

ASSAM ELECTRICITY GRID CORPORATION LIMITED

Regd. Office: 1st Floor, Bijulee Bhawan, Paltan Bazar, Guwahati-781001

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TENDER DOCUMENT

NAME OF WORK: Feasibility study, Survey & Consultation work for relocation of towers of Loc. No. 22-23 of 132kV Gauripur-Bilasipara transmission line and Loc. No. 187 of 132kV Gauripur-Gossaigaon transmission line of AEGCL.

NIT No: AEGCL/DGM/BONG/T&TC/T-1/2022/111; Dated: 01.02.2023

***Deputy General Manager
Bongaigaon T&T Circle
AEGCL, Dhaligaon***

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Short Tender Notice

No. **AEGCL/DGM/BONG/T&TC/T-1/2022/111**

Dtd: **01.02.2023**

On behalf of the Managing Director, AEGCL, the Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon, Chirang-783385 invites short sealed quotations in prescribed format from experienced contractor(s)/firm(s) having experience in survey works for execution of the following works of AEGCL.

Invitee: The Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon, Chirang-783385

Name of Work: **Feasibility study, Survey & Consultation work for relocation of towers of Loc. No. 22-23 of 132kV Gauripur-Bilasipara transmission line and Loc. No. 187 of 132kV Gauripur-Gossaigaon transmission line of AEGCL.**

Scheme: Contingency Reserve Fund for FY2022-23

Duration of Completion: Submission shall be within 30 days from date of issue of the work order.

Tender Fee (Non-Refundable): ₹500.00 (Rupees Five Hundred) only.

Earnest Money Deposit (EMD): ₹5,000.00 (Rupees Five Thousand) only.

Address: The Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon, Chirang-783385

Issue of Tender Paper/Tender Start Date: On all working days from **02.02.2023**

Receipt of Tender Paper /Tender end Date: Till 14: 00 hours of **10.02.2023**

Tender opening Date: 12:00 hours of **14.02.2023**

In case the date of receiving of tenders happen to be holiday the next working day will be treated as receiving/ opening date of tender at the same time and place.

The undersigned reserves the right to reject the tender (partly or in whole) without assigning any reason thereof and does not bind himself to accept the lowest tender.

Sd/-
Deputy General Manager
Bongaigaon T&T Circle
AEGCL, Dhaligaon

Scope of Work

The brief description of scope covered under this Bidding Document is furnished below:

- a) Route survey for the locations of transmission lines at
 - Loc. No. 22-23 of 132kV Gauripur-Bilasipara TL
 - Loc. No. 187 of 132kV Gauripur-Gossaigaon TL
- b) Preparation of revised routes, plan and tower schedule for relocation of the towers at the specified locations.
- c) The different tasks need to be carried out in the scope of work are as laid out in the attached – schedule of work in Chapter V.

Chapter-III

Instruction for Bidders and General Terms and Conditions

1. Sealed bids in prescribed format are to be submitted with Name of the Work, Tender Reference No./Short Tender Ref No. and Name of the bidder mentioned on the sealed envelopes containing the bids.
2. The tender shall be submitted in two separate parts, each in separate sealed covers super scribed as follows.
 - (a) Part I – Technical & Commercial bid.
 - (b) Part II – Price bid.
3. Tender should be written either in ink or typed. No tender filled in otherwise shall be considered.
4. Every tender must be accompanied with Earnest Money amounting to ₹5,000/- (Rupees Five Thousand) only in the form of A/C payee Demand draft/ Bankers Cheque pledged in favour of the DGM, Bongaigaon T&T Circle, AEGCL, Dhaligaon-783385, and Payable at Dhaligaon. Tenders without EMD / EMD of lesser amount shall be rejected outright.
5. The cost of the tender documents is ₹500.00 (Rupees Five Hundred) only in the form of Banker's Check /Demand Draft in favour of the Managing Director, Assam Electricity Grid Corporation Limited, Guwahati-781001 and to be submitted along with the tender in 'Part I – Technical & Commercial bid'.
6. The rates against item(s) as detailed in the Schedule of Work (Chapter-V) are to be quoted as per the given schedules and shall be submitted along with the bid in "Part II – Price bid."
7. Every tender should quote rate of all items clearly both in figure and word. Taxes should be indicated separately in given columns.
8. The tenders should reach/ be submitted in the office of the Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon-783385 **on or before 14:00 hours on 10.02.2023**
9. The Part-I (Technical & Commercial bid) of the tender will be **opened at 12:00 hours on 14.02.2023** in the office of the Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon-783385, in presence of the authorized representatives who desire to be present.
10. The Part-II (Price bid) of the bidders whose bids are shortlisted in the "Technical Evaluation" of Part-I (Technical & Commercial bid) shall be opened separately.
11. Tenders shall preferably be submitted in person or by registered post with AD. Tenders received late due to delay in postal/courier service/ late due to any other reason shall not be considered. The tenders received after due date and time shall be returned unopened by post.
 - (a) Telegraphic tenders / tenders sent by means of FAX shall not be considered
 - (b) If for any unforeseen reasons the date of opening of bid turns into a holiday, the tenders shall be opened on the next working day at the specified time
12. The tender shall be accompanied with the registration certificate / GST/ Income tax certificate etc. of the contractor/ firm etc. participating as the bidder.
13. The contractor must have registration with the concerned department of Government of Assam/Govt. of India.
14. The Contractor/Firm should produce work experience/completion certificate in the name of the Contractor/Firm

- of at least 1(one) complete work relevant to the tendered work, done within last 5 years.
15. All pages of the submitted bid by an intending bidder must contain seal and signature of the bidder.
 16. The Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon reserves the right to reject any or all the tenders without assigning any reason thereof and further reserves the right to split up the supply order/ work order in favour of more than one contractor.
 17. The works vide the work order issued to the successful bidder must not be sublet.
 18. No labour below 18 years should be engaged and contractor should have labour license from competent authority.
 19. The tender shall have to be submitted in the prescribed form only.
 20. The tender shall be completed in all respect. Incomplete tender will not be considered and will be rejected.
 21. The contractor will be responsible for safety of his materials.
 22. Cost for construction of temporary building for storage of materials etc. house for contractor and staff should bear by the contractor. No rent will be paid by the AEGCL.

23. ELIGIBILITY CRITERIA:

(i) EXPERIENCE

Reputed and financially sound engineering firms/contractors having experience of successfully executing similar nature of work during the last 5 years. (Submitted with supporting documents).

Documentary Evidence of Experience in works of a similar nature and volume for each such work in the last five years, and/or details of works presently under way or contractually committed and their respective clients.

(a) Three similar works of atleast ₹70,000.00 each.

OR

(b) Two similar works of atleast ₹90,000.00 each.

OR

(c) One similar work of atleast ₹1,80,000.00

(ii) CAPABILITY

- (a) Each bid shall be accompanied by a statement by the bidder declaring that he/she/it is a bona-fide engineering contractor and has in possession adequate equipment, qualified personnel to fill positions required for execution of the work.
- (b) The Bidder will supply information of the key personnel, design & engineering staff, support staff, field staff etc. proposed for the work along with details of their experience in similar nature of work.
- (c) The Bidder should also substantiate availability (either owned or leased) of the tools, tackles, spare parts etc. for carrying out the works.
- (d) Bidder will require to submit along with the bid the audited balance sheets, IT return and other legal financial statements acceptable to AEGCL, for the last 3 (three) years to demonstrate the current soundness of the Bidders financial position and its prospective long-term profitability. As a minimum, an Applicant's net worth calculated as the difference between total assets and total liabilities should be positive.
- (e) **Average Annual Turnover:** Minimum average annual turnover required are as follows and will be calculated as total certified payments received for contracts in progress or completed within the last 3 (Three) Years.
 - **₹75,000.00**
- (f) Audited Annual Accounts certified by CA of the company for the last three (3) years (in case of companies) or IT Return duly acknowledged by the tax department for the last three (3) years (in case of bidders other than companies).

(g) Copies of Professional Tax Clearance Certificate, PAN and/or TAN Card, Registration Certificate (Form GST REG - 06) issued under Goods and Services Tax Laws.

24. **Supervising Authority:** The work shall be carried out under supervision of the concerned AGM as specified in Work Order.
25. **Approving Authority:** The CGM(O&M), LAR, AEGCL shall give the final approval to the submitted report. After approval, the contractor shall submit 6 (Six) Nos of hard copies of the approved reports in color at the office of the Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon.
26. **Execution of Work:** The execution of work shall be done in the presence of AEGCL officials/representatives. The successful bidder before beginning of the work shall intimate AEGCL regarding their readiness to initiate the work.
27. **Liquidated Damage:** The date of completion of work shall be deemed as the essence of the work order and shall not be completed no later than the time specified in the contract. In case of failure, AEGCL shall be entitled to recover an amount at the rate of 1% of the contract price per week subject to maximum of 10% of the work order value as liquidated damage of AEGCL. However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the work.
28. **Performance Guarantee:** A DD/BG for an amount equivalent to 10% (ten percent) of the total value of the work will shall have to be submitted as performance security within 3 days from date of issue of the W.O. and the said BG/DD shall be valid for a period of upto 3(three) months from the date of issue of W.O. After successful completion of the work and on completion of the period, the BG/DD shall be released on written request from the bidder.
29. Income tax shall be deducted at source. GST as per the GST norms shall be paid to the contractor.
30. The contractor should produce experience of such work executed earlier with supporting documents.
31. **Joint Venture is not allowed.**

32. BIDDER SHOULD EXAMINE & UNDERSTAND

All prospective bidders are required to thoroughly study and carefully examine all the terms and conditions, instructions, requirements & specifications pertaining to the work and visit the field of work to fully satisfy and acquaint themselves about the nature and location of work, the configuration of the ground, the surface conditions, quality and quantity of materials required and the type of equipment and facilities needed preliminary to and during the execution of the work and local conditions which may affect the work or cost thereof. Failure to do so will be at the bidder's risk.

33. Any condition not included herewith will be applicable as per the "GENERAL CONDITIONS OF SUPPLY AND ERECTION-2009" OF AEGCL.

Chapter-IV
BIDDER DETAILS

No. AEGCL/DGM/BONG/T&TC/T-1/2022/111

Dated: 01.02.2023

Name of Work: Feasibility study, Survey & Consultation work for relocation of towers of Loc. No. 22-23 of 132kV Gauripur-Bilasipara transmission line and Loc. No. 187 of 132kV Gauripur-Gossaigaon transmission line of AEGCL.

Name of Bidder :

Address :

Bidder's Contact Official/Representative Contact No :

Email Id:

Contact No:

PREVIOUS EXPERIENCE (As per Clause 23, Chapter-III):

(Make a list of your works of similar nature executed/completed by you along with supporting documents and enclose sheets if necessary).

DECLARATION (As per Clause 23, Chapter-III):

Manpower & Equipment(s) List (As per Clause 23, Chapter-III):

Seal and Signature of the Bidder.

Chapter –V

SCHEDULE OF WORK

(To be filled up and submitted separately as part of the 2nd Envelope i.e. Part-II : Price BID)

From

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.....
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To

The Deputy General Manager,

Bongaigaon T&T Circle,

AEGCL, Dhaligaon,

Chirang-783385

Sub: Submission of Tender for the Work – “NAME OF THE WORK”

Ref: Your Tender No. AEGCL/DGM/BONG/T&TC/T-1/2022/111 Dated: 01.02.2023

Sir,

Having thoroughly examined all terms and conditions of the NIT and having clearly understood the scope and specifications of the work to be executed as incorporated in the tender specification, I/We am/are submitting my/our rates for the work as follows:

Sl. No.	Details	Unit	Qty	Unit Rate	GST	Amount
1	Feasibility study, survey and Consultation for relocation of towers at Loc. No. 22-23 of 132kV Gauripur-Bilasipara TL & Loc. No. 187 of 132kV Gauripur-Gossaigaon TL	Job	2			

Total, In words, Rupees _____

Signature of the Bidder

5.1 TECHNICAL SPECIFICATIONS FOR SURVEY FOR REFERENCE OF THE BIDDERS:

5.1.1 For selection of routes, the statutory clearances as per Relevant Standards should be complied with and clearly mentioned in the reports.

5.1.2 The detailed survey shall be carried out using GPS, total stations, digital theodolites etc. along the approved route alignment. As an alternative, the contractor may also use ALTM (Airborne Laser Terrain Modeling) techniques of equal or better accuracy for the detailed survey and plotting on topo sheet to fixup angle point.

5.1.3 Soil resistivity, along the route alignment shall be measured in dry weather by four electrode method keeping inter – electrode spacing of 50 mtrs. For calculating soil resistivity formula $2\pi ar$ (where $a=50$ m and r =megger reading in ohms) shall be adopted. In case of soil characteristics changes within 2 to 3 km, values shall have to be measured at intermediate locations also. Megger reading and soil characteristics should also be indicated in the soil resistivity results.

5.1.4 Route Marking:

The route of the transmission line shall be recorded using GPS of positional accuracy less than 3m. The co-ordinates of all the angle points as well as other important crossings, landmarks etc. shall be recorded using GPS for easy relocating. 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 upto 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 AEGCL markings shall be made and co-ordinates recorded. Surveyor should provide concrete block of size 1000x150x150 mm buried to a depth of atleast 750 mm with AEGCL's name embossing on the concrete block at all angle point locations and important crossings etc.

5.1.5 Profiling

(a) The complete profiling along the route shall be carried out using surveying equipments viz. total stations, GPS, digital theodolite, long range scanners etc. 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 enroute 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.

(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 AEGCL's site-in-charge for review before taking up computer- aided tower spotting.

5.1.6 Optimization of tower location / tower spotting:

(a) Optimization of tower locations shall be done by the Contractor using computer-aided tower spotting software (PLS CADD). In order to verify the results of computer aided tower spotting, the contractor shall supply the AEGCL, one soft copy of tower spotting & optimization report.

(b) The sag-tension characteristics of the conductor as well as tower spotting data, sag template curves, if any required for tower spotting shall be prepared by the contractor on acrylic sheet indicating cold curve, hot curve, ground clearance curve and support footing curve.

(c) Tower Spotting: While profiling & spotting the towers, the following shall to be borne in mind :

i) Span: The number of consecutive spans between the section points shall not exceed **15 spans or 5 km in plain terrain and 10 spans or 3 km in hilly terrain** for 220KV line. A section point shall comprise of tension point with minimum angle of deviation type towers as applicable.

ii) Extension / Truncation: An individual span shall be as near to the normal design span as possible. In case an individual span becomes too short with normal supports on account of undulations in ground profile, one or both the supports of the span may be extended by inserting standard body/leg extension. In case of locations where the ground clearance

is available, truncated towers may be spotted. The provision kept in the design of towers with respect to body/leg extensions, truncations shall be intimated to the contractor by the AEGCL during execution stage.

- iii) Loading: There shall not be any upward force on suspension towers under normal working conditions and the suspension towers shall support at least the minimum weight span as provided in the designs. In case uplift is unavoidable, it shall be examined if the same can be overcome by adding standard body extensions to the towers failing which tension towers designed for the purpose shall be employed at such positions.
- iv) Road/NH Crossing: At all important road crossings, the tower shall be fitted with double suspension or tension insulator strings depending on the type of tower but the ground clearance at the road under maximum temperature and in still air shall be such that even with conductor broken an adjacent span, ground clearance of the conductor from the road surfaces will not be less than 9Mtr for 220KV & 132KV line. At all national highways tension towers shall be utilised and crossing span shall not be more than 250 meters.
- v) 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).
 - The crossing shall be supported on large angle type tower on either side depending on the merits of each case.
 - The crossing shall normally be at right angle to the railway track.
 - 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 centre of the nearest railway track.
 - No crossing shall be located over a booster transformer, traction switching station, traction sub-station or a track cabin location in an electrified area.
 - Minimum ground clearance above rail level of the lowest portion of any conductor under condition of maximum sag shall be maintained at 15.40 Mtr for 220KV line. And 14.6 Mtr for 132KV line.
 - The crossing span will be limited to 80% of Normal Span or 250 meters whichever is less.
- vi) River Crossings: In case of major river crossings, towers shall be of suspension type and the anchor towers on either side of the main river crossing shall be large angle Y/ D type tower. Clearance required by navigation authority shall be provided. For non-navigable river, clearance shall be reckoned with respect to highest flood level (HFL). Minimum ground clearance above the highest flood level river and lowest point of conductor shall be 3 Mtr. for 220KV line.
- vii) Power line crossings: Where this line is to cross over another line of the same voltage or lower voltage, R / A type tower with suitable extensions shall be used. Provisions to prevent the possibility of its coming into contact with other overhead lines shall be made in accordance with the Indian Electricity Rules, 1956 / Indian Electricity Act, 2003 as amended upto date. In order to reduce the height of the crossings towers it may be advantageous to remove the groundwire of the line to be crossed (if this is possible and permitted by the AEGCL of the line to be crossed). For power line crossings of voltage level of 132 KV and above, an angle towers shall be provided on either side of tangent R / A type tower which can be temporary dead-end condition with proper guying.
- viii) Telecommunication Line Crossings: The angle of crossing shall be as near to 90 degrees possible. However, deviation to the extent of 30 degree may be permitted under exceptionally difficult situations. When the angle of crossing has to be below 60 degrees, the matter will be referred to the authority in charge of the telecommunication system. On a request from the contractor, the permission of the telecommunication authority may be obtained by the owner. Also, in the crossing span, power line support will be as near the telecommunication line as possible, to obtain increased vertical clearance between the wires.
- ix) Details en route: All topographical details, permanent features, such as trees, buildings etc. 17.5Mtr (Total 35Mtr) for 220KV line on either side of the alignment and 8Mtr (Total 16Mtr.) for 132KV Line on either side of the alignment shall be detailed on the profile plan.

5.1.7 Clearance from Ground, Building, Trees etc.

- (a) Clearance from ground, buildings, trees and telephone lines shall be provided in conformity with the Indian Electricity Rules, 1956 / Indian Electricity Act, 2003 as amended upto date.
- (b) The contractor shall count, mark and put proper numbers with suitable quality of paint at his owncost on the trees that are to be cut by the AEGCL at the time of actual execution of the work as detailed below. Contractor may please note that AEGCL shall not pay any compensation for any loss or damage to the properties or for tree cutting due to contractor's work.
- (c) To evaluate and tabulate the trees and bushes coming within 17.5 Mtr. for 220KV line and 13.5 Mtr. for 132KV line on either side of the central line alignment the trees will be numbered and marked with quality paint serially from angle point 1 (1) onwards and the corresponding number will be painted on the stem of trees at a height of 1 meter from ground level.
- (d) The trees list should contain the following:
 - i. Girth (circumstances) measured at a height of 1 meter from ground level.
 - ii. Approximate height of the tree with an accuracy of +2 meters.
 - iii. Name of the type of the species / trees.
 - iv. The bushy and under growth encountered in the 35 Mtr. Belt for 220KV line and 27 Mtr. for 132KV line should also be evaluated with its type, height, girth and area in square meters, clearly indicating the growth in the tree / bush statement.
 - v. The contractor shall also intimate the AEGCL, his assessment about the likely amount of tree & crop compensation etc required to be paid by the AEGCL during execution stage. This assessment shall be done considering prevailing practices / guidelines, local regulations and other enquiries from local authorities.

5.1.8 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 AEGCL's site in charge.

5.1.9 Types of tower shall be A, B, C, D as per IS 5613 and other relevant standard for transmission lines.

5.1.10 Conductor to be used for 220 KV and 132 KV lines shall be AAC / ACSR Zebra and panther conductor respectively.

5.1.11 Detailed survey of tower locations:

- (e) The detailed survey shall be conducted to locate the tower locations on ground conforming to the profile and tower schedule.
- (f) The co-ordinates of all the tower locations shall also be recorded using GPS of positional accuracy less than 3m for easy relocating. The positions 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.
- (g) The contractor shall also collect required data at each tower location in respect of soil strata, ground water level, history of water table in adjacent areas / surface water and classify the suitable type of foundation at each tower location based on the data collected at each location and detailed soil investigations carried out at selected locations etc.
- (h) The levels up or down of each pit centre with respect to centre of tower location shall be recorded at intervals of 2m using total stations / GPS / digital theodolite and digitized contour plans shall be made. Based on the digitized elevation plans, the quantities of benching & protection work vis-à-vis possible unequal leg extensions shall be optimized using suitable computer aided techniques / softwares.

5.1.12 The changes desired by the AEGCL 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 AEGCL. 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.

**Appendix-2
PROFILE OF THE BIDDER**

Hard copy of the following documents to be submitted with Techno-Commercial Bid.

Sl. No.	Particulars	To be filled by Bidder
a)	Name of the Bidder	
b)	Registration with Memorandum of Association	
c)	PAN	
d)	GST Registration number	
e)	Labour License registration	
f)	Income Tax Clearance Certificate	
g)	Date of Establishment/ Incorporation	
h)	EPF	
i)	Annual turnover of last 3 years	
j)	Work order of similar nature	
k)	Postal Address	
	House No.	
	Lane	
	Street	
	Town/Village	
	Post Office	
	P.S.	
	District	
	Pincode	
l)	Telephone Number	
	Mobile No.	
	E-Mail Address	
	Website	
m)	Name(s) of the Owners / Directors/Partners	
n)	Name of the Banker with Address and Telephone Number	
o)	Contact Person Details <i>(Furnish here name of that person with whom AEGCL may get in touch for more information or clarifications)</i>	Name: Designation: Mobile No: Email Address: