice shall discontinue the work on the date and to the extent specified in the notice.

43.3 If the contractor is an individual or a proprietary concern and the individual or the proprietor dies and if the Contractor is a partnership concern and one of the partners dies then unless TPTL is satisfied that the legal representatives of the individual contractor or of the proprietor of propriety concern and in the case of partnership, the surviving partners, are capable of carrying out and completing the Contract, TPTL shall be entitled to cancel the Contract as to its uncompleted part without being in any way liable to payment of any compensation to the estate of deceased Contractor and/or to the surviving partners of the Contractor's firm on account of the cancellation of the Contract. The decision of TPTL that the legal representatives of the deceased Contractor or surviving partners of the Contractor's firm cannot carry out and complete the Contract shall be final and binding on the parties.

F. RESOLUTION OF DISPUTES

44.0 SETTLEMENT OF DISPUTES

44.1 Any dispute(s) or difference (s) arising out of or in connection with the Contract shall, to the extent possible, be settled amicably between the parties.

44.2 If any dispute or difference of any kind, whatsoever, shall arise between the owner's Engineer in charge of the work and the Contractor, arising out of the Contract for the performance of the Works whether during the progress of the Works or after its completion or whether before or after the termination, abandonment or breach of the Contract, it shall,

in the first place, be referred to and settled by the Additional General Manager of the concerned circle / General Manager as the case may be, who, within a period of thirty (30) days after being requested by either party to do so, shall give written notice of his decision to both the parties.

44.3 In the event the Contractor being dissatisfied with any such decision, the matters in dispute shall be referred to arbitration as hereinafter provided.

45.0 ARBITRATION

45.1 All disputes or differences in respect of which the decision, if any, of the Engineer has not become final or binding as aforesaid shall be settled by arbitration in the manner hereinafter provided.

45.1.1 The demand for arbitration shall be made within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall it be made after 90 (ninety) days from when the aggrieved party knew or should have known of the controversy, claim, dispute or breach.

45.1.2 The arbitration shall be conducted by an arbitrator, to be nominated by TPTL and he will be the sole arbitrator to conduct the arbitration.

45.1.3 The arbitration shall be conducted in accordance with the provisions of the Indian Arbitration & Reconciliation Act, 1996 or any statutory modification thereof. The venue of arbitration shall be at Agartala.

45.2 The arbitrators may, from time to time with the consent of all the parties enlarge the time for making the award.

45.3 The arbitrator shall have full powers to review and/or revise any, decision, opinion, direction, certification or valuation of the Engineer in accordance with the Contract, and neither party shall be limited in the proceedings before such arbitrators to the condense or arguments out before the Engineer for the purpose of obtaining the said decision.

45.4 During settlement of disputes and arbitration proceedings, both parties shall be obliged to carry out their respective obligations under the Contract.

46.0 RECONCILIATION OF ACCOUNTS

The Contractor shall prepare and submit every six months, a statement covering payments claimed and the payments received vis-à-vis the works executed, for reconciliation of accounts with the owner's Engineer in charge of the work. The Contractor shall also prepare and submit a detailed account of Materials received from TPTL and utilized by him for reconciliation purpose.

SECTION- IV
TECHNICAL SPECIFICATION AND SCOPE OF WORK

1. General Information & Scope of Work:

- 1.1 The technical specifications cover detailed survey including route align profiling, tower spotting, contouring and soil investigation. The scope of work inter-alia shall include the following:
- a) Route alignment using satellite imageries of NRSA, Google images, Survey of India maps, inter-alia including:
 - i. Identification of three alternative route alignments & selection of optimized route alignment in consultation with the owner. This shall be done using low resolution satellite imageries of NRSA, Google images and Survey of India maps. The output shall be in the form of digitized route alignment drawing with latest topographical and other details/features up to 5 kms. on either side of selected route alignment (both in hard and soft copies).
 - ii. Digital terrain modelling along the selected route using contour data from topographical maps.
 - iii. **Associated field work :**
 - b) Detailed Survey using GPS, DGPS, Total Stations, long range scanners & Digital theodolites of reasonable accuracies or alternatively using ALTM, (Airborne Laser Terrain Modelling) techniques, inter-alia including
 - i. Digitized profiling along the selected route along with plan details using Power Line Systems Computer Aided Design and Drafting (PLS-CADD)
 - ii. Computer aided tower spotting & optimization
 - iii. Soil resistivity measurement along the route
 - c) Digitized contouring at undulated/hilly tower locations
 - d) Integrating and superimposing the selected route on the digitized land survey maps of GOK
 - e) Tree enumeration along the corridor of selected route using satellite imageries and also by conducting walk over survey and estimation of the probable cost of tree and crop compensation
 - f) Soil investigation along the selected route
 - g) Preparation of Survey reports including estimation of Bill of Quantities, identification and explanation of route constraints, infrastructure details available enroute etc.
 - h) Soil resistivity tests along the selected route

2. Route Alignment

- 2.1** Route Alignment shall be done using satellite imageries of NRSA (PAN & LISS-III merged product of minimum resolution corresponding to 1:25,000 scale) and Survey of India topographical maps (scale 1:50,000). In case the required Survey of India maps are available in digitized form, the same shall be procured and used by the Contractor. The Google Imageries, if required may also be used route alignment. The contractor shall identify & examine three alternative route alignments and suggest to the Owner the optimal route alignment between the terminal points.

2.2 Requirement of Transmission Line Routing

- i. The alignment of the transmission line shall be most economical from the point of view of construction and maintenance.
- ii. Routing of transmission line through protected /reserved forest area should be avoided. In case it is not possible to avoid the forests or areas having large trees completely, then keeping in view of the overall economy, the route should be aligned in such a way that cutting of trees is minimum.
- iii. The route should have minimum crossings of Major Rivers, Railway lines, National / State highways, overhead EHV power lines and communication lines.
- iv. The number of angle points shall be kept to a minimum.
- v. The distance between the terminal points specified shall be kept shortest possible, consistent with the terrain that is encountered.
- vi. Marshy and low-lying areas, riverbeds and earth slip zones shall be avoided to minimize risk to the foundations and towers.
- vii. It would be preferable to utilize level ground for the alignment.
- viii. Crossing of power lines shall be minimum. Alignment shall be kept at specified distance from existing lines considering ROW and tower falling distances.
- ix. Crossing of communication line shall be minimized and it shall be preferably at right angle. Proximity and parallelism with telecom lines shall be eliminated to avoid danger of induction to them.
- x. Areas subjected to flooding such as nalla shall be avoided.
- xi. Restricted areas such as civil and military airfield shall be avoided. Care shall also be taken to avoid aircraft landing approaches.

- xii. All alignment should be easily accessible both in dry and rainy seasons to enable maintenance throughout the year.
- xiii. Certain areas such as quarry sites, coffee, tea, tobacco and saffron fields and rich plantations, gardens & nurseries which will present the Owner problems in acquisition of right of way and way leave clearance during construction and maintenance should be avoided.
- xiv. Angle points should be selected such that shifting of the points within 100 m radius is possible at the time of construction of the line.
- xv. The line routing should avoid large habitations, densely populated areas forest, animal/ bird sanctuary etc., to the extent possible
- xvi. The areas requiring special foundations and those prone to flooding should be avoided

2.3 For examination of the alternatives & identification of the most appropriate route, besides making use of information's /data /details available/extracted through Survey of India Topographical maps, Google Images and computer-aided processing of NRSA's satellite imagery, the contractor shall also carry out reconnaissance /walk over survey/ preliminary survey as may be required for verification & collection of additional information/data/details.

2.4 The contractor shall submit his preliminary observations & suggestions along with various information's/data/details collected and also processed satellite imagery data, topographical map data marked with the alternative routes etc. The final evaluation of the alternative routes shall be conducted by the contractor in consultation with Owner's representatives and optimal route alignment shall be proposed by the Contractor. Digital terrain modelling using contour data from topographical maps as well as processed satellite data shall be done by the contractor for the selected route. A fly through perspective using suitable software (s) shall be developed for further refinement of the selected route, if required. Site visit and field verification shall be conducted by the Contractor jointly with the Owner's representative for the proposed route alignment.

2.5 Final digitized route alignment drawing with latest topographical and other details/features including all rivers, railway lines, canals, roads etc. up to 5 kms. on either side of selected route alignment shall be submitted by the Contractor for Owner's approval along with report containing other information's/details as mentioned above. Changes in the route alignment, if any, during detailed survey, shall be incorporated in the final digitized route alignment drawing.

3. Visual and Thermal Inspection:

Sl. No.	Inspection Type	Details
1.	Visual (RGB)	<ul style="list-style-type: none"> ➤ Inspection of Transmission tower ➤ Inspection of conductors along with Insulators ➤ Inspection of Hardware fittings ➤ Inspection of Spacers ➤ Inspection of Vibration dampers ➤ Inspection of any disc Insulator break/ Petty coat cutting of SRI Insulator ➤ Inspection type of Insulator SRI/Porcelain ➤ Inspection of pollution presence on Insulator ➤ Inspection of copper bonds ➤ Inspection of jumper bolts, mid span joints etc. ➤ Videography of the span. <p>Reporting of:</p> <ul style="list-style-type: none"> • Missing tower member with mark number • Damaged or Bent members • Hanging tower members • Rusted Tower Members • Missing Tower bolts • Missing Bird Guards • Phase Plate Condition • Name Plate Condition • Danger Plate Condition • Number Plate Condition <p>Reporting on Tower Foundation:</p> <ul style="list-style-type: none"> • Any Damage to Tower foundation and Stub • Revetment issues • Tower Earthing (only for CP Earthing) <p>Photographs:</p> <ul style="list-style-type: none"> • One Photograph covering a complete tower and nearby terrain • Separate photographs of every insulator string with cross arm, earth wire peak focusing on defects in insulator, conductor, copper bond, Hardware accessories, corona rings, grading ring, jumper bolts, cotter pin, split pin etc. shall be captured • Photographs covering Loose /Missing/Hanging members and missing Bolt & Nuts • Photographs covering forward span any constructions in ROW corridor / broken/loose dampers and damaged conductors • Photographs covering Foundation, Coupling, earthing condition above ground shall be captured

Sl. No.	Inspection Type	Details
2.	Thermal	Thermovision Scanning of : <ul style="list-style-type: none"> • All Jumpers (bolts), Mid span; insulators, hardware fittings joints and dead-end joints shall be scanned
3.	LiDAR	<ul style="list-style-type: none"> ➤ Aerial Survey of the ROW ➤ Jumper Drop Clearances ➤ Vegetation Clearance ➤ Statutory Clearance at Powerline / Railway / NH crossing / Building ➤ Phase to Phase Clearance ➤ Earth Wire to Phase clearance ➤ Phase to Ground clearance. ➤ Infringement Analysis ➤ Conductor Sag Analysis

4. Web Based Portal:

Sl. no.	Cloud-based Platform	Key Features
1.	Bidder needs to provide all information integrated into one platform showing dashboard of the project progress and data viewing on the cloud	<ul style="list-style-type: none"> ➤ Provide secure login for multi-level access across the management. ➤ Provide GIS home to view all georeferenced assets on the portal. ➤ Host and display defect / tower wise raw and annotated images ➤ Statistical Analysis of defects based on severity; tower / location wise. ➤ RoW video hosting per span i.e., tower to tower ➤ Automated defect and tower wise report generation ➤ Table view of defects based on severity; tower / location wise. ➤ Search option for the particular asset non-confirmatory/ defects/ anomalies

5. Deliverables:

6.

Sl. no.	Task/Activities	List of Deliverables
1.	A report shall be submitted within the time frame as mentioned in work order or as agreed upon to Engineer-In-charge for comments and final report (section - wise) shall be submitted in soft copy for the purpose of storage.	<ul style="list-style-type: none"> ➤ Transmission Line Aerial inspection & survey Report (Filled in Check List) ➤ KML file with geo tagged photos with tower name plate. ➤ Tower wire defect report with visual reference and marked defects. ➤ Provide geo-tagged RoW video with annotated RoW issues / infringements

7. TPTL may provide the GPS Coordinates, if available. TPTL will depute one person during the drone survey work. The bidder needs to provide the details of equipment, manpower productivity and other criteria to meet the schedule.

8. UAV survey

- All the equipment used in the UAV shall be capable enough to collect, process, and adjust data with enough precision to meet the accuracy requirements of the project and applicable accuracy standards described in this document.
- The UAV is to be flown in a safe method in order to avoid any kind of damage to humans and the Transmission components etc. Bidder shall be responsible for any such damage.
- The Contractor shall be responsible for obtaining all the necessary clearances from DGCA & Ministry of Defence, other agencies of Government of India, local authorities, etc. for flying over the AOI to acquire Drone data, Imagery etc.

9. Access to cloud platform

- Cloud based analytics platform must have actionable artificial intelligence to reduce time and costs, improve safety and make faster decisions in the O&M functions that transforms traditional operations and maintenance (O&M) functions by delivering real-time data-driven insights to decision-makers.
- Platform should enable the user to have a repository of the data and perform various functions such as annotation marking, zooming in, zooming out, applying filters, comments etc. Users can generate customized reports in .pdf as well as .xlsx format.
- Cloud platform must have following features.
 - App based thermal/visual data syncing.
 - Inspection gallery to annotate the anomalies and severity.
 - Online reporting preparation (PDF/Excel sheet)
 - Download and share reports.
 - Video/image-based analytics like zoom, image capture and reporting
 - Platform should be complete cloud based digital repository to keep the historical data.

10. Flight Planning:

The flight path shall cover the study area completely including enough cross flight lines to eliminate shadowing and allow for proper quality control. All sensor flight line overlap should be 50% or greater, as required, to ensure that there are no data gaps between the usable portions of the swaths. Data collections in high relief terrain should have greater overlap. Any data with gaps between the geometrically unusable portions of the swaths will be rejected. The Bidder shall generally avoid missions during inclement weather which have been known to degrade the accuracy of laser return data. The Bidder must document mission date, time, flight altitude, airspeed, scan angle, scan rate, laser pulse rates, and other information deemed pertinent.

11. Quality Control / Quality Assurance:

Quality Control/Quality Assurance (QC/QA) of the RGB / Thermal / LIDAR data at various stages of Project including validating horizontal and vertical accuracy as per specifications laid down by Power Grid Corporation Corp India Ltd. (PGCIL). The client may perform independent QC/QA testing. This shall include:

- a) Carrying out corrections as per Quality Audit Report and security vetting report provided by third party quality auditor.
- b) Facilitating quality audit, stage approvals, security vetting and final acceptance tests by client.
- c) Carrying out corrections after security vetting as pointed out by concerned agencies.

11. Detailed Survey

11.1 The detailed survey shall be carried out using DGPS, Total Stations, digital theodolite etc. along the approved route alignment. As an alternative, the contractor may also use ALTM (Air borne Laser Terrain Modelling techniques of equal or better accuracy for the detailed survey.

11.2 Route Marking

- a) The route of the transmission line shall be recorded using DGPS of positional accuracy less than 3mtr.
- b) The co-ordinates of all the angle points as well as other important crossings, landmarks etc. shall be recorded using DGPS for easy relocating. In addition, the angle point locations etc shall be marked using marking stones of size 200 x200 x 1000 mm, with approved marks including painting above the ground level and yellow lettering and marking the direction of incoming and outgoing lines are to be marked clearly on the top with red colour. If the distance between such anchor points is more than 1KM one more directional stone is to be fixed. So also, for the road crossings, railway crossing and nala crossings on both the sides.
- c) At the starting point of the commencement of route survey the coordinates shall be recorded. The co-ordinates of the location of the survey instrument shall also be recorded. Further, the co-ordinates at prominent position at intervals of not more than 750 metre. Along the transmission line to be surveyed up to the next angle point shall also be recorded. Wherever the line alignment crosses the EHT line, railway line, P & T line or roads, the contractor shall record co-ordinates on the points of crossing. Wherever line route alignment passes over permanent land marks such as rock, boulders, culverts etc. suitable white paint marks with directional and KPTCL markings shall be made and co-ordinates recorded

12. Profiling

- a) The complete profiling along the route shall be carried out using modern surveying equipment's viz, total stations, DGPS, digital theodolite, long range scanners etc. Reference levels at every 20 meters along the route are to be recorded. In case of hilly terrain/undulations RL shall also be measured for 10mtr on either side of centre line in lateral direction (perpendicular to the line). R/L's at other undulations along the route as well as in the route plan and other enroute details viz. Crossings, building & structure, trees & other infrastructure etc. shall also be recorded. Areas

along the route, which in the view of the contractor, are not suitable for tower spotting, shall also be marked.

- b) The complete profiling details shall be digitized, and the data shall be prepared & stored in the format compatible to computer-aided tower spotting software.
- c) A printed/plotted output of the digitized profiling shall be submitted by the contractor to Owner's site-in-charge for review before taking up computer-aided tower spotting.

13. Optimization of Tower Location/Tower Spotting.

- a) Optimization of tower locations shall be done by the contractor using computer-aided tower spotting software- PLS-CADD. In order to verify the results of computer aided tower spotting, the contractor shall furnish sample calculations and manual tower spotting drawings for some typical sections.
- b) The sag-tension characteristics of the conductor as well as tower spotting data shall be furnished by the contractor for the owner's approval before execution. Sag template curves, shall be prepared by the contractor on acrylic sheet indicating cold curve, hot curve, ground clearance curve and support footing curve and the same shall be submitted to the owner.

14. Tower Spotting

a) Span

The maximum length of a section shall be 3.20 Km or sum of 10 spans whichever is less. A section point shall comprise of tension point with DB/B type or DC/C type or DD/D type towers as applicable. The normal span shall be considered as 320 Mtrs.

b) Extension / Truncation

An individual span shall be as near to the normal design span as possible. In case an individual span becomes too short with normal supports on account of undulations in ground profile, one or both the supports of the span may be extended by inserting standard body/leg extension. In case of locations where the ground clearance is available, truncated towers may be spotted. The provisions kept in the design of towers w.r.t. body /leg extns, truncations shall be considered by the contractor during execution stage

c) Loading

There shall not be any upward force on suspension towers under normal working conditions and the suspension towers shall support at least the minimum weight span as provided in the designs. In case uplift is unavoidable, it shall be examined if the same can be overcome by adding standard body extensions to the towers failing which tension towers designed for the purpose shall be employed at such positions.

d) Road Crossing

At all important road crossings, the tower shall be fitted with double suspension or tension insulator strings depending on the type of tower but the ground clearance at the roads under maximum temperature and in still air shall be such that even with conductor broken on adjacent span, ground clearance of the conductor from the road surfaces shall not be less than 12.00

metres. At all national highways tension towers shall be used and crossing span shall not be more than 250 meters.

e) **Railway Crossings**

All the railway crossings coming-enroute the transmission line shall be identified by the Contractor. At the time of detailed survey, the railway crossings shall be finalized as per the regulation laid down by the Railway Authorities. The following are the important features of the prevailing regulations (revised in 1987)

- i. The crossings shall be supported on DD/D type tower on either side depending on the merits of each case
- ii. The crossing shall normally be at right angle to the railway track.
- iii. The minimum distance of the crossing tower shall be at least equal to the height of the tower plus 6 mtrs away measured from the center of the nearest railway track
- iv. No crossing shall be located over a booster transformer, traction switching station, traction sub-station or a track cabin location in an electrified area.
- v. Minimum ground clearance above rail level of the lowest portion of any conductor under condition of maximum sag shall be maintained at 15.40mtrs.
- vi. The crossing span shall be limited to 200 mtrs

f) **River Crossings**

In case of major river crossing, towers shall be of suspension type (River crossing tower) and the anchor towers (Balancing towers) on either side of the main river crossing shall be DD/D type tower with zero-degree deviation. Clearance required by navigation authority shall be provided. For non-navigable river, clearance shall be reckoned with respect to highest flood level (HFL).

g) **Power line Crossings**

Where this line is to cross over another line of the same voltage or lower voltage, DD/D type tower with suitable extensions shall be used. Provisions to prevent the possibility of its coming into contact with other overhead lines shall be made in accordance with the Indian Electricity Rules, 1956/ Indian Electricity Act 2003 as amended up to date.

Minimum clearance in mtr. Between lines when crossing each other

Sl. No	Nominal System voltage	66/110kV	220kV	400kV
1	66/110 kV	3.05	4.58	5.49
2	220 kV	4.58	4.58	5.49
3	400 kV	5.49	5.49	5.49

For power line crossings of voltage level of 66 KV and above, an angle tower shall be provided on either side of DD/D type tower which can be temporary dead end condition with proper guying.

The angle of crossing has to be preferably 90 degree and at any time should not be below 60 degree

h) Telecommunication Line Crossings

The angle of crossing shall be as near to 90 degrees possible. However, deviation to the extent of 30 degree may be permitted under exceptionally difficult situations. When the angle of crossing has to be below 60 degrees, the matter will be referred to the authority in-charge of the telecommunication System. On request from the Contractor, the permission of the telecommunication authority may be obtained by the Owner.

Also, in the crossing span, power line support will be as near the telecommunication line as possible, to obtain increased vertical clearance between the wires.

i) Details Enroute

All topographical details, permanent features, such as trees, building, land survey nos. etc. 17.50 mtr. on either side of the alignment shall be detailed on the profile plan. All the topographical details (trees, buildings, permanent structures, including open land) survey no. wise shall be included in the report.

15. Clearance from Ground, Building, Trees etc.

Clearance from ground, buildings, trees and telephone lines shall be provided in conformity with the Indian Electricity Rules, 1956 / Indian Electricity Act 2003 as amended up to date.

- a) The Contractor shall estimate/enumerate numbers of trees that are to be cut within right of way of transmission line along the proposed route alignment. Contractor may please note that Owner will not pay any compensation for any loss or damage to the properties or for tree cutting due to Contractor's survey work.
- b) The trees and bushes existing within 17.50 mtr. on either side of the central line alignment shall be estimated/enumerated by the contractor and marked with quality paint serially from angle point 1 (One) onwards. The trees list should contain the following:
 - i. Approx. Girth (circumference) measured at a height of 1 mtr. from Ground level.
 - ii. Approximate height of the tree with an accuracy of + 2 metres.
 - iii. Name of the type of the species/tree
- c) The bushy and undergrowth encountered in the 17.50 mtr. belt on either side of the central line alignment should also be evaluated with its type, height and girth clearly indicating in the tree /bush statement. The tree/bush statement should also approximately indicate the percentage area within right of way where tree/bush exist.
- d) The contractor shall also intimate the Owner, his assessment about the likely amount of tree & crop compensation etc. required to be paid by the Owner during execution stage for trees in 35 mtr. belt. This assessment shall be done considering prevailing practices/guidelines, local regulations and other inquiries from local authorities.
- e) The contractor shall also identify the forest/non-forest/ deemed forest/private land/Government land areas involved duly authenticated by concerned authorities.

- i. A statement of forest areas with survey/compartment nos. (all type of forest /RF /PF Acquired Forest/ Revenue forest/Private forest/forest as per dictionary meaning of forest etc.
- ii. A statement of non-forest areas with survey/compartment nos.
- iii. Tree cutting details (Girth wise & species wise)
- iv. Marking of forest areas with category on topo- sheets 1:250,000 showing complete line route, boundaries of various forest divisions and their areas involved.
- v. Village forest maps of affected line and affected forest areas and marking of the same.
- vi. Forest division map showing line and affected forest areas.
- vii. The contractor shall furnish village Revenue survey map duly mentioning the survey nos., name of the owner (to be collected through RTC-record of rights and tenancy certificate) along the proposed corridor width.
- viii. The village Revenue survey map is to be certified by Govt. Surveyor and countersigned by Revenue Inspector/Village Accountant
- ix. The village Revenue survey map is to be digitized and Geo referenced and superimposed on the selected corridor duly indicating the survey noo lands coming under the corridor
- f) The contractor shall finalize the forest clearance proposal on the prescribed format duly completed in all respects for submission by the owner to the forest department.

16. Preliminary Schedule

The profile sheets showing the locations of the towers together with preliminary schedule of quantities indicating tower types, wind & weight spans, angle of deviation, crossing & other details etc. shall be submitted by the contractor for review & approval by Owner's site-in-charge.

17. Detailed Survey of Tower Locations.

- a) The detailed survey shall be conducted for spotting the tower locations on ground conforming to the approved profile and tower schedule.
- b) The co-ordinates of all the tower locations shall also be recorded using DGPS of positional accuracy less than 3mtr. For easy relocating. The position of all tower locations shall be marked in the final digitized route alignment drawing with relative distance from any permanent benchmark in the area.
- c) The contractor shall also collect required data at each tower location in respect of soil strata, ground water level, history of water table in adjacent areas/surface water and classify the suitable type of foundation at each location and detailed soil investigations carried out at selected locations etc

18. Contouring at hilly / undulated locations

- a) The levels up or down of each pit centre with respect to centre of tower location shall be recorded at intervals of 2 mtrs using total stations / DGPS / digital theodolite and digitized contour plans shall be made. Based on the digitized elevation plans, the quantities of benching & protection work vis-a-vis possible unequal leg extensions shall be optimized using suitable computer-aided techniques/ software's. Required tower and foundation details, cost data for comparative

evaluation of benching & protection work vis-a.-vis unequal leg extensions shall be provided by the contractor to the owner before execution stage

- 19. The changes desired by the Owner in the preliminary tower schedule or as maybe required based on detailed survey of tower locations & contouring by the contractor, shall be carried out by the contractor and the final tower schedule shall be submitted for approval of Owner. The tower schedule shall show position of all type of towers, span length, type of foundation for each tower, benching & revetment requirement, unequal leg extensions, deviation at all angles, crossing & other details etc.**

20. Survey Methodology & Precision

- a) All elevations shall be referenced to benchmarks established by the survey of India. Levelling operations shall begin and end at benchmarks approved by the Owner
- b) During the levelling of the profile, check surveys will be affected at intervals not exceeding 50 kms. With benchmarks of known elevations. The difference in elevations as surveyed by the contractor and as declared by Survey of India for these benchmarks shall not exceed the precision required for 3rd order surveys $\leq 24k$ where k is the distance between benchmarks in km and e is the difference between elevations in mm
- c) In the absence of suitable benchmarks, the levelling shall be done by two independent levelling parties working in opposite directions along the same line. The difference in elevations between the two surveys shall not exceed the precision required for 3 Rd order surveys as stated above.
- d) All-important objects and features along the transmission line centerline (railways, highways, roads, canals, rivers, transmission lines, distribution lines, telephone lines etc.) shall be surveyed and located with a positional accuracy of 1:2000 between points of known horizontal position.

21. Survey Report

- a) Complete BOQ of the transmission lines as per the technical specifications shall be furnished in the survey report.
- b) Each angle point locations shall be shown with detailed sketches showing existing in the close vicinity permanent landmarks such as specific tree(s), cattle shed, homes, tube wells, temples, electric pole/tower, telephone pole, canal, roads, railway lines etc. The relative distance of landmarks from the angle points and their bearings shall be indicated in the sketch. These details shall be included in the survey report.
- c) Information w.r.t. infrastructure details available enroute, identification and explanation of route constraints, etc shall also be furnished in the Survey report and shall inter-alia include the following:
- d) Information regarding infrastructural facilities available along the final route alignment like access to roads, railway stations, construction material sources (like quarry points for stone, sand and availability of construction water), labour, existing transport facilities, fuel availability etc. shall be furnished in the survey report
- e) All observations which the Contractor thinks would be useful to the construction of the transmission lines mentioned under scope of work are to be reported.

- f) Suggestions regarding the number of convenient zones (line segments/portions) in which the entire alignment can be divided keeping in view the convenience of line construction, operation, maintenance etc. Are to be given.
- g) Suggestions regarding location for setting up stores during line construction in consultation with Owner representatives shall also be provided by the Contractor.
- h) Working months available during various seasons along the final route alignment, with period, time of sowing & harvesting of different type of crops and the importance attached to the crops particularly in the context of way leave problems and compensation payable shall be stated by the Contractor.
- i) Availability of labour of various categories and contractors of civil works shall also be reported.
- j) Some portions of the line may require clearance from various authorities. The Contractor shall indicate the portion of the line so affected, the nature of clearance required and the name of concerned organizations such as local bodies, municipalities, P&T (name of circle), Inland navigation, Irrigation Department, PGCIL Zonal railways, Divisional Forest Authorities, Military, Civil and Defence Authorities etc.
- k) All the requisite data for processing the case of statutory clearances such as PTCC, Forest, Railway and Highway Authority shall be provided along with the report.
- l) The contractor shall also collect & report details pertaining to pollution levels envisaged along the transmission line.
- m) Six copies of survey reports (Hard & soft) and all documents shall be furnished by the contractor to the Owner.

22. Technical Specification for Execution of the work

The objective is to transform a hitherto routine manual inspection and maintenance process with drones so as to make the entire workflow efficient, expedient, and economical. Drones or UAVs capable of reaching risky and difficult-to-reach areas would conduct the visual and thermal inspections.

22.1 Thermal and Visual Inspection of Tower (Transmission)

- Pole Structure Inspection
- Condition of the structure
- Condition of insulators – Broken, Flash Mark etc.
- Condition of conductors throughout the line
- Danger board/Anti-climbing availability
- Status of Jumpers
- Foundation status of structure
- Condition of earth wire /OPGW
- Hot spot analysis
- Condition of joints of conductors
- Earthing of structure
- Clearance of crossing with line e.g LT lines/HT lines/Road/Railway etc. through Airborne Laser terrain mapping (ALTM) method/Modern survey Techniques.

22.2 Inspection of Transmission Line Conductors:

Conduct aerial inspection of Transmission line conductors using IR and RGB sensors and provide thermal/visual anomaly report. Drone must capture an aerial video (thermal/visual) of transmission lines and prepare a pdf/excel sheet report for anomalies reported in terms of hotspot, kite string etc.

22.3 Access to Cloud Platform:

Cloud based analytics platform must be accessible to TPTL and have actionable aerial intelligence to reduce time and costs, improve safety and make faster decisions in the O&M functions that transforms traditional operations and maintenance (O&M) functions by delivering real-time data-driven insights to decision-makers. Platform should enable the user to have a repository of the data and perform various functions such as annotation marking, zooming in, zooming out, applying filters, comments etc. Users can generate customized reports in .pdf as well as .xls format.

Cloud platform must have following features: -

- App based thermal/visual data syncing
- Inspection gallery to annotate the anomalies and severity
- Online reporting preparation (PDF/Excel sheet)
- Download and share reports
- Video/image-based analytics like zoom, image capture and reporting
- Platform should be complete cloud based digital repository to keep the historical data
- Platform should be AI powered for auto detection of anomaly from uploaded data.

22.4 UAV Survey:-

All the equipment used in the UAV shall be capable enough to collect, process, and adjust data with enough precision to meet the accuracy requirements of the project and applicable accuracy standards described in this document. The UAV is to be flown in a safe method in order to avoid any kind of damage to humans and the environment. The Contractor shall be responsible for obtaining all the necessary clearances from DGCA & Ministry of Defence, other agencies of Government of India, local authorities, etc. for flying over the AOI to acquire Drone data, Imagery etc.

23. Scope of Work (SOW) for Aerial Inspection 132 KV Transmission Network Using Drone-Based Technology

23.1 Project Overview

This project involves a **systematic, high-precision aerial inspection** of the **132 KV Transmission Network** under TPTL, using advanced **drone-based technology**. The scope includes:

- **Surveying and mapping of transmission lines** using high-resolution RGB, thermal, and LiDAR sensors.
- **Structural health assessment** of transmission towers, conductors, insulators, and infrastructure components.

- **AI-powered anomaly detection** to identify potential faults and failure risks.
- **Command & Control Centre Setup with delivery of a dedicated android/ IOS app & Multi level portal access.**
- **Geo-tagged data collection & visualization** in a centralized platform for real-time monitoring.
- **Predictive maintenance reporting** to minimize downtime and enhance grid reliability.

The **primary objectives** are to improve **efficiency, accuracy, and safety** while reducing manual inspection efforts and associated costs.

24. Technical Specifications & Requirements

24.1 Drone Requirements

The aerial inspection will be conducted using high-performance UAVs (Unmanned Aerial Vehicles) with the following capabilities:

- **Type of Drone:** Industrial-grade **multi-rotor or hybrid VTOL drone** capable of autonomous operations.
- **Payload Capacity:** Minimum **2 kg** to support advanced imaging sensors.
- **Flight Time:** Minimum **40 minutes** per battery cycle, with **hot-swappable battery** functionality.
- **Range & Connectivity:**
 - Minimum **5 km operating range** with RF and LTE communication.
 - **BVLOS (Beyond Visual Line of Sight) capability**, subject to regulatory approvals.

24.2 Navigation & Positioning:

- **Dual-band RTK/PPK GNSS support** (GPS + GLONASS + BeiDou).
- Accuracy within **2 cm** for precise georeferencing.
- **Wind Resistance:** Capable of withstanding **wind speeds up to 30 km/h**.

24.3 Failsafe Mechanisms:

- **Redundant communication channels (RF + LTE).**
- **Auto Return-to-Home (RTH)** on low battery or lost signal.
- **Emergency landing protocols** with pre-determined safe landing zones.
- **Collision avoidance system** with LiDAR-based object detection.

25. Imaging & Thermal Inspection Equipment

25.1 High-Resolution RGB Camera

- **Resolution:** minimum **20 MP sensors**.

25.2 Zoom Capability:

- **Optical zoom up to 30x** for detailed inspections.
- **Digital zoom up to 120x** for distant object detection.
- **Frame Rate:** Supports **4K UHD recording at 60 FPS**.
- **Stabilization:** 3-axis gimbal with electronic image stabilization (EIS).
- **Data Output:** Supports **RAW and JPEG formats** for post-processing.

25.3 Thermal Infrared Camera

- **Resolution:** Minimum **640 × 512 px** with radiometric data capture.

- **Temperature Sensitivity:** Detects differences as small as **0.05°C**.
- **Detection Range:** Covers **0°C to 1000°C** with automatic scaling.
- **Anomaly Detection:** Identifies **overheating components, insulation failures, and loose connections**.

25.4 LiDAR Sensor (if applicable)

- **High-density point cloud generation** for 3D modelling of transmission structures.
- **Accuracy:** Minimum **2 cm** precision.
- **Penetration:** Effective under dense vegetation for **topographical analysis**.

25.5 Data Collection, Processing & Analytics

All collected data must be processed using AI-powered software to generate actionable insights.

25.6 Geo-Tagged Data Collection

- **All images, videos, and thermal scans must include GPS metadata** (latitude, longitude, altitude).
- **Time-stamped logs** for every captured data point.

25.7 Corrosion & Rust Detection: Identifies rusting components using AI-based analysis.

- **Crack & Structural Damage Detection:** Uses deep learning models to detect fractures.
- **Overheating & Loose Connections:**
- **Infrared thermal mapping** of transmission lines.
- Identifies **loose or damaged insulators**.
- **Conductor Sag & Clearance Analysis:**
- Measures ground clearance and phase-to-phase distances.
- Detects sagging or misaligned conductors.

25.8 Integration with GIS & Digital Twin Models:

- All anomalies must be visualized in **GIS-compatible formats**.
- **3D Digital Twin models** for infrastructure visualization.

25.9 Flight Operations & Safety Protocols

- **Pre-Flight Planning & Risk Assessment:**

25.10 Route mapping using GIS data.

- Identifying potential obstacles such as trees, buildings, and restricted zones.

25.11 BVLOS (Beyond Visual Line of Sight) Operations:

- Subject to **DGCA regulatory approvals**.
- Use of **RF and LTE-based command & control systems**.

25.12 Failsafe Protocols:

- **Real-time telemetry monitoring** during flight.
- **Emergency auto-landing capabilities** in case of signal loss.
- Redundant power backup for mid-air safety.

25.13 No-Fly Zone Compliance:

- Adherence to **DGCA, ATC, and Ministry of Defence regulations**.

26. Project Deliverables

26.1 Final Deliverables

- **High-Resolution RGB Images & Video Documentation** (Geo-referenced).
- **Thermal Imaging Reports** with identified hotspots.
- **AI-Powered Fault Analysis Reports.**
- **3D Digital Twin Models** (if applicable).

26.2 Complete Transmission Network Inspection Report including:

- **Structural anomalies** in towers and conductors.
- **Corrosion and thermal hotspots analysis.**
- **Predictive maintenance recommendations.**

26.3 Flight Logs & Reports for all missions.

- **Command & Control Centre for live streaming & Multi level Portal login**
- **Android/ IOS based APP**

27. Compliance & Regulatory Requirements

27.1 DGCA Certification:

- All UAVs must be **DGCA-certified and compliant** with Indian aviation laws.

27.2 Cyber security & Data Protection:

- **End-to-end encryption** for captured data.
- **No third-party access** without TPTL approval.

27.3 Environmental & Safety Regulations:

- **Minimal noise pollution and eco-friendly flight paths.**
- **Strict data privacy compliance** for sensitive locations.

28. Additional Inputs:-

28.1 Comprehensive Training and Parallel Operational Execution by the Bidder by deploying Pilot for 1 Year after the commission of the equipment.

- To ensure the effective execution and long-term self-reliance of TPTL in drone operations, the bidder shall undertake the complete responsibility for all field operations in the first year as defined in the Scope of Work. Simultaneously, the bidder will conduct a comprehensive training program for 18 nominated personals of TPTL during the first year of operations.
- **Deployment of Skilled Manpower:** The bidder shall deploy trained drone pilots, data analysts, ground crew, and technical experts to manage the entire operations – including drone flying, surveillance execution, data processing, command centre management, and maintenance. The scope of work in bidder deployed pilot for implementation and training for the period of One Year.
 - a. Pole Structure Inspection
 - b. Condition of the structure

- c. Condition of insulators – Broken, Flash Mark etc.
 - d. Condition of conductors throughout the line
 - e. Danger board/Anti-climbing availability
 - f. Status of Jumpers
 - g. Foundation status of structure
 - h. Condition of earth wire /OPGW
 - i. Hot spot analysis
 - j. Condition of joints of conductors
 - k. Earthing of structure
 - l. Clearance of crossing with line e.g LT lines/HT lines/Road/Railway etc. through Airborne Laser terrain mapping (ALTM) method/Modern survey Techniques.
 - m. Foundation check for Soil erosion, earthing condition above ground will be captured.
-
- Training as per DGCA Norms: The training shall be in strict accordance with DGCA guidelines for RPAS operations, and will include both theoretical modules and hands-on flight training.
 - Platform-Specific Knowledge Transfer: Nominated TPTL personnel will be trained on the exact drone models and payloads used in operations, including live streaming, inspection protocols, and reporting methods.
 - Flexible Training Schedule: Theoretical and on-ground training sessions will be scheduled as per TPTL's convenience, ensuring no disruption to operations.
 - Parallel Training and Execution: While operations continue uninterrupted by the bidder's team, knowledge will be gradually transferred to TPTL's employees, creating a self-sustained internal capability within a year.
- This integrated approach ensures a seamless operational rollout while simultaneously building the in-house technical capacity of TPTL.**

29. Strategic Deployment of 8 Drone Units for Zonal Coverage and Operational Redundancy

29.1 The project will commence with the deployment of 8 drone systems designed for high-performance aerial surveillance of electrical infrastructure. These will be strategically assigned as follows:

- Zonal Allocation: 6 drones will be distributed across 3 operational zones of TPTL, with 2 drones per zone to ensure redundancy and uninterrupted coverage.
- Reserve Drones for Emergency Use: 2 additional drones will be retained as spares, ready to be deployed in case of any technical issues, maintenance downtime, or for high-priority tasks.
- Advanced Payloads: Drones will be equipped with day/night vision cameras, thermal imaging sensors, GPS-based navigation, and AI-integrated live video streaming for accurate inspection and documentation.
- Operational Continuity: With multiple units per zone and a defined replacement strategy, the deployment ensures continuous, real-time monitoring with minimum service disruption.

This layout supports efficient asset coverage, rapid fault identification, and immediate emergency response.

30. Robust Annual Maintenance Contract (AMC) Covering All Equipment and Systems

30.1 To guarantee high availability and consistent system performance, a 100% comprehensive AMC will be provided by the bidder, covering all hardware and software components associated with the drone system and command center. **Key features include:**

- **Total Coverage:** The AMC includes drones, payloads, batteries, chargers, software systems, servers, network equipment, and all components of the Command and Control Centre.
- **SLA-Based Response Time:** The bidder shall ensure repair or replacement within 36 hours of official confirmation of any issue reported by TPTL.
- **Preventive and Corrective Maintenance:** Regular preventive checks and on-demand corrective actions will be part of the AMC, ensuring minimal downtime and long system life.
- **Remote and On-Site Support:** Depending on the nature of the issue, remote diagnostics, software patching, or on-ground technician deployment will be executed promptly.

This ensures zero operational lag, predictable maintenance budgeting, and high system uptime.

31. Extended Surveillance Scope Including Distribution Network, Theft & Vegetation Detection

31.1 Beyond transmission lines, the drone surveillance system will also comprehensively monitor the distribution network, with advanced capabilities integrated for anomaly and risk detection. The platform shall provide:

- **Pole and Wire Inspection:** AI-based image analysis to detect physical degradation, misalignment, or damage in poles and wires across the distribution segment.
- **Detection of Power Theft via Hooking: The system will identify illegal power tapping through visible hooking from wires, using visual and thermal inspection methods.**
- **Vegetation Encroachment Monitoring:** The system will also identify vegetation growth near electric poles and power lines, which can pose serious risks to safety and uninterrupted supply. Geo-tagged alerts will be issued for all such findings.
- **Real-Time Alerts and Integrated Reporting:** Data and findings will be streamed in real time to the central command center, tagged with GPS coordinates and photographic/video evidence, allowing field teams to take rapid action.
- **Analytics Integration:** Detected issues will be categorized and visualized through the command center dashboard, allowing trend monitoring and predictive maintenance planning.

➤ **This expanded functionality will empower TPTL to maintain both transmission and distribution networks, prevent power theft, ensure vegetation control, and enhance the reliability and safety of power supply infrastructure.**

32. Supply & commissioning of all the components including Hardware & Software completed within 120 Days from the date of issue of LOA.

Detailed Technical specification:-

Sl. No.	Item	Specification
1	Industrial Inspection Drone	Multi-rotor or hybrid VTOL, DGCA certified, Flight time ≥ 30 minutes, Payload capacity 2–5 kg, Wind resistance up to 35 km/h, Communication range at least 5 km (LOS), Constructed with carbon fiber or composite, Safety features include dual GPS, dual IMU, Return-to-Home
2	High-Resolution RGB Camera	1-inch CMOS sensor, Minimum 20 MP resolution, 4K video at 60 fps, 3-axis stabilized gimbal, Auto-focus, geo-tagging, distortion correction
3	Thermal Imaging Sensor	Radiometric sensor, Resolution of 640 x 512 pixels, Temperature range - 20°C to 150°C, Frame rate 30 Hz, Includes isotherm mapping and real-time hotspot tracking
4	LiDAR Sensor (Optional)	Multi-echo or solid-state LiDAR, Range 100–300 meters, Accuracy ± 5 cm, Point capture rate over 100,000 points per second, Field of view 360 degrees
5	RTK/PPK Module	RTK + PPK enabled, Accuracy ± 2 cm, Supports RTCM and NTRIP protocols, Compatible with standard GNSS base stations
6	Obstacle Avoidance Sensors	Coverage on front, back, bottom, top, and sides, Detection range ≥ 20 meters, Uses stereo vision or infrared technology
7	Night Vision Camera	Full HD resolution, Low-light CMOS sensor, Infrared LED illumination, Gimbal-mounted for mobility and stability
8	Payload Release System	Capacity 1 to 5 kg, Remote-controlled release system, Built using aircraft-grade aluminium, Suitable for emergency distribution
9	Battery Packs	Lithium Polymer (Li-Po) or Li-Ion, Capacity $\geq 10,000$ mAh, Voltage 22.2V (6S), Features overcharge and thermal protection (extra 4 spare battery with each Lidar)
10	Smart Charging Station	Input voltage 220–240V AC, Capable of charging 4 batteries simultaneously, Equipped with auto cut-off and surge protection
11	Propeller Kits	Made of carbon fiber or polycarbonate, Includes 2 full kits per drone, Quick-release mechanism, Vibration dampening
12	Transport Case	Shockproof and waterproof, Custom foam layout for drone and accessories, Includes TSA lock, telescopic handle, and wheels
13	NDVI Filters / Polarizers	Optical filters designed for vegetation health monitoring, Anti-reflective and scratch-resistant coating, Compatible with standard drone cameras
14	Repair & Tool Kit	Includes multimeter, Allen keys, screwdrivers, prop wrench, insulation tape, thread lock, Packed in a compact shockproof case
15	Drone Pilot	DGCA-certified remote pilot, Trained in agricultural, inspection, mapping, and surveillance operations, Responsible for flight safety and data capture
16	Co-Pilot / Field Assistant	Technically trained assistant, Supports drone pilot with flight setup, battery management, and logistics
17	Operational Vehicle	Modified SUV or van, Equipped with 2 kW inverter power system, Includes storage compartments, workstation setup, optional overhead canopy

Sl. No.	Item	Specification
18	Server System	32-core Intel Xeon or AMD EPYC processor, 128 GB RAM, 10 TB SSD storage with RAID, GPU: NVIDIA RTX 3090, Runs on Windows Server or Linux
19	Operator Workstations	Intel i7 or AMD Ryzen 7 processor, 32 GB RAM, 1 TB SSD storage, Dual 24" Full HD monitors, Preloaded with GIS, live streaming, and analytics software
20	Video Wall System	Four 55" 4K UHD LED display panels, Seamless matrix display configuration, Includes HDMI switch, wall mounts, cable management accessories

Bill of Quantities

Sl. No.	Category	Item	Detailed Description / Specifications
1	Drone Hardware	Industrial Inspection Drone	Type: Multi-Rotor / Hybrid VTOL
			DGCA Certified: Yes (Type Certified)
			Flight Time: Minimum 30 minutes per flight under load
			Wind Resistance: Up to 12 m/s
			IP Rating: IP54 or higher for outdoor deployment
2		High-Resolution RGB Camera	Sensor: 1" CMOS or higher
			Resolution: 20 MP or higher
			Zoom: Minimum 20x Optical Zoom
			Video Output: Upto 4K/60fps
			Gimbal: 2/3-Axis Mechanical Gimbal Stabilized
3		Thermal Imaging Sensor	Type: Radiometric Thermal Camera
			Resolution: Minimum 640 x 512 pixels
			Temperature Accuracy: ±2°C
			Frame Rate: Minimum 30Hz
			Radiometric Measurement: Enabled
4		LiDAR Sensor (If required)	Type: Multi-echo or Solid-State LiDAR
			Range: Minimum 150m
			Accuracy: ±3 cm
		(If required)	Point Density: >100,000 points/sec
			Use: Clearance and sag calculation, asset modelling
5	RTK/PPK Positioning Module	Positioning: Real-Time Kinematic and Post Processed Kinematic	
		Accuracy: < ±5 cm	
		Compatibility: GNSS-enabled systems	
		Base Station: Included	
6	Obstacle Avoidance Sensors	Type: Multi-directional Vision Sensors	
		Direction: Forward, Backward, Upward, Downward, Lateral	
		Operating Range: Upto 5 meters	
7	Night Vision Camera (Optional)	Low-light CMOS Sensor	
		Illumination: Infrared LEDs	
		Use: Night-time inspection capability	
8	Payload Release System	Mechanism: Remote-controlled payload release	
		Load Capacity: 2 kg or better	

Sl. No.	Category	Item	Detailed Description / Specifications
9	Drone Accessories	Battery Packs	Battery Type: Li-Po High Density
			Minimum Quantity: 4 Batteries per drone
			Endurance per Battery: ≥ 35 minutes
			Li-Po or Li-ion
10		Smart Charging Station	Input: 220-240V AC
			Charging Slots: Minimum 4 simultaneous
			Charging Time: ≤ 90 minutes per battery
11		Propeller Kits	Extra propellers (2 full sets per drone)
			Material: Carbon Fiber or High-Impact Plastic
12		Transport Case	Type: Waterproof and Shockproof
			Padding: Custom foam inserts for each component
13		NDVI Filters / Polarizers	Compatibility: With RGB camera
			Use: Vegetation and heat signature analysis
14		Repair & Tool Kit	Includes: Multimeter, propeller wrench, screwdrivers, connectors, heat shrink, cables
Sl. No.	Category	Item	Detailed Description / Specifications
15	Manpower Deployment (12 Months)	Drone Pilot	DGCA Certified Remote Pilot
16		Co-Pilot/Field Assistant	Trained technician for on-site operations, safety, and checklist management
17	Vehicle Support Unit	Operational Vehicle	Type: Modified SUV/Van with portable charging & workbench setup
			Power: 3 kVA Inverter with Battery Backup
			Storage: Drone cabinet, safety kit, diagnostic tools
18	Command & Control Centre – Hardware	Server System	CPU: Intel Xeon or AMD EPYC 32-core
			RAM: Min 64 GB
			Storage: 10 TB RAID 5 + Backup NAS
		Operator Workstations	Processor: i7 / Ryzen 7 or higher
			RAM: 32 GB
			GPU: Dedicated 4GB VRAM
			Display: LED monitor setup
		Video Wall System	Configuration: 4 Display (55” each)
			Resolution: 4K UHD
			Inputs: HDMI, SDI, NDI compatible
		Storage System	NAS Unit: 100 TB usable space
			Backup Frequency: Daily auto backup
			Retention Policy: 90 days minimum
Power Backup	UPS: 10 kVA		
	Inverter Backup: 8+ hours for full load		

Sl. No.	Category	Item	Detailed Description / Specifications
19	Command & Control Centre – Software	Drone Video Ingestion System	Real-time live feed software
			Low-latency encoding, multiple drone input
			Compatible with RTSP, SRT, NDI protocols
		GIS Platform	Real-time asset tagging, route overlay, vegetation mapping
			Integration with Drone Telemetry
		AI Fault Detection Engine	Trained ML model for rust, crack, insulator failure, line sag, encroachment
			Accuracy: $\geq 92\%$ detection rate
		Digital Twin Software	3D model viewer of the transmission corridor with inspection overlays
		Command Dashboard	Features: Drone logs, Analytics dashboard, Mission Planner, Flight Health Tracker
		Mobile Application	Platform: Android/iOS
			Purpose: Live view for officials, location tagging, real-time alerts
		Data Export Module	Formats Supported: CSV, GeoTIFF, PDF, Excel, Shapefile
20	Live Streaming & Data Communication	Streaming Platform	Adaptive Bitrate Video Streaming
			Cloud and On-premise options
			Data Encryption: AES 256-bit
		Connectivity Devices	4G/5G industrial routers with external antenna, failover SIM support
21	Analytics & Reports	Analytics Engine	Line Clearance & Sag Calculation
			Fault Frequency & Priority Mapping
			Change Detection over time
		Output Reports	Tower-wise Geo-tagged Report
			Fault Anomaly Report
			Thermal Image Mapping
			Summary Dashboard Reports (Monthly/Quarterly)

Sl. No.	Category	Item	Detailed Description / Specifications
22	Training & Certification	Drone Pilot Training	40 Hours DGCA-aligned course
			Simulator + Field + Emergency Procedures
		Data Analyst Workshop	Training on AI fault detection, GIS platform, digital twin integration
		SOP Training	Emergency Handling, Compliance Protocols, Drone Maintenance Manual
23	Compliance & Safety	Regulatory Management	NPNT Compliance, DGCA Logbook, UIN Management
			No-Fly Zone Clearance Filing
		PPE & Safety Kit	Safety Helmet, High-Vis Jacket, Fire Extinguisher, First Aid Kit
24	Annual Maintenance & Support	Drone AMC	Quarterly Preventive Maintenance
			Replacement / Repair for Faulty Units
			Firmware & AI Software Updates
		Technical Support	Dedicated Helpline number, Remote Diagnostics, On-site Engineer within 72 hrs

**PROFORMA OF BANK GUARANTEE FOR
CONTRACT PERFORMANCE
(To be stamped in accordance with stamp Act)**

Ref.

Bank Guarantee No.

Date

To
The Dy. General Manager
Transmission Division
TPTL, 79-Tilla, Agartala
Tripura (West) - 799006

Dear Sir,

In consideration of **Tripura Power Transmission Limited** (hereinafter referred to as the 'Owner', which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s _____ with its registered/Head office _____ at _____ (hereinafter referred to as 'Contractor' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a Contract by issued of Owner's Letter of Award _____ dated _____ and the same having been acknowledged by the Contractor, valued at _____ including GST for the work " _____," (scope of contract) and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to Rs. (_____) being 10% (Ten per cent) of the said value of the Contract (Excluding GST) in favour of **TRIPURA STATE ELECTRICITY CORPORATION LIMITED payable at Agartala.**

We, (Name & Address) having its Head Office at.....(hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators , executors and assigns) do hereby guarantee and undertake to pay the Owner, on demand any all monies payable by the Contractor to the extent ofas aforesaid at any time up to.....**.....(days / month / year) without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor.

Any such demand made by the Owner on the bank shall be conclusive and binding notwithstanding any difference between the Owner and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this guarantee during its currency

without previous consent of the Owner and further agrees that the guarantee herein contained shall continue to be enforceable till the Owner discharges this guarantee.

The Owner shall have the fullest liberty without affecting in any way the liability of the Bank under the guarantee, from time to time to extend the time for performance or the Contract by the Contractor. The Owner shall have the fullest liberty, without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Owner and the Contractor or any other course or remedy or security available to the Owner. The Bank shall not be released to its obligations under these presents by any exercise by the Owner of its liberty with reference to the matters aforesaid or any of them or by reason of any other act of omission or commission on the part of the Owner or any other indulgences shown by the Owner or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank.

The bank also agrees that the Owner at its option shall be entitled to enforce this guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee the Owner may have in relation to the Contractor's liabilities.

Notwithstanding anything contained herein above our liability under this guarantee is restricted to **Rs. _____ (Rupees _____) only. This Bank guarantee is valid upto _____ and Claim period up to _____ and shall be extended from time to time for such period (not exceeding one year).**

Bank guarantee No and date:

BG Valid up to :

BG claim period upto :

Dated this day of2025..... At

WITNESS

.....

(Signature)

(Signature)

.....

(Name)

(Name)

.....

(Official Address)

(Official Address)

Attorney as per Power

Of Attorney No.

Date.....

APPLICATION FOR EXTENSION OF TIME

(Part – I)

1. Name of Contractor _____
2. Name of work (as given in the contract) _____

3. Agreement of _____
4. Estimate amount put to tender _____
5. Date of Commencement of work _____
6. Period allowed for completion of work (as per agreement) _____
7. Date of completion stipulated in the agreement _____
8. Period for which extension of time has been given previously if any _____
- a) 1st extension vide No. _____
- b) 2nd extension vide No. _____
- c) 3rd extension vide No. _____
- d) 4th extension vide No. _____
9. Period for which extension have been previously given (Copies of the previous application should be attached).
10. Hindrances on account of which extension is applied for with date on which hindrances occurred.

Sl. No.	Nature of hindrances	Date of occurrence	Period of which hindrances is likely to last	Extension of time applied for by the contractor	Overlapping period, if any, giving reference to items which overlap	Period for which extension is applied for.	Remarks as to why the hindrances occurred and justification for extension of time

11. Total period for which extension is now applied for on account of hindrances mentioned above.

12. Extension of time required for extra work: - _____ Months. _____ days.

13. Detailed for extra work and the amount involved: -

14.

a) Total value of extra work: -

b) Proportionate period of extension of time based on estimated amount put to tender on account of extra work: -

15. Total extension of time required for 11 & 12: -

16. The price shall remain Firm even during extended period whatsoever.

Signature of Contractor

APPLICATION FOR EXTENSION OF TIME

(Part – II)

(To be filled in by TPTL)

1. Date of receipt of application from _____
contractor for the work of _____
_____ in the Sub-Divisional
_____.
2. Acknowledgement issued by the Sr. Manager, vide his No. _____
_____ Dated _____.
3. Recommendation of Sr. Manager, in – charge of the Sub-Division is to whether the reasons given
by the Contractor are correct and what extension, if any, recommended by him, if he does not
recommended the extension, reasons for rejection should be given

Dated

Signature of the Sr. Manager in-charge of Sub-Division.

APPLICATION FOR EXTENSION OF TIME

(Part – III)

(To be filled in by TPTL)

1. Date of receipt in the Divisional office: _____
2. Report of DGM, in-charge of the Division regarding hindrances mentioned by the contractor

Sl. no.	Nature of hindrances	Date of occurrence	Period for which hindrances is likely to last	Extension of time applied for by the contractor	Overlapping period, if any, giving reference to items which overlap	Net extension applied for	Remarks as to why the hindrances occurred and justification for extension recommended

3. Recommendation / Approval of the DGM, in-charge of the Division: -
(The present progress of work should be stated and whether the work is likely to be completed by the date upto which extension is applied for, if extension of time is not recommended, what compensation is proposed to be levied under **clause 13 of section – III**.)

Signature of DGM

4. Recommendation / Approval of the AGM, in-charge of the Circle: -

Signature of AGM

5. Recommendation / Approval of the GM (Technical): -

Signature of GM (Technical)

6. Recommendation / Approval of the CMD: -

Signature of MD

ANNEXURE – IV

(TO BE SUBMITTED WITH DUE ATTESTATION BY NOTARY IN COVER NO.1)

Refer NIT No. _____ Date _____

To

The Deputy General Manager,
Transmission Division,
Tripura Power Transmission Limited,
Agartala.

Declaration

Sir,

I / We hereby on behalf of (the name of the Vendor / Firm.....) declare that we are not "De-barred/Black listed" by any Central (GOI) / State Govt. owned Power Utility, for similar nature of work during last 3 (three) years for whatever reasons.

Yours faithfully

Date:.....

(Signature of the Tenderer)

With rubber Stamp

Attestation Signature of Notary

With Rubber Stamp

Date:

Litigation History

Name of the Bidder:

Year	Award FOR or AGAINST Applicant	Name of client, cause of litigation and matter in dispute	Disputed amount

(Signature of the Tenderer)

With rubber Stamp

DECLARATION

I / We hereby declare that I / we have personally gone through the Bid-Documents of Contract, Technical Specifications, other instructions / Special instructions etc. incorporated in the Bidding Document for the works / Supply and I / We do agree to abide by all the rules and regulations of TPTL.

SIGNATURE OF THE TENDERER / BIDDER

Section – VI

Price Bidding Schedule

Given Separately in MS Excel Sheet in <http://tripuratenders.gov.in>