



**ODISHA POWER TRANSMISSION CORPORATION LIMITED  
OFFICE OF THE Sr.G.M (CPC), OPTCL, BHUBANESWAR**

e-Tender Notice No : CPC-30/2021-22

Tender specification No: Sr.G.M-CPC-e-Tender-Survey, soil testing & DPR R/C-30/2021-22

**INVITATION OF BID**

FOR ENLISTEMENT OF FIRMS IN RATE CONTRACT FOR

“CARRYING OUT ROUTE ALIGNMENT, DETAIL SURVEY, GEO-TECHNICAL SOIL INVESTIGATION AND PREPARATION OF DETAIL PROJECT REPORT FOR UPCOMING PROJECTS OF OPTCL”.

**ODISHA POWER TRANSMISSION CORPORATION LTD.  
REGD. OFFICE: JANPATH, BHUBANESWAR – 751022,**

[e-Tender No. CPC-30/ 2021-22](#)

For and on behalf of Odisha Power Transmission Corporation Ltd (OPTCL), Sr.G.M. [C.P.C.] invites Tenders for enlistment of Firms/ contractors in rate contract for carrying out (1) **Category-I:** Survey (2) **Category-II:** Geo technical soil investigation (3) **Category-III:** Preparation of detail project report for upcoming project of OPTCL, as per tender specification. Interested bidders may visit OPTCL's official web site, [www. tenderwizard.com/](http://www.tenderwizard.com/) [OPTCL for detail specification /bidding document available w.e.f](#) dated 3.1.2022, 03.00PM.

Senior General Manager (CPC)

## TENDER TIME LINE

Sl No	Description	Schedule		
1	e-tender Notice No	CPC-30/ 2021-22		
2	Bid Documents No	Sr.G.M-CPC-e-Tender-Survey, soil testing & DPR R/C-30/2021-22		
3	Description of work	Enlistment of Firms/ contractors in rate contract for carrying out (1) <b>Category-I:</b> Survey (2) <b>Category-II:</b> Geo technical soil investigation (3) <b>Category-III:</b> Preparation of detail project report for upcoming project of OPTCL, as per tender specification		
4	Duration of Rate contract.	02 (Two) Years.		
5	Details of deposits against tender	<u>Category-I (Survey)</u>	Category-II (Geo technical soil investigation)	<u>Category-III (Preparation of detail project report)</u>
5	Tender document cost	₹ 4,720.00 (including GST @18%)	₹ 4,720.00 (including GST @18%)	₹ 4,720.00 (including GST @18%)
6	Bid security	Nil, However, there shall be a provision for "Bid Security Declaration "with the stipulation that if they withdraw or modify their bids during the validity period, they will be suspended for the time specified in the Tender documents.		
7	Security deposit for Enlistment in rate contract	₹ 20,000/-		
8	Tender processing fee	₹ 2360.00	₹ 2360.00	₹ 2360.00
9	Free view of tender document	On or after dated 3.1.2022, 11.00 AM		
10	Issue of bid document	From dated 3.1.2022, 11.01 AM Up to dated 15.1..2022, 12.46 PM		
11	Last date and time for receipt of bid.	Up to dated 15.1.2022, 01.00 PM		
12	Opening of Techno commercial bid (Part-I)	On or after dated 17.1.2022, 11.00 AM		
12	Opening of Price bid (Part-II bid)	To be intimated after completion of techno commercial evaluation.		
13	e-Reverse auction	To be intimated after Price bid evaluation.		

## **(SECTION-I)**

### **GENERAL CONDITIONS & INSTRUCTIONS TO THE BIDDERS**

**SCOPE:** The technical specifications cover detailed survey including route alignment, profiling, and tower spotting, contouring and soil investigation. **The scope of work inter-alia shall include the following-**

1) **Route alignment** using satellite imageries of NRSA, Google images and 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 8 kms. on either sides 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.

2) **Detailed Survey** using GPS, DGPS, Total Stations, long range scanners & Digital theodolites of reasonable accuracies or alternatively using ALTM, (Airborne Laser Terrain Modeling) techniques, inter-alia including:

- i). Digitized profiling along the selected route along with plan details using Power Line Systems Computer Aided Design and Drafting (PLSCADD). The route profile shall be submitted in Auto-CAD format(soft copy shall be preserved for future reference). The GPS coordinate of all individual tower locations shall be submitted in a different sheet.
- 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.

3) **Soil investigation** along the selected route.

- i) Soil resistivity tests along the selected route.
- ii)As a qualifying requirement, the bidder either shall own a NABL accredited Laboratory or agreed to conduct testing of samples at NABL accredited Lab.
- iii) The bidder has to agree to submit soil test report and soil resistivity test report in a new approved format available with Engg. & QC cell of OPTCL.

4) **Preparation of DPR:** Preparation of survey report including estimation of Bill of Quantities, identification and explanation of route constraints, infrastructure details available en-route etc Preparation of single line diagram, detailed BOQ, cost estimate and detailed project report with approved design of line foundation of OPTCL and also design based on soil investigation report for transmission line project (132kv/220kv/400kv). Details scope of work to be specified during award of work order and work to be executed as per instruction of Engineer In-Charge.

#### **Note:**

- All the bidders shall present their proposed methodology for execution of the work as per specifications and details of the equipment and facilities including soft wares available with them, based on which the owner may issue suitable amendments. A pre bid conference if required shall also be held.
- The Provisional quantities for the scope of work are indicated in relevant Price Schedules of Bid Proposal Sheets. The final quantities for route alignment & detailed survey (quantities in "kms" unit) shall be the route length along the approved route alignment.

The route alignment, detailed survey, including profiling & tower spotting, contouring, soil investigation etc. shall be carried out by the Contractor as per the technical specifications stipulated herein.

- The Contractor must note that the Owner shall not be responsible for loss or damage to properties, trees etc. due to contractor's work during survey. The Contractor shall indemnify the Owner for any loss or damage to properties, trees etc. during the survey work
- The Contractor should note that Owner will not furnish the NRSA satellite imageries or topographical maps prepared by survey of India but will render available assistance that may be required in obtaining these by providing letters of recommendation to the concerned authorities. Further, in case the contractor opts for use of ALTM techniques for detailed survey, he shall be responsible for obtaining necessary clearance/permission as may be required from concerned authorities. The Owner will provide assistance that may be required in obtaining these clearance/permissions by providing letters or recommendations to the concerned authorities
- The Bidders shall give along with their bid clause by clause commentary indicating their confirmation/comments/observations in respect of all clauses of technical specification.
- The work shall be carried out by the contractor using modern surveying techniques. The bidder shall indicate in his offer, the detailed description of the procedure to be deployed. The details of the equipment & facilities including software's for image processing, computer aided tower spotting etc. available with the bidder or his associates shall also be furnished with the bid
- The contractor shall also engage services of a reputed geo-technical consultant or experts from independent educational /research institutions for examining stability aspects of the selected transmission line route /locations in hilly terrain wherever required.
- After carrying out the detailed survey and soil investigations, the contractor shall estimate complete BOQ of the transmission lines and submit the same to the Owner.
- No technical deviations what so ever to certain conditions of the bidding documents permitted by the owner and therefore, the bidders are advised that while making bid proposals and quoting prices these conditions may appropriately be taken into consideration. The bidder shall complete all the schedules and annexures in the bid proposal sheets, technical data sheets specified elsewhere.

**PARTICIPATION IN BID:** -Tenderers are requested to submit their bids ONLINE as per conditions of this bidding document. Any deviation from conditions as specified herein; the Bid will not be accepted. Tenderers are required to furnish the Bids electronically on e-procurement website at by following procedure given below:-

**REGISTRATION:**

- a) log in [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) . Click “Register”, fill the online registration form.
- b) The firm has to get registered for e tendering by paying Registration for an amount of Rs.2360/- in the form of DD in favour of K S E D C Ltd Payable at Bangalore. Or Registration fee can also be paid to KSEDC Ltd through e-payment mode. (By Debit card / Credit card / net banking mode). For any assistance please contact our help desk – 9937140591. The contractors /vendors/bidders/supplier who have already registered in e-tendering site of OPTCL, they need not to pay the registration amount KSEDCL again for this tender.
- c) Send the acknowledgment copy for verification.

d) As soon as the verification is being done the e-tender user id will be enabled

#### **ON LINE REQUEST/ DOWN LOADING OF BID DOCUMENT:**

After viewing Tender Notification in [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL), if bidder intends to participate in tender, he has to use his e-tendering User Id and Password which has been received after registration and acquisition of DSCs (**Digital signature certificate, Class-III**). If any Bidder wants to participate in the tender he will have to follow the instructions given below

- a) Insert the PKI (which consist of your Digital Signature Certificate) in your System. (Note: Make sure that necessary software of PKI be installed in your system).
- b) Click / Double Click to open the Microsoft Internet Explorer (This icon will be located on the Desktop of the computer).
- c) Go to Start > Programs > Internet Explorer. Type [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) in the address bar, to access the Login Screen.
- d) Enter e-tender User Id and Password, click on "Go". Click on "Click here to login" for selecting the Digital Signature Certificate. Select the Certificate and enter DSC Password. Re-enter the e-Procurement User Id Password.
- e) Click "Un Applied" to view / apply for new tenders.
- f) Click on Request icon for online request. After making the request Bidders will receive the Tender Documents which can be checked and downloaded by following the below steps.
- g) Click to view the tender documents which are received by the user. Tender document screen appears.
- h) Click "Click here to download" to download the documents

#### **PAYMENT OF TRANSACTION FEE: -**

Prior to submission of bid, the bidder has to furnish the tender cost, tender processing fee and EMD as specified in the tender notification. Electronic Payment Account: As the tender documents shall be available for purchase only online, Bidders are required to pay the Tender Document fees online using the Online Payments Gateway Service integrated into the e-Procurement System. For the list of available modes of electronic payments that are presently accepted on the Online Payments Gateway Service, please check the link, List of e-Payments accepted Online' on <http://tenderwizard.com//OPTCL>.

#### **IMPORTANT INFORMTION:**

##### **Digital Certificate authentication: -**

The Bids submitted online should be signed electronically with a Class III Digital Certificate to establish the identity of the Bidder submitting the Bid online. The Bidders may obtain Class III Digital Certificates issued by an approved Certifying Authority authorized by the Controller of Certifying Authorities, Government of India.

Bid for a particular tender can be submitted during the ONLINE BID SUBMISSION stage only using the Digital Certificate that is used to encrypt the data. In case, during the process of a particular tender, the bidder loses his Digital Certificate because of any problem (such as misplacement, virus attack, hardware problem, operating system problem, etc.); he may not be able to submit his bid online. Hence, the bidders are advised to keep their Digital Certificates in a safe place under proper security to be used whenever required.

The digital certificate issued to the Authorized User of a Partnership firm / Private Limited Company / Public Limited Company / Joint Venture and used for online bidding will be considered as equivalent to a no-objection certificate / power of attorney to that user.

In case of Partnership Firm, majority of the Partners have to authorize a specific individual through Authority Letter signed by majority of the Partners of the firm.

In case of Private Limited Company, Public Limited Company, the Managing Director / any other Person (having designated authority to authorize a specific individual) has to authorize a specific individual through Authority Letter. Unless the certificate is revoked, it will be assumed to represent adequate authority of the specific individual to bid on behalf of the Organization for online tenders as per Information Technology Act 2000. This Authorized User will be required to obtain a Digital Certificate. The Digital Signature executed through the use

of Digital Certificate of this Authorized User will be binding on the firm. It shall be the responsibility of Management / Partners of the concerned firm to inform the Certifying Authority, if the Authorized User changes, and apply for a fresh digital certificate for the new Authorized User.

**Set up of Bidder's Computer System:**

In order for a Bidder to operate on the e-Procurement System, the Computer System of the Bidder is required to be set up for Operating System, Internet Connectivity, Utilities, Fonts, etc. **For any assistance please contact our help desk – 9937140591**

**Publishing of NIT:**

For the Tenders processed using the e-Procurement System, only a brief Advertisement related to the Tender shall be published on the e-Procurement System. No advertisement shall be published in newspapers regarding tender notice, corrigendum or addendum. The bidders can view the Detailed Notice and the time schedule for all the Tenders processed using the e-Procurement System on the website [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL)

**Key Dates:**

The Bidders are strictly advised to follow the time schedule (Key Dates) of the Tender for their side for tasks and responsibilities to participate in the Tender, as all the stages of each Tender are locked before the start time and date and after the end time and date for the relevant stage of the Tender as set by the concerned Department Official. Hence, once the time schedule for a particular stage is lapsed then that task will be locked and the Tenderers who have not completed the task in time may not be able to participate in the tender. It should be appreciated that sufficient time duration is given for each stage and therefore, it is the responsibility of Tenderers to complete the process well within time rather than waiting for the last day of submission. OPTCL holds no responsibility for the non-submission of bids due to such delay/ negligence of the tenderers.

**Bid submission:**

Bidder should duly upload the documents and fill the bids. The online tender should be submitted before Bid Submission End date.

**Submission of Earnest Money Deposit (EMD): Not Applicable.** However, there shall be a provision for "Bid Security Declaration" with the stipulation that if they withdraw or modify their bids during the validity period, they will be suspended for the time specified in the Tender documents.

**Techno Commercial Bid (Part-I):**

Bidders must positively complete online e-tendering procedure at [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL). They shall have to submit the following documents online in the website. Their complete techno-commercial offer containing detailed description, specification and all commercial terms and conditions. **This document should not contain any price part.** Techno-commercial information in the form of questionnaire and schedules as indicated in techno commercial bid (in excel format).

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

Bidder shall have to submit the price bid documents downloaded from website and uploaded as per instructions therein. **Physical submission of price bid will not be considered.** The price bid of techno-commercially qualified bidder shall be opened online at the notified date at [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) Bidders can view information of date of price bid opening by logging in to website.

**Change in date & time of opening of bids:** -Tender shall be opened on the due date and time as notified in the presence of the tenderer or their authorized representative who may be present. If the due date of opening / submission of tender documents is changed, the same will be uploaded on Portal through corrigendum.

**Corrigendum/Addendum/Pre-bid clarification:**

The Tenderer has to keep track of any changes by viewing the addendum/corrigendum/ Pre-bid clarification issued by the tender Inviting Authority on time-to-time basis on web site/e-Procurement platform. The Department calling for tender shall not be responsible for any claims/problems arising out of this.

## SECTION-II

### INSTRUCTIONS TO BIDDER:

- (a) The bidders who want to submit bid shall have to pay tender cost, tender processing fee for each lot as mentioned in TABLE-I using online Payments Gateway Service integrated into the e-Procurement System. The bidders shall scan the Demand Draft towards BID SECURITY and Tender Cost against each package and upload the same in the prescribed form in .gif or .jpg format in addition to sending the original on or before the scheduled date & time of opening of tender.
- (b) In Techno commercial bid (in excel format) various important techno-commercial terms and conditions are given. It is necessary to furnish all the information as per Questionnaire. The Questionnaire duly filled in and signed has to be submitted along with the Bid.
- (c) The price bid shall include submission of details of prices strictly as per Price Schedule (Schedule of prices and quantity) in standard online format. It may be mentioned that no such information should be furnished in the price bid which may not be in conformity with details furnished in techno-commercial bid. In case of any discrepancy, suitable loading on prices will be considered for which responsibility will rest on the tenderers.
- (d) Further submission of any additional information or document after opening of techno-commercial part of tender, which may affect the financial commitment or technical/commercial eligibility of tenderer, will not be allowed. It is obligatory on the part of the Tenderers to comply with all our commercial terms & conditions.
- (e) The Tenderers shall submit their eligibility and qualification details, techno-commercial bid in the standard formats appended with the Bid documents. The Tenderer shall sign on the statements, documents, certificates, owing responsibility for their correctness/ authenticity. The Tenderer shall attach/upload all the required documents for the specific tender during the bid submission as per the tender notice and bid document.
- (f) The tenderer will be solely responsible for the correctness/genuineness of the downloaded tender documents from the website. If the offer submitted through the downloaded tender documents, which are incomplete or with changed contents, the offer will be summarily rejected.

**ENLISTMENT OF FIRMS:** Application for Enlistment of Firms/ contractors in rate contract for carrying out "Survey, soil testing, preparation of estimate and detailed project report (DPR) for upcoming projects in OPTCL system" shall be received in OPTCL's in e-tender portal, i.e. web site [www.tenderwizard.com/ OPTCL](http://www.tenderwizard.com/OPTCL) as per the time schedule specified in the tender. The contractors shall be enlisted based on their work experience as specified in Minimum Qualifying requirement and shall be intimated in registered post. List of enlisted contractors shall be circulated to all Division / Circle/ Zone office of OPTCL for placing work order as per requirement.

**RULES FOR ENLISTMENT:** Enlistment of contractors shall be done by the O/o the Sr.GM, CPC, OPTCL, Bhubaneswar as per the eligibility of the Firms/Contractors against tender specification and subjected to following terms and condition.

- a) Enlistment of Contractor for carrying out (1) Category-I: survey (2) Category-II: Geo technical soil investigation (3) Category-III: Preparation of estimate and DPR for upcoming projects of OPTCL shall be in force for two (02) years from the date of notification.
- b) The name, address and other particulars of the Contractor/Firm/Company should exactly match with those mentioned in all the Licenses/Registrations /Certificates issued by various authorities. It is Contractor's responsibility to keep all the Licenses/ Registrations /Certificates issued by various authorities in live. Contractor should produce all the renewed Licenses/Registrations/Certificates to the registering authority well before their expiry.

- c) Contractor should be well acquainted with all existing Acts, Rules, Regulations, Orders and Byelaws including all statutory Amendments and Enactments of State or Central Government and other local authorities and any other enactments, notifications and acts that may be passed in future either by the State or the Central Government or local authority and including the following:
- d) Electricity Laws: Indian Electricity Act, 2003, Indian Electricity Rules, 1956 & Electrical Wires, Cables, Appliances and Accessories (Quality Control) Order, 1993.
- e) Contractor shall have to furnish an undertaking to comply with **“Statutory Laws & other regulation”** as annexed to the tender.
- f) The area of operation is any site under the jurisdiction of OPTCL in side state of Odisha.
- g) This enlistment is not transferable and it will not confer any special rights or privileges or Guarantee of work. This enlistment as rate contractor of OPTCL shall cancels all previous enlistment certificates granted earlier to the contractor.
- h) **If it is found at any time that the particulars furnished by the contractor are false, the registration is liable to revocation or cancellation and the Firm shall be debarred from participating in OPTCL tender for 05(Five) years.**
- i) The registering authority reserves the right to cancel or demote or suspend from business or debar from the list without any notice and without assigning any reasons thereof.

**REMOVAL FROM THE APPROVED LIST:** OPTCL on specific reasons/ remarks from Circle/Zonal offices and with the approval of competent authority may remove the name of a contractor from the approved list, if a Contractor:

- Has on more than one occasion failed to execute a contract or has executed it unsatisfactorily (or).
- Fails to abide by the conditions of registration or is found to have given false particulars/information at the time of registration (or)
- Persistently violates any important condition(s) of the contract (or)
- Is proved to be responsible for executing the works with defects in a number of cases (or)
- Is declared or in the process of being declared bankrupt or insolvent, or wound up or dissolved or partitioned (or)
- Persistently violates the labour regulations and rules.
- The registering authority may suspend the business with the empaneled firm.

**OUT RIGHT REJECTION CRITERIA:**

(1) Bid proposals received without **Tender cost, Bid security & Tender processing fee** by the date and time scheduled for opening of bids shall be treated as non-responsive and shall be out rightly rejected.

(2) The bidder should not have any pending litigation or arbitration with OPTCL with regard to any project or related activity. The bidder should certify/declare the same in unequivocal terms by way of an affidavit duly sworn before a magistrate or notary. Bid furnished by the bidder shall not be eligible for consideration if it is not accompanied by the affidavit. Further, the bid/LOA/LOI shall liable for outright rejection /cancellation at any stage if any information contrary to the affidavit/declaration is detected.

**MINIMUM QUALIFYING REQUIREMENT:**

**Category-I: Enlistment in R/C for survey:**

- Work experience: The bidder should be a reputed consultancy firm having experience in conducting preliminary survey, detail survey using GPS, DGPS, Total Stations, long range scanners & Digital theodolites of reasonable accuracies or alternatively using ALTM, (Airborne Laser Terrain Modelling techniques, route alignment for transmission projects (Line & substation) in State/ Central Govt. /PSU transmission utilities. The bidder should have completed minimum 02 Nos similar works in in Govt. /Govt. undertaking/PSU in last 03 (Three) years from the date of opening of bid. Firm has to furnish work completion certificate in support

- of their eligibility for enlistment in rate contract.
- Manpower & T& P: The bidder shall have to furnish (in the enclosed format), the detail list of Engineering/ Finance personnel who will be capable to discharge the responsibilities using modern surveying tools and plant and methodology. The educational qualification & experience of those personnel are to be furnished. Firm should furnish detail list of T&P, plant and machinery required for execution of all works related to survey, soil testing and other works in the scope of rate contract.
- Performance: Contractors from whom Govt. Depts. have off loaded work due to poor performance shall not be eligible to participate in the bid.
- Financial criteria: Firm has to furnish Work related Turn over certificate (for last 3 years) duly signed by Chartered accountant.

**Category-II: Enlistment in R/C for Geo-technical soil investigation**

- Work experience: The bidder should be a reputed consultancy firm having experience in Geotechnical soil investigation for transmission projects (Line & substation) in State/ Central Govt. /PSU transmission utilities. The bidder has to submit minimum 02 years of past experience from the date of opening of bid for similar work in Govt. /Govt. undertaking/PSU.
- Manpower & T& P: The bidder shall have to furnish (in the enclosed format), the detail list of Engineering/ Finance personnel who will discharge the responsibilities. The educational qualification & experience of those personnel are to be furnished. Firm should furnish detail list of T&P, plant and machinery required for execution of all works related to survey, soil testing and other works in the scope of rate contract.
- Performance: Contractors from whom Govt. Depts. have off loaded work due to poor performance shall not be eligible to participate in the bid.
- Financial criteria: Firm has to furnish Work related Turn over certificate (for last 3 years) duly signed by Chartered accountant.

**Category-III: Enlistment in R/C for preparation of Estimate and Detail project report.**

- Work experience: The bidder should be a reputed consultancy firm having experience in feasibility study, design, estimation and Preparation of DPR (Detailed Project Report) incorporating the Techno-Economic Feasibility aspects of the transmission projects in State/ Central Govt. /PSU transmission utilities.
- The bidder has to submit minimum 02 years of past experience from the date of opening of bid for similar work in Govt. /Govt. undertaking/PSU.
- The bidder should have prepared DPRs for at least 02(Two) nos of transmission project for any state transmission /central transmission company in last two years.
- Manpower & T& P: The bidder shall have to furnish (in the enclosed format), the detail list of Engineering/ Finance personnel who will discharge the responsibilities. The educational qualification & experience of those personnel are to be furnished. Firm should furnish detail list of T&P, plant and machinery required for execution of all works related to survey, soil testing and other works in the scope of rate contract.
- Performance: Contractors from whom Govt. Depts. have off loaded work due to poor performance shall not be eligible to participate in the bid.
- Financial criteria: Firm has to furnish Work related Turn over certificate (for last 3 years) duly signed by Chartered accountant.

**DETAILS OF DOCUMENTS TO BE SUBMITTED: -**

Following standard online formats are required to be filled in and self-certified scanned copies of following documents are required to be uploaded on portal as attached with this tender document to participate in the bidding process as detailed below:

- 1) e-payment receipt of Tender cost, tender processing fee.

- 2) Earnest Money (EMD) Bid Security Declaration form in Annexure-I
- 3) Registration certificate of GST.
- 4) IT PAN/EPF registration scan copy.
- 5) Audited Balance Sheet for (FY 2018-19, 2019-20 & 2020-21).
- 6) Turnover Certificates for last three years duly certified by the Chartered Accountant
- 7) DSC (Digital Signature Certificate) detail.
- 8) Registration certificate of Establishment/MOA/AOA/Partnership deed
- 9) Power of Attorney.
- 10) "No litigation with OPTCL", Firm has to furnish affidavit duly notarized
- 11) Tender Acceptance letter.
- 12) List of T&P, plant and machinery.
- 13) Work experience. (Work order/ completion certificate/ Performance certificate)

Note: Tenderer intending to participate in that tender are required to get themselves trained on e- procurement system. The tenderer is required to contact the service provider M/s Karnataka State Electronic Development Corporation Limited may be contacted for all enquires, clarification etc., if any related to e-tendering.

## SECTION-III

### GENERAL TERMS & CONDITIONS OF CONTRACT CONTENTS

<b>Sl. No.</b>	<b>Description</b>
<b>A.</b>	<b>Introduction</b>
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5.0	Contract Documents
6.0	Use of Contract Documents and Information
7.0	Construction of the Contract
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<b>B.</b>	<b>Contract Security and Payments</b>
11.0	Contract Performance Guarantee
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<b>C.</b>	<b>Resolution of Disputes</b>
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**SECTION – GCC**  
**GENERAL TERMS & CONDITIONS OF CONTRACT**

**A. INTRODUCTION**

**1.0 DEFINITION OF TERMS**

1.1 The 'Contract' means the agreement entered into between the owner and the 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 the ORISSA POWER TRANSMISSION CORPORATION Ltd Bhubaneswar and shall include its legal representatives, successors and assigns.

1.3 'Contractor' or 'Manufacturer' shall mean the Bidder whose bid will be accepted by the owner for the 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 Engineer and will include the legal representatives, successors and permitted assigns of such person

1.5 Engineer' shall mean the officer appointed in writing by the owner to act as Engineer from time to time for the purpose of the Contract .

1.6 'Consulting Engineer'/'Consultant' shall mean any firm or person duly appointed as such from time to time by the owner.

1.7 The terms 'Equipment', 'Stores' and 'Materials' shall mean and include equipment, stores and materials to be provided by the Contractor under the Contract.

1.8 '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.

1.9 'Specifications' shall mean the Specifications and Bidding Document forming a part of the Contract and such other schedules and drawings as may be mutually agreed upon.

1.10 '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 the owner or contractor in the performance of the contract.

1.11 The term 'Contract Price' shall mean the 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 works.

1.12 The term 'Equipment Portion' of the contract price shall mean the taxable value of the equipment.

1.13 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.

1.14 'Manufacturer's Works' or 'Contractor's Works', shall mean the place of work used by the manufacturer, the Contractor, their collaborators/associates or Sub-Contractors for the

performance of the Contract.

1.15 'Inspector' shall mean the owner or any person nominated by the owner from time to time, to inspect the equipment; stores or works under the contract and/or the duly authorized representative of the owner.

1.16 'Notice of Award of Contract'/'Letter of Award'/'Telex of Award' shall mean the official notice issued by the owner notifying the contractor that his bid has been accepted.

1.17 'Date of Contract' shall mean the date on which Notice of Award of Contract/Letter of Award has been issued.

1.18 '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.

1.19 'Writing' shall include any manuscript, type written or printed statement, under or over signature and/or seal as the case may be.

1.20 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, judgement, direction etc. is understood to be a function of the Owner/Engineer.

1.21 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 the owner.

1.22 'Start up' shall mean that 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 check out of equipment and supporting subsystem, 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.

1.23 '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.

1.24 '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, unless otherwise specified elsewhere in the Contract.

1.25 'Performance and Guarantee Tests' shall mean all operational checks and tests required to determine and demonstrate capacity, efficiency, and operating characteristics as specified in the Contract Documents.

1.26 The term 'Final Acceptance'/'Taking Over' shall mean the Owner's written acceptance of the works performed under the contract, after successful commissioning/completion of performance and guarantee tests, as specified in the accompanying Technical Specifications or otherwise agreed in the contract.

1.27 'Commercial Operation' shall mean the condition of operation in which the complete equipment covered under the Contract is officially declared by the owner to be available for continuous operation at different loads up to and including rated capacity. Such declaration by the owner, however, shall not relieve or prejudice the Contractor of any of his obligations

under the Contract.

1.28 '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.

1.29 'Latent Defects' shall mean such defects caused by faulty designs, materials or workmanship which cannot be detected during inspection, testing etc. based on the technology available for carrying out such tests.

1.30 'Drawing', 'Plans' shall mean all:

- (a) Drawings furnished by the owner/consultant as a basis of Bid/Proposals.
- (b) Supplementary drawings furnished by the owner/consultant 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 the owner/consultant.
- (d) Drawings furnished by the owner/consultant 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 Engineer/Owner.

1.31 'Codes' shall mean the following including the latest amendments and/or replacements, if any:

- (a) Indian Electricity Act, 1905 and Rules and Regulations made there under.
- (b) Indian Factory Act, 1948 and Rules and Regulations made there under.
- (c) Indian Explosives Act, 1884 and Rules and Regulations made there under.
- (d) Indian Petroleum Act, 1934 and Rules and Regulations made there under.
- (e) ASME Test Codes.
- (f) AIEE Test Codes
- (g) American Society of Materials Testing Codes.
- (h) Standards of the Indian Standards Institution.

Other Internationally approved standards and/or rules and regulations touching the subject matter of the contract.

1.32 Words imparting the singular only shall also include the plural and vice-versa where the context so requires.

1.33 Words imparting 'Person' shall include firms, companies, corporations and associations or bodies of individuals, whether incorporated or not.

1.34 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.

The various Acts and Regulations are normally available for sale from the following addresses:  
(i) Deputy Controller, Publication Department, Government of India, Civil Lines, DELHI-110 006. (ii) Deptt. of Publication, Government of India, Kitab Mahal, Unit No.21, Emporia Building, Baba Kharak Singh Marg, NEW DELHI-110 001. OR With leading authorized Government of India Book -Sellers.

1.35 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 superceded 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 specifications, schedules, notices, correspondences, 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 to Bid including letter forwarding the Bidding Documents, Instructions to Bidders, General Terms and Conditions of Contract and all other documents included under Vol. I.

(b) Specifications of the equipment to be furnished and erected under the contract as brought out in the accompanying Technical Specifications.

(c) Contractor's Bid Proposal and the documents attached there to including the letters of clarifications thereto between the Contractor and the Owner/Consultant prior to the Award of Contract except to the extent of repugnance.

(d) All the materials, literature, data and information of any sort given by the Contractor along with his bid, subject to the approval of the owner/consultant.

(e) Letter of Award and any agreed variations of the conditions of the documents and special terms and conditions of contract, if any.

5.2 In the event of any conflict between the above-mentioned documents the matter shall be referred to the Engineer whose decision shall be considered as final and binding upon the parties.

#### 6.0 USE OF CONTRACT DOCUMENTS AND INFORMATION:

6.1 The contractor shall not, without the owner's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the owner in connection therewith, to any person other than a person employed by the contractor in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for the purpose of such performance.

6.2 The contractor shall not, without the owner's prior written consent, make use of any document or information enumerated in various contract documents except for the purpose of performing the contract.

6.3 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 the owner.

6.4 Any document, other than the contract itself, enumerated in various contract documents shall remain the property of the owner and shall be returned (in all copies) to the owner on completion of the contractor's performance under the contract if so required by the owner.

#### 7.0 CONSTRUCTION OF THE CONTRACT:

7.1 Notwithstanding anything stated elsewhere in the bid documents, the contract to be entered into will be treated as the contract based on rate contract order.

7.2 In case of divisible supply and erection contract, or where the owner hands over his equipment to the contractor for executing, then the contractor shall at the time of taking

delivery of the equipment/dispatch documents be required to execute an Indemnity Bond in favour of the owner in the form acceptable to OPTCL for keeping the equipment in safe custody and to utilize the same exclusively for the purpose of the said contract..

7.3 The contract shall in all respects be construed and governed according to Indian Laws.

7.4 It is clearly understood that the total consideration for the contract(s) has been broken up into various components only for the convenience of payment under the contract(s) and for the measurement of deviations or modifications under the contract(s).

8.0 JURISDICTION OF CONTRACT: The laws applicable to the contract shall be the laws in force in Odisha. The courts of Cuttack/ Bhubaneswar shall have exclusive jurisdiction in all matters arising under this contract.

9.0 MANNER OF EXECUTION OF CONTRACT:

9.1 The owner, after the issue of the Letter of Award to the Contractor, will send one copy of the final agreement to the Contractor for his scrutiny and approval.

9.2 The Agreement, unless otherwise agreed to, shall be signed within 60 days of the acceptance of the Letter of Award, at the office of the owner at Bhubaneswar, on a date and time to be mutually agreed. The contractor shall provide for signing of the contract in six copies, performance guarantee, appropriate power of attorney and other requisite materials. In case the contract is to be signed beyond the stipulated time, the bid guarantee submitted with the proposal will have to be extended accordingly.

9.3 The Agreement will be signed in six originals and the contractor shall be provided with one signed original and the rest will be retained by the owner.

9.4 The contractor shall provide free of cost to the owner all the Engineering data, drawings, and descriptive materials submitted with the bid, to form a part of the contract Immediately after issue of Letter of Award.

9.5 Subsequent to signing of the contract, the contractor at his own cost shall provide the owner with copy of agreement within thirty(30) days after the signing of the contract.

10.0 ENFORCEMENT OF TERMS: 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.

**B. CONTRACTOR SECURITY AND PAYMENTS**

11.0 CONTRACT PERFORMANCE GUARANTEE: The contractor shall furnish an amount of Rs.20,000.00(Rupees Twenty Thousand)only towards Contract Performance Guarantee(s) for the proper fulfilment of the contract in the prescribed form within thirty (30) days of "Notice of Award of Contract". The performance guarantee(s) shall be as per terms prescribed in Section INB, Conditions of Contract Vol-1.

12.0 PAYMENT:

12.1 The payment to the contractor for the performance of the works under the contract will be made by the owner as per the guidelines and conditions specified herein. All payments made during the contract shall be on account payments only. The final payment will be made on completion of all works and on fulfilment by the contractor of all his liabilities under the contract.

12.2 TERMS OF PAYMENT:-The contractor shall present at the end of each month a bill for

the work completed and inspected with due certification by the OPTCL Engineer in Charge.

- (i) 90% of the value of work done shall be paid within a period of one month on presentation of the bills subject to submission and approval of contract performance Guarantee amounting to @5% of Work Order Value.
- (ii) Balance 10% shall be paid against a bank guarantee for similar amount on satisfactory completion of work, valid for two months more than the guarantee period.
- (iii) Amount towards taxes to be deducted as per statutory requirement shall be done on the gross amount payable.

### 12.3 Currency of Payment-

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

13.0 GUARANTEE -The work done by the contractor as per the contract specification should be guaranteed for satisfactory operation and against any defect in materials and workmanship for a period 18 (Eighteen) month from the date of taking over of the line / substation by OPTCL or 12(Twelve) months from the date on which the transmission line/substation has been put to service whichever is earlier. Any defect noticed during this period should be rectified/ replaced by you free of cost to OPTCL on written notice provided such defects are due to bad workmanship or bad materials used. The above Guarantee certificate shall be furnished in triplicate for approval by OPTCL authority.

14.0 PRICE REDUCTION SCHEDULE: If the contractor fails to complete the works under the Scope of work order within the completion schedule specified in the work order or any extension granted thereof, the OPTCL shall recover from the contractor as price reduction a sum of one-half of one percent (0.5%) of the taxable value of the uncompleted portion of work for each calendar week of delay. For this purpose, the date of taking over shall be reckoned as the date of completion. The total price reduction shall not exceed 5% (five percent) of the taxable value of the uncompleted portion of work.

## E. RESOLUTION OF DISPUTES

### 15.0 SETTLEMENT OF DISPUTES:

15.1 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.

15.2 If any dispute or difference of any kind, whatsoever, shall arise between the owner 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 Engineer, 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 the owner and the contractor.

15.3 Save as hereinafter provided, such decision in respect of every matters so referred shall be final and binding upon the parties until the completion of the works and shall forthwith be given effect to by the contractor who shall proceed with the works with all due diligence, whether he or the owner requires arbitration as hereinafter provided or not.

15.4 If after the Engineer has given written notice of his decision to the parties, no claim to arbitration has been communicated to him by either party within thirty(30) days from the receipt of such notice, the said decision shall become final and binding on the parties.

15.5 In the event of the Engineer failing to notify his decision as aforesaid within thirty (30) days after being requested as aforesaid, or in the event of either the owner or the contractor being dissatisfied with any such decision, or within thirty (30) days after the expiry of the first mentioned period of thirty days, as the case may be, either party may require that the matters in dispute be referred to arbitration as hereinafter provided.

## 16.0 ARBITRATION

16.1 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.

16.2 The arbitration shall be conducted by three arbitrators, one each to be nominated by the contractor and the owner and the third to be appointed as an umpire by both the arbitrators in accordance with the Indian Arbitration Act. If either of the parties fails to appoint its arbitrator within sixty (60) days after receipt of a notice from the other party invoking the Arbitration clause, the arbitrator appointed by the party invoking the arbitration clause shall become the sole arbitrator to conduct the arbitration.

16.3 The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modification thereof. The venue of arbitration shall be Bhubaneswar of Orissa state.

16.4 The decision of the majority of the arbitrators shall be final and binding upon the parties. The arbitrators may, from time to time with the consent of all the parties enlarge the time for making the award. In the event of any of the aforesaid arbitrators dying, neglecting, resigning or being unable to act for any reason, it will be lawful for the party concerned to nominate another arbitrator in place of the outgoing arbitrator.

16.5 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 evidence or arguments put before the Engineer for the purpose of obtaining the said decision.

16.6 No decision given by the Engineer in accordance with the foregoing provisions shall disqualify him as being called as a witness or giving evidence before the arbitrators on any matter whatsoever relevant to the dispute or difference referred to the arbitrators as aforesaid.

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

17.0 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. The contractor shall also prepare and submit a detailed account of Owner Issue materials received and utilized by him for reconciliation purpose in a format to be discussed and finalized with the owner before the award of contract.

All other disputes shall come under HIGH COURT OF ORISSA.

**END OF SECTION – GCC**

**SECTION-IV**  
**TECHNICAL SPECIFICATION**

**General Information & Scope of Work:**

- (1) The scope of work covers carrying-out of reconnaissance of the route, preliminary survey, finalization of alignment, detailed survey including leveling, profile plotting, measurement of soil resistivity values, and soil details along the route of the transmission line and corresponding details.
- (2) The scope of work inter-alia shall include the following:
  - a) **Route Alignment using Survey of India maps inter-alia shall include the following:**
    - (i) The tentative alignment of transmission line marked on topo sheet shall be provided by OPTCL. All the topographical details including all Railway lines, rivers, canals roads up to 8 kM on either side of the route of transmission lines shall be indicated to the scale. Name of the Zonal Railway shall be marked on the railway lines. The name of railway stations shall also be indicated in capital letters only. Alignment shall be plotted on the map with north being clearly indicated on each drawing. Latitude and longitude shall also be properly marked. The convenience in handling, the width and length of the drawings shall be restricted to convenient sizes with 30 mm overlaps between the sheets, the matching line shall be clearly shown on these sheets. However, this tentative alignment is based on shortest length of line involved and may have to be modified depending on site constraints. It is essential that the equipment's/ instruments i.e. Total Stations are properly calibrated at the time of commencement of work, so that they represent true values. If the Engineer so desires, the contractor shall arrange for having the instruments tested at an approved laboratory at his cost and the test report shall be submitted to the Engineer. Digitized terrain modeling along the selected route using contour data from topographical maps.
    - (ii) Associated field work.
  - b) **Detailed Survey using Total Work stations, Digital theodolites of reasonable accuracies inter-aliaincluding :**
    - i) The contractor will have to carry out detailed survey of the line for which route map indicating the proposed alignment of the transmission line will be handed over by the OPTCL.
    - ii) Digitized profiling along the selected route along with plan details.
    - iii) Computer aided tower spotting & optimization.
  - c) **Digitized contouring at undulated / hilly tower locations.**
  - d) Preparation of Survey reports with explanation of route constraints (like Forest, Animal/Bird sanctuary, reserve coal belt areas, oil pipe line/underground inflammable pipe lines etc.), infrastructure details available en-route etc.
  - e) Preparation of Survey reports with explanation of route constraints (like Forest, Animal/Bird sanctuary, reserve coal belt areas, oil pipe line/underground inflammable pipe lines etc.), infrastructure details available en-route etc.
  - f) Wherever, the scope of work is only for part of the line for route changes if any necessitated during execution on account of site constraints and done at the instance of OPTCL and where survey data for balance stretches have been provided by the OPTCL, the Contractor may use the satellite imageries/ digitized maps etc. already available with the OPTCL to the extent applicable.
- (3) The Provisional quantities for the scope of work are indicated in relevant Price Schedules of tender specification. The final quantities for route alignment & detailed survey (quantities in "kM" unit) shall be the route length along the approved route alignment. For contouring at undulated/hilly tower locations, the actual quantities to be executed shall be decided by Site Engineer-in-charge during

execution stage and the final quantities shall be as approved by Site Engineer-in-charge. The route alignment, detailed survey, including profiling & tower spotting, contouring, shall be carried out by the Contractor as per the technical specifications stipulated herein.

- (4) The Contractor must note that the OPTCL shall not be responsible for loss or damage to properties, trees etc. due to contractor's work during survey. The Contractor shall indemnify the OPTCL for any loss or damage to properties, trees etc. during the survey work.
- (5) The bidder shall give along with their bid clause by clause commentary indicating their confirmation/ comments/ observation in respect of all clauses of technical specification.
- (6) The work shall be carried out by the contractor using Total Station surveying equipment. The bidder shall indicate in his offer, the detailed description of the procedure to be deployed. The details of the equipment & facilities including software for image processing, computer aided tower spotting etc. available with the bidder or his associates shall also be furnished with the bid.

#### **Requirement of Transmission Line Routing:**

- 1) The alignment of the transmission line shall be most economical from the point of view of construction and maintenance. The contractor shall identify & examine alternative route alignments and suggest to the \*OPTCL\* the optimal route alignment.
- 2) 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, and then keeping in view of the overall economy, the route should be aligned in such a way that cutting of trees is minimum.
- 3) The route should have minimum crossings of Major River, Railway lines, National/State highways, overhead EHV power line and communication lines.
- 4) The number of angle points shall be kept to minimum.
- 5) The distance between the terminal points specified shall be kept shortest possible, consistent with the terrain that is encountered.
- 6) Marshy and low lying areas, river beds and earth slip zones shall be avoided to minimize risk to the foundations.
- 7) It would be preferable to utilize level ground for the alignment.
- 8) Crossing of power lines shall be minimum. Alignment will be kept at a minimum distance of 300 m from power lines to avoid induction problems on the lower voltage lines.
- 9) 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.
- 10) Areas subjected to flooding such as nalah shall be avoided.
- 11) Restricted areas such as civil and military airfield shall be avoided. Care shall also be taken to avoid aircraft landing approaches.
- 12) All alignment should be easily accessible both in dry and rainy seasons to enable maintenance throughout the year.
- 13) Certain areas such as quarry sites, tea, tobacco and saffron fields and rich plantations, gardens & nurseries which will present the \*OPTCL\* problems in acquisition of right of way and way leave clearance during construction and maintenance should be avoided.
- 14) Angle points should be selected such that shifting of the point within 100 m radius is possible at the time of construction of the line.
- 15) The line routing should avoid large habitations, densely populated areas, Forest, Animal/Bird sanctuary, reserve coal belt areas, oil pipe line/underground inflammable pipe lines etc. to the extent possible.
- 16) The areas requiring special foundations and those prone to flooding should be avoided.
- 17) For identification of the most appropriate route, besides making use of information/data/details available/extracted through Survey of India Topographical maps the contractor shall also carryout

reconnaissance/preliminary survey as may be required for verification & collection of additional information /data /details.

- 18) The contractor shall submit his preliminary observations & suggestions along with various information/data /details collected and also processed satellite imagery data, scanned topographical map data. The evaluation of the route shall be conducted by the contractor in consultation with OPTCL representatives and optimal route alignment shall be proposed by the contractor. Digital terrain modeling 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 \*OPTCL\* representative for the proposed route alignment.
- 19) Final digitized route alignment drawing with latest topographical and other details/features including all rivers, railway lines, canals, roads etc. up to 8 kms on both sides of selected route alignment shall be submitted by the contractor for OPTCL's approval along with report containing other information/details as mentioned above.
- 20) Changes in the route alignment, if any, during detail survey, shall be incorporated in the final digitized route alignment drawings.

### **Detailed Survey:**

- (1) The detailed survey shall be carried out using DGPS, Total stations, digital theodolites etc. along the approved route alignment. As an alternative, the contractor may also use ALTM (Air borne Laser Terrain Modeling) techniques of equal or better accuracy for the detailed survey.
- (2) At the starting point of the commencement of route survey, an angle iron spike 65x65.1000 shall be driven firmly into the ground and concrete of size 0.5 Mtr x 0.5 Mtr x 0.5 Mtr volume placed around it to show only 150 mm above ground level. A punch mark on the top section of the angle iron shall be made to indicate location of the surveying instruments. Teak wood pegs 50x50x650 mm shall be driven at prominent positions at intervals of not more than 750 Mtr along the transmission line to be surveyed up to the next angle point. 125 mm wire nails should be fixed on the top of these pegs to show the location of instrument. The pegs shall be driven firmly into the ground to show only 100 mm above ground level. At angle positions stones shall be put up for easy identification. Paint mark in white lead paint shall be put in, above 300 mm squares with a direction indication, on nearby boulders, rocks, or trees along the complete line alignment. At peg position, identification marks giving the peg position, with reference to painting marks, shall be given. The white lead paint mark shall indicate to the individual the direction of alignment from either direction.

### **Soil Resistivity:**

While carrying out detailed survey work, the soil resistivity will have to be measured at convenient points along the route not exceeding 2.5 km. The soil resistivity along the route alignment shall be measured in dry weather by 4 electrode method keeping inter-electrode spacing of 50 Mtr. For calculating soil resistivity formula  $2\pi ar$  (Where  $a = 50$  Mtr,  $r =$  megger reading in ohms and  $\pi = 3.14$  shall be adopted. Megger reading and soil characteristics should also be indicated in soil resistivity results. The soil resistivity values shall be submitted duly marked on the route map and also in the form of statement. The quoted rate shall be inclusive of cost of measurement of soil resistivity values along with proposed and contractor will not be paid separately for this work.

### **Route Marking:**

- a) The route of the transmission line shall be recorded using total station.
- b) The co-ordinates of all the angle points as well as other important crossings, landmarks etc. shall be recorded using total station.
- c) At the starting point of the commencement of route survey the co-ordinates 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 meter 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 MPPTCL markings shall be made and co-ordinates recorded.

### **Profiling:**

- a) The complete profiling for all obligatory crossings of river, railway, power line crossing, along the route shall be carried out using modern surveying equipment viz. total stations, digital theodolite, Reference levels at every 20 meters along the route are to be recorded. R/Ls at other undulations along the route as well as in the route plan and other en-route details viz. crossings, building & structures, 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. Profile shall be prepared for every length of 5 km.
- 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 OPTCL's site-in-charge for review before taking up tower spotting.

### **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 and 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 \*OPTCL\* to the successful bidder after award of contract. Sag template curves, if any required for tower spotting, shall be prepared by the contractor.

### **Tower Spotting:**

While profiling & spotting the towers, the following shall be borne in mind:

- a) **Span:**

The number of consecutive spans between the section points shall not exceed 13 spans or 5 Km in plain terrain and 10 spans or 3 km in hilly terrain. A section point shall comprise tension point with minimum angle of deviation from towers as applicable.

- b) **Extension:**

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. The provisions kept in the design of towers w.r.t. body/leg extension shall be intimated to the contractor by the oPTCL 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 deployed at such positions.

- d) **Road Crossing:**

The road crossing should be preferably at right angles and in any case crossing angle should not be less than 75 degree. The crossing tower should be located outside the road boundaries. It is desired that one tower of the crossing span should be as close as possible to the road to make the best use of extra distance from center of nearest tower to road edge should be at least equal to 1 ½ (one and half) times height of tower.

- 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 B60/E60 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 meters 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. Separate Profile for the Crossing as per Railway Requirement will be Submitted by the contractor.

f) **River Crossings:**

In case of major river crossing, towers shall be of suspension type along with anchor towers of B60/E60 type tower on either side of the main river crossing. Alternately on the basis of economics and / or site/ execution constraints crossing of rivers using extended angle towers also shall be considered. For navigable rivers, clearance required by navigation authority shall be provided. For non-navigable river, clearance shall be reckoned with respect to highest flood level (HFL). The minimum clearance of power conductor over the highest flood level in case of non-navigable rivers shall be as under:-

Highest System voltage (KV)	Minimum clearance above highest flood level (Mtr)
145	4.30
245	5.10

g) **Power line Crossings:**

Where the line is to cross over another line of the same voltage or lower voltage, 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 as amended up-to-date. In order to reduce the height of the crossing towers, it may be advantageous to remove the ground-wire of the line to be crossed (if this is possible and permitted by the OPTCL of the line to be crossed).

Minimum clearance in meters between lines when crossing each other:

S No.	Highest System Voltage	72.5-145KV	245KV	420KV	800KV
1.	145 KV	3.05	4.58	5.49	7.94
2.	245 kV	4.58	4.58	5.49	7.94
3.	420KV	5.49	5.49	5.49	7.94
4.	800KV	7.94	7.94	7.94	7.94

For power line crossings of voltage level of 132 kV and above shall be provided on either side of tangent type tower.

h) **Telecommunication Line Crossings:**

The angle of crossing shall be as near to 90 degree 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 degree, the matter will be referred to the authority in charge of the telecommunication System. On a request from the Contractor, the permission of the telecommunication authority may be obtained by the OPTCL.

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) **Aerodrome / radar stations/ military installations:**

The complete data regarding these installations should be obtained from concerned Aerodrome / Communication / Military / Police Authorities. The alignment of the line near such installations should be finalized in accordance with the rules / regulations in vogue in

respect of such installations. No objection certificate should be obtained from the concerned authorities for laying the line in the proposed alignment.

j) Details En-route:

All topographical details, permanent features, such as trees, building etc. on either side of the alignment shall be detailed on the profile plan.

(3) 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 as amended up to date.

The Contractor shall also identify the forest/non forest areas involved.

- a) A statement of forest areas with survey/compartments Nos. (all type of forest RF/PF/Acquired forest/Revenue forest/Private forest/Forest as per dictionary meaning of forest etc.)
- b) A statement of non-forest areas with survey/compartments nos.
- c) Marking of forest areas with category on topo sheets showing complete line route, boundaries of various forest divisions and their areas involved.
- d) Village forest maps of affected line and affected forest area and marking of the same.
- e) Forest division map showing line and affected forest area.

**(4) Preliminary Schedule:**

The profile sheets showing the locations of the towers together with preliminary schedules 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 OPTCL's site-in-charge.

**(5) GPS Coordinate:**

The co-ordinates of all the tower locations shall also be recorded. The position of all tower locations shall be marked in the final digitized route alignment drawing with relative distances from any permanent bench mark in the area.

**(6) Contouring at hilly/undulated locations:**

- a) The levels up or down of each pit center with respect to center of tower location shall be recorded at intervals of 2m using total stations/digital theodolite and digitized contour plans shall be made. Based on the digitized elevation plans, the quantities of benching shall be optimized using suitable computer-aided techniques/software. Required tower and foundation details, cost data for comparative evaluation for benching shall be provided by the OPTCL to the Contractor during execution stage.
- b) The changes desired by the OPTCL in the preliminary tower schedule or as may be 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 MPPTCL. 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, crossings & other details etc.

**(7) Survey Methodology & Precision:**

- a) All elevations shall be referenced to benchmarks established by the survey of India. Survey operations shall begin and end at benchmarks approved by the MPPTCL.
- b) During the leveling of the profile, check surveys will be effected at intervals not exceeding 50kms. 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 3<sup>rd</sup> order surveys  $e \leq 24k$  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 leveling shall be done by two independent leveling 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<sup>rd</sup> 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.

**(8) Survey Report:**

- a) Complete BOQ of the transmission lines and the technical specifications shall be provided by the OPTCL to the Contractor during execution stage.
- b) Each angle point locations shall be shown in GPS coordinates and also with detailed sketches showing existing close by permanent land marks 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 land marks 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 en-route, identification and explanation of route constraints, etc shall also be furnished in the Survey report and shall inter-alia include the following 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.
- d) 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.
- e) Suggestions regarding the number of convenient zones (line segments / portions) in which the entire alignment can be divided keeping in view the convenience of corporation are to be given.
- f) Suggestions regarding location for setting up stores during line construction in consultation with OPTCL's representative shall also be provided by the contractor.
- g) 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.
- h) Availability of labour of various categories and contractors of civil works shall also be reported.
- i) 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, Electricity Boards and Zonal railways, Divisional Forest Authorities etc.
- j) All the requisite data for processing the case for statutory clearances such as PTCC, Forest and Railway shall be provided along with the report.
- k) Six copies of survey reports shall be furnished by the contractor to the OPTCL.

## **GEO TECHNICAL INVESTION AND SOIL TESTING**

### **Codes and Standards for Geotechnical Investigations.**

a) The Geo-technical investigations and report shall conform to all standards specifications and IS codes of practice (shall be the latest editions including all applicable official amendments and revision). In case of conflict between the present specifications and those referred to herein, the former shall prevail. Internationally accepted standards which ensure equal or higher performance than those specified shall also be accepted.

### **Field investigation for soils.**

Detailed soil investigation and tests like bores, auger boring, shell and auger boring, SPT, Vane shear test, Dynamic cone penetration test, etc and other test not specifically mentioned and report of which are required for designing tower foundations shall be carried out by the contractor as per the relevant IS codes in force and detailed report shall be submitted to the owner for approval and records.

### **Essential Requirements**

- a) Depending on the types of substrata encountered, appropriate laboratory tests shall be conducted on soil and rock samples collected in the field. Laboratory tests shall be scheduled and performed by qualified and experienced personnel who are thoroughly conversant with the work. Tests indicated in the schedule of items shall be performed on soil, water and rock samples as per relevant IS codes. One copy of all laboratory test data records shall be submitted to owner progressively every week. Laboratory tests shall be carried out concurrently with the field investigations as initial laboratory tests results could be useful in planning the later stages of field work. A schedule of laboratory tests shall be established by Contractor to the satisfaction of the Owner within one week of completion of the first borehole.
- b) Laboratory tests shall be conducted using approved apparatus complying with the requirements and specification of Indian Standards or other approved standards for this type of work. It shall be checked that the apparatus are in good working conditions before starting the laboratory tests. Calibration of all the instruments and their accessories shall be done carefully and precisely at an approved laboratory.
- c) All samples, whether undisturbed or disturbed shall be extracted, prepared and examined by competent personnel properly trained and experienced in soil sampling, examination, testing and in using the apparatus in conformance with the specified standards.
- d) Undisturbed soil samples retained in liners or seamless tube samplers shall be removed, without causing any disturbance to the samples, using suitably designed extruders just prior to actual testing. If the extruder is horizontal, proper support shall be provided to prevent the sample from breaking. For screw tube extruders, the pushing head shall be free from the screw shaft so that no torque is applied to the soil sample tube shall be cut by means of a high speed hacksaw to proper test length and placed over the mould before pushing the sample into it with a suitable piston.
- e) While extracting a sample from a liner or tube, care shall be taken to assure that its direction of movement is the same as that during sampling to avoid stress reversal.

### **Geotechnical Investigation Report**

#### **a) General**

- i). Contractor shall submit a formal report containing geological information of the region, procedures adopted for geotechnical investigation, field observation, summarized test data, conclusions and recommendations. The report shall also include detailed bore logs, subsoil sections, field test results, laboratory observations and tests results both in tabular as well as graphical form practical and theoretical considerations for the interpretation of test results, supporting calculations for the conclusions drawn etc. initially, Contractor shall submit three copies of the report in draft form for Owner's review.
- ii). Contractor's Geotechnical engineer shall visit Owner's Corporate Office for a detailed review based on Owner's comments in order to discuss the nature of modifications, if any, to be done in the draft report. Contractor shall incorporate in the report the agreed modifications and resubmit the revised draft report for approval. Ten copies of the detailed final approved report shall be submitted to Owner together with one set of reproducible of the graphs, tables etc.

iii). The detailed final report based on field observations, in – situ and laboratory tests shall encompass theoretical as well as practical considerations for foundations for different types of structures.

**b) Data to be furnished:**

The report shall also include the following:

- i). A plot plan/location plan showing the locations and reduced levels of all field test e.g. boreholes trial pits etc. properly drawn to scale and dimensioned with reference to the established grid lines.
- ii). A true cross section of all individual boreholes and test pits with reduced levels and co-ordinates showing the classification and thickness of individual stratum, position of ground water table, various in – situ tests conducted, samples collected at different depths and the rock stratum, if encountered.
- iii). Geological information of the area including geomorphology, geological structure, lithology, stratigraphy and tectonics, core recovery and rock quality designation (RQD) etc.
- iv). Observations and data regarding change of course of rivers, velocity, scour depths, silt factor etc., and history of flood details for mid-stream and river bank locations.
- v). Past observations and historical data, if available, for the area or for other areas with similar soil profile, or with similar structures in the surrounding areas.
- vi). Results of all laboratory test summarized for each sample, for each layer along with all the relevant charts, tables, graphs, figures, supporting calculations, conclusions and photographs of representative rock cores.

**c) Recommendations**

Recommendations shall be provided for each tower location duly considering soil type and tower spotting data. The recommendations shall provide all design parameters and considerations required for proper selection, dimensioning and future performance of tower foundations and the following:

- i). The subsurface material must provide safe bearing capacity and uplift resistance by incorporating appropriate safety factors thereby avoiding rupture under ultimate loads.
- ii). Movement of the foundation, including short and long term components under transient and permanent loading, shall be strictly controlled with regard to settlement, uplift, lateral translation and rotation.

**Rates and Measurements**

**a) Rates**

The contractor's quoted rate shall be inclusive of making observations, establishing the ground level and co-ordinates at the location of each borehole, test pit etc. No extra payments shall be made for conducting Standard Penetration Test, collecting, packing, transporting of all samples and cores recording and submittal of results on approved formats.

**Specific Requirements for Geotechnical Investigation at River Crossings.**

a) The entire soil investigation work at river crossing locations (if required) shall be carried out in accordance with the relevant parts of the specifications for geotechnical investigation modified to the extent given below.

**b) Requirements.**

- i). Boreholes shall be executed to specified depth of 40m. If refusal strata is reached (i.e. SPT-N value is greater than 100 continuously for 5m depth) with characteristics of rock the borehole may be terminated at shallower depth i.e. at 5m in refusal strata, with prior approval of the Owner.
- ii). Laboratory testing shall be conducted on all soil samples to determine grain size distribution, liquid limit and plastic limit of the different soil strata encountered.
- iii). Geotechnical Report must furnish the following:
  - Geotechnical investigation schemes.
  - Bore-logs indicating soil stratification, with IS classification, sampling details and SPT 'N' values.
  - Soil cross-sections along various boreholes in two orthogonal directions indicating soil stratification based on field and laboratory tests.

- Grain size distribution curves.
- IS classification of soils.
- Shear tests (UU) to be done on saturated soil samples
- Bearing capacity of soil at different levels.
- Scouring depth of river.
- Highest flood level (H.F.L.).
- Maximum discharge, velocity etc. (from authenticated source such as CWC or appropriate State authorities).
- Recommendations regarding type of foundation to be adopted at the location.

c) A check list for reporting results of river crossings locations details, detailed soil investigation and river values for river crossing locations shall be furnished to the owner.

**Special Terms and conditions for Geotechnical Investigation in the River bed.**

a) Contractor is required to mobilize a suitable arrangement (floating pontoon, plant, equipment etc.) to carry out geotechnical investigation work in creek/river locations identified by the Owner.

b) In the event of storm or stoppage of work etc., Contractor shall not be paid extra for mobilization/remobilization of floating pontoon, plant equipment etc.

c) Contractor shall fully satisfy himself about the conditions of creek/river (depth of water, wave currents, wind conditions etc.) prevailing in the area of proposed investigation and plan the necessary tools and plant to be deployed before quoting. Any claim resulting from lack of data collection in this respect shall not be entertained.

d) Contractor shall make his own arrangements for locating the coordinates and position of boreholes in creek/river with respect to two grid-lines indicated by Purchaser.

e) Boring in creek or river shall be payable only below the bed level and no payment shall be made for lowering the casing in water.

f) Contractor shall arrange for necessary transportation on water (e.g. motor boat) to facilitate the supervision of work by officials of Purchaser at its own cost.

g) Full details of the construction plant, proposed working method for boring and sampling in water shall be submitted along with the Tender.

**STATUTORY REGULATIONS AND STANDARDS**

- Contractor is required to follow statutory regulations stipulated in Electricity (Supply) Act 1948, Indian Electricity Rules, Indian Electricity Act 2003 and other local rules & regulations.
- The codes and standards referred to in these specifications shall govern. In case of a conflict between such codes/standards and these specifications, the provisions of the specifications shall prevail. Such codes, standards referred to shall mean latest revisions, amendments, changes adopted and published by relevant agencies.
- Other Internationally acceptable standards which ensure equivalent or better performance than those specified shall also be acceptable.

**PREPARATION OF DPR (DETAILED PROJECT REPORT)  
INCORPORATING THE TECHNO-ECONOMIC FEASIBILITY ASPECTS  
OF THE TRANSMISSION PROJECTS**

- (1) Preparation of Tower schedule, preparation of Layout plan, elevation & preliminary design of the line foundation to determine the detailed Bill of Quantity for transmission line, preparation of SLD (single line diagram), preliminary design of substation to determine Bill of quantity.
- (2) Preparation of estimated cost of the Transmission line and substation projects from the Bill of Quantity and approved cost data to be provided by OPTCL. Determination resource planning for the project in order to minimize the Interest during construction.
- (3) Analysis of system study report, (to be provided by OPTCL) to determine the benefit of the project, conducting with and without analysis. Conduct cost and benefits analysis and viability study of the project.
- (4) Preparation of Detailed Project Program for substation and line projects, with PERT chart for each activity considering the completion time of the project. Determination of Critical activities. Identification of potential risk and huddles in implementation of the projects.
- (5) Preparation of DPR (Detailed Project Report) incorporating the Techno-Economic Feasibility aspects of the transmission projects, containing following parameters in a justifiable manner to be prepared in accordance with the prevailing norms of Rural Electrification Corporation Ltd. [REC] as well as Power Finance Corporation Ltd. [PFC] sample copies to be provided by OPTCL.
  - [a] Synopsis,
  - [b] Introduction,
  - [c] Power scenario of the State,
  - [d] Existing supply system,
  - [e] Need of the Project,
  - [f] Scope of new proposal,
  - [g] Procurement procedure,
  - [h] Status of clearances, to be provided by OPTCL.
  - [i] Source of funding,
  - [j] Present status of work, , to be provided by OPTCL.
  - [k] Cost of implementation,
  - [l] Certificate,
  - [m] Phasing of expenditure,
  - [n] Benefits,
  - [o] Least cost analysis,
  - [p] Constraints,
  - [q] Cost estimate,
  - [r] System study analysis,
  - [s] Cost benefit analysis,
  - [t] Formats,
  - [u] Project implementation schedule in shape of a bar chart,
  - [v] Drawings to be appended –
    - [1] Political map of concerned district,
    - [2] Power map of concerned district indicating 33 KV system,
    - [3] Schematic diagram of sub-station [in case of project involving sub-station],
    - [4] Map of Orissa showing transmission system.
  - The draft copy of DPRs [both for REC & PFC] are to be submitted within one month after the order is placed.
  - Ten final copies of DPRs [i.e., five copies each for REC and PFC] are required to be delivered in complete shape in original, as well as the soft copy of the same, within five days of approval of the draft copy.
  - Draft report(Hard copy – 03 sets + soft copy in CD media) & Final report(Hard copy – 03 sets + soft copy in CD media) are to be submitted for acceptance and approval.

- Minimum qualifying criteria for bidders- The consultancy firm shall have to submit the detail list of Engineering/ Finance personnel who will discharge the responsibilities in the enclosed format.
- **Documents to be treated as confidential.**

The Firm shall treat the all the documents as private and confidential and these shall not be reproduced without written authorization from the OPTCL.

**ANNEXURE-I**  
**TENDER/CONDITIONS ACCEPTANCE LETTER**

To,

The Senior General Manager, CPC  
OPTCL, Bhubaneswar

Sub.:- Acceptance of Terms & Conditions of Tender.

Ref.:- e-tender Notice No. CPC-30/2021-22

(Tender specification No Sr.G.M-CPC-e-Tender-Survey, soil testing & DPR R/C-30/2021-22)

NAME OF WORK: - Enlistment of Firms/ contractors in rate contract for carrying out (1) Category-I: Survey (2) Category-II: Geo technical soil investigation (3) Category-III: Preparation of detail project report for upcoming project of OPTCL, as per tender specification.

Dear Sir,

1. I/We have downloaded/obtained the tender document(s) for the above mentioned 'Tender' from the website(s) namely:- [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL).
2. I/We hereby certify that I/We have read all terms and conditions of the tender documents (including all documents like annexure, schedules(s), etc.), which form part of the Contract Agreement and I/We shall abide hereby the all the terms & conditions and clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration, while submitting this acceptance letter.
4. I/We hereby unconditionally accept all the tender conditions of above mentioned tender document(s)/corrigendum(s) in totality/entirely.
5. In case any provisions of this tender are found violated, your department/organization shall be at liberty to reject this tender/bid including the forfeiture of the full earnest money deposit absolutely and we shall not have any claim/right against dept. in satisfaction of this condition.

Yours faithfully

(Signature of the Bidder, with Official Seal)

**ANNEXURE - IA**  
**DECLARATION FORM**

**To**

The Senior General Manager (CPC)  
OPTCL Head Qrs. BBSR, 751022

Sub: - Tender Specification No-\_\_\_\_\_

Sir,

1. Having examined the above specification together with terms & conditions referred to therein \* I/We the undersigned hereby offer to supply the materials/equipment covered therein complete in all respects as per the specification and General conditions, at the rates, entered in the attached contract schedule of prices in the Tender.
2. \* I/We hereby undertake to have the materials/equipment delivered within the time specified in the Tender.
3. \* I/We hereby guarantee the technical particulars given in the Tender supported with necessary reports from concerned authorities.
4. \* I/We certify to have submitted the bid electronically by remitting \*cash/money order/D.D./ remitting the cost of tender, herewith and this has been acknowledged by your letter/ money receipt No. Dated,
5. In the event of Tender, being decided in \*my/our favour, \* I/We agree to furnish the Composite B.G. in the manner, acceptable to ORISSA POWER TRANSMISSION CORPORATION LTD., and for the sum as applicable to \*me/us as per clause-19 of section-II of this specification within 15 days of issue of letter of intent/purchase order failing which \*I/We clearly understand that the said letter of Intent/Purchase order will be liable to be withdrawn by the purchaser.

**Bid Security Declaration**

\*I/We further declare that, we will not modify/withdraw the bid after opening of techno-commercial bid(i.e. part-I bid) during its validity period and in such an event we agree that OPTCL would be free to debar us from participating in the tenders floated by OPTCL for a period of three years .

Signed this \_\_\_\_\_ day of \_\_\_\_\_ 2021  
Yours faithfully

Signature of the Bidder with seal of the company

[This form should be dully filled up by the Bidder and uploaded at the time of submission of tender.]

\* (Strikeout whichever is not applicable)

**ANNEXURE-II**

**WORK COMPLETION SCHEDULE**

S no.	Description of work	Period in days from the effective date
<b>Category-I (Survey)</b>		
1	Route alignment	
2	Detailed survey	
3	Tower spotting	
4	Submission of preliminary survey report for review	
5	Submission of Final survey report for approval	
	TOTAL	
<b>Category-II (Geo technical investigation)</b>		
1	Geo technical investigation and sample collection from project site	
2	Testing of samples at Govt./Govt. accredited Laboratory	
3	Submission of Soil test/Geo-technical investigation report	
	TOTAL	
<b>Category-III (Preparation of detail project report)</b>		
1	Preparation of bill of material, estimate based on survey report and geo-technical investigation.	
2	Preparation of detail project report (DPR).	
3	Submission of Preliminary DPR for review	
4	Submission of Final DPR for approval	
	TOTAL	

DATE :  
PLACE :

Signature:

Name:



**ANNEXURE-III**  
**ABSTRACT OF TERMS AND CONDITION**

<b>S.N.</b>	<b>Particulars</b>	<b>To be complied by the Firm</b>
1	Name and address of tenderer.	
2	Communication	Phone (O)Phone (R)Mobile FAX No.
3	Whether you are State/Central. Undertaking / Unit with 100% Government share. (Yes/No) If yes whether documentary evidence in support of the above has been enclosed. (In absence of documentary evidence your claim to be State/Central Govt. Undertaking shall be ignored).	
4	What is the validity period of your offer (the offer should be valid for a minimum period of 180 days.)	
5	Whether the required Earnest Money has been furnished by you (Yes/No). If yes, In which form. Amount of Earnest Money furnished.	
6	Whether agreeable to Company's penalty clause;(Yes/No)	
7	Whether agreeable to payment clause (Yes/No)	
8	Are you agreeable to payment procedure defined in the tender (Yes/No)	
10	Whether agreeable to the completion period offered (Yes/No)	
11	Whether agreeable to furnish security deposit in the form as indicated in the tender (Yes/No)	
12	Whether agreeable to FIRM prices for survey work (Yes/No)	
13	Have you attached Income-Tax clearance certificate for the last three years (Yes/No).	
14	Whether a list of orders executed by you enclosed with full particulars of nature of work done in Techno commercial bid (excel format) (Yes/No)	
15	Whether certificate of competent authority as a proof ofhaving successfully completed orders has been furnished (Yes/No).	

16	Have you furnished photo copy of the Registration number of GST allotted to you in respect of the survey works?	
17	Whether details of technical manpower of head office & field organization furnished (Yes/No)	
18	Have you furnished the power of attorney in respect of the person signing the tender on behalf of tender	
19	(i) Whether your firm is partnership firm (Yes/No) (ii) If so, indicate the name(s), complete address and designation of all (iii)	
20	Whether profit and loss account and audited financial statements of accounts (by Chartered Accountant) for the last 2 years have been furnished by you (Yes/No)	
21	Whether you agree to clause for arranging equipment, T&P and vehicles (Yes/No)	
22	Whether check-list has been enclosed (Yes/No).	

DATE :  
PLACE:

Signature:  
Name:  
Seal of the:

**NOTE:**

- (i) The tenderer may use above questionnaire sheets in original for furnishing reply along with his offer. However, if separate sheets are used for this questionnaire it may please be ensured that the serial order and language of questions is maintained.
- (ii) The tenderer shall necessarily depute the authorized representative who should be present on due date and time of opening of tender. This representative should be authorized signatory of tenderer and should furnish reply on tenderer firm's letter head in case of clarification, if any, sought on the offer after tender opening, if requested. The offer shall be rejected in case the aforesaid instructions are not complied.

**ANNEXURE- IV(A)**

**LIST OF PAST WORK EXPERIENCE**  
**(Works executed in last 03(Three) Years.**

Sl No	Work order No & Date	Work awarded by	Detail description of work	Date of completion of work
1				
2				
3				
4				
5				

**ANNEXURE- IV(B)**

**LIST OF WORK UNDER EXECUTION**

Sl No	Work order No & Date	Work awarded by	Detail description of work	Schedule Date of completion of work
1				
2				
3				
4				
5				

**ANNEXURE-V**

**LIST OF TOOLS & PLANTS AVAILABLE WITH THE TENDERER**

Under this schedule, list of tools and plants required for execution of survey work available with the Contractor should be indicated.

SL. No.	List of tools and plants & vehicles with quantity	Quantity	Date of calibration
1			
2			
3			
4			
5			
6			
7			

**ANNEXURE-VI**

**DETAILS OF ORGANIZATION SET UP**

Under this schedule, strength of technical manpower available with the bidder with their qualification and experience shall be indicated both in respect of headquarter and filed organization.

Sl No	Name of the Person	Qualification	Work experience in Years
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

**ANNEXURE-VII**  
**CHECK-LIST**

<b>S.No.</b>	<b>Item</b>	<b>Reference</b>	<b>Declaration (strike-out whichever is not applicable)</b>
1	Earnest Money Enclosed	e-payment	Yes / No
2	Tender processing fee	e-payment	Yes / No
3	Acceptance of terms & conditions of tender	Annexure-I	Yes / No
4	Work Completion schedule	Annexure-II	Yes / No
5	Abstract of terms and condition.	Annexure-III	Yes / No
6	Tenderer's work experience		
	(a) List of works executed in last 03(Three) years.	Annexure-IV(A)	Yes / No
	(b)List of works under execution	Annexure-IV(B)	Yes / No
7	List of Tools & plants	Annexure-V	Yes / No
8	Details of Organization Set-up	Annexure-VI	Yes / No