

BIDDING DOCUMENT

FOR

Shifting/Raising of height of 132 KV D/C Kahilipara-Rangia TL and 132 KV S/C Sishugram-PBSL TL

ASSAM ELECTRICITY GRID CORPORATION LIMITED



BID IDENTIFICATION NO:

AEGCL/MD/CGM(O&M)/Shifting/NG Bridge/2021/BID

SECTION 1

INSTRUCTION TO BIDDERS

**Corporate Office,
Assam Electricity Grid Corporation Limited, Bijulee Bhawan,
Paltan Bazar, Guwahati-781001**

PHONE: 0361-2739520 FAX NO.0361-2739513

Web: www.aegcl.co.in Email: managing.director@aeqcl.co.in

1.1.0 INTRODUCTION:

The Chief General Manager (O&M), LAR on behalf of Assam Electricity Grid Corporation Ltd(AEGCL), hereinafter referred to as AEGCL or Purchaser invites single stage two envelope e-bids for the following work from eligible manufacturers/firms/companies/ contractors. Joint venture is allowed for this bid.

a) Name of work: Construction of Towers for height raising/realignment of 132 KV D/C Kahilipara-Rangia TL and 132 KV S/C Sishugram-PBSL TL.

1.2.0 INTENT OF THE TENDER ENQUIRY:

The intent of the Tender Enquiry is to invite proposals from the prospective and relevantly experienced and financially sound contractor(s) /firms to carry out the works as specified in this bidding document.

1.3.0 SCOPE OF WORK:

The major scopes of work are as follows:-

- a) Supply of Tower superstructure including nuts and bolts, stubs, ACSR panther conductors as per Bill of Quantity and bid specification.
- b) Supply of insulators, conductor accessories, hangers, vibration dampers, clamps & connectors and hardware fittings as per BoQ and bid specification.
- c) Construction of foundation as per BoQ and bid specification.
- d) Dismantling of existing TL Towers and Erection of new towers, hoisting of insulators, conductor accessories, hardwares, clamps and connectors etc. including installation of danger plates etc as per BoQ and bid specification.
- e) Lowering of existing line conductors and Stringing of new ACSR panther conductor. ERS shall be utilised in the period from lowering of conductor and till charging of the Transmission lines. Arrangement of ERS, erection and dismantling of ERS towers shall not be in the scope of the Contractor. However Contractor shall be responsible for stringing and lowering of conductor on ERS towers.
- f) Storage of dismantled Tower structures and TL materials and accesories to AEGCL store including transportation to store and material handling.
- g) Freight and Transit Insurance, storage at site and site insurance of all material at site shall be in the scope of the contractor.
- h) Any permits required for supply of materials shall be arranged by the contractor. However, AEGCL shall assist the contractor in arranging permits if any to the extent possible.
- i) Arrangement of RoW clearances shall not be in the scope of the contractor.

1.4.0 TIME SCHEDULE:

The successful bidder shall have to complete the works within **6 (Six) months** from the date of contract commencement.

1.5.0 ESTIMATE:

Rs. 2,31,23,256.00 (Rupees Two Crore Thirty One Lakh Twenty Three Thousand Two Hundred and Fifty Six) Only

1.6.0 ELIGIBILITY CRITERIA:

1.6.1. EXPERIENCE

To be qualified for the bid, the bidder must compulsorily meet the following minimum criteria; Bidder must establish the experience as single contractor or as a lead partner of a JV.

- i. Must have executed commissioning of transmission line with lattice structure of 132 KV or above voltage level with a minimum route length of 2 (two) KM.

OR

Must have completed construction of lattice tower and stringing of conductors at different locations at different times for a minimum total of 10(ten) towers.

- ii. Bidder must have valid electrical license for working on 132 KV Transmission line.

Bidder must fill form EXP-I and submit supporting documents (Copy of work orders and completion certificates) to establish his experience.

Participation as Joint Venture/Consortium is allowed for this bid. In case bidder is participating as JV, experience of all partners combined should meet the eligibility criteria (Experience) under clause 1.6.1.

1.6.2. FINANCIALS:

- i. As a minimum, a Bidder's net worth calculated as the difference between total assets and total liabilities should be positive. As supporting document, bidder should submit audited balance sheets or other financial statements acceptable to the Purchaser, for last 3 (three) financial years to demonstrate the current soundness of the Bidders financial position and its prospective long-term profitability. Apart from audited balance sheet, bidder shall submit duly filled and signed **Form 'FIN-1'** given in Section 2. Using the 'Form LIT – 1' (Section 2, Bidding Form), bidder shall list all Pending Litigation. All pending litigation shall be treated as resolved against the Bidder and so shall in total not represent more than 50% percent of the Bidder's net worth.
- ii. Bidder must have minimum **Average Annual Turnover (AAT) of Rs. 4,60,00,000.00 (Rupees Four Crore Sixty Lakh) only**. AAT shall be calculated by averaging total certified payments received for contracts in progress or completed, for the last 3 (three) years. The bidder shall furnish, along with its bid, audited balance sheets and duly filled up Form '**FIN-2**' in support of this Clause.

- iii. Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet:
- (a) the cash-flow requirement, **Rs. 77,00,000.00(Rupees Seventy Seven Lakh only)** for this work and
 - (b) the overall cash flow requirements for this contract and its current works commitment.
- Bidder must submit duly filled and signed **Form FIN-3 & FIN-4** of section 2 in support of this clause.

Joint Venture/Consortium is allowed for this bid. In case bidder is participating as JV, experience of all partners combined should meet the eligibility criteria (Financial) under clause 1.6.2.

1.6.3. TYPE TEST REPORT:

The offered products must be type tested at CPRI or NABL accredited test laboratory for critical performance at the time of bid submission. Bidder must submit full type test reports for the offered product along with the techno-commercial bid.

1.7.0 SITE VISIT:

The bidders are advised to visit and examine the sites of works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid. The costs of visiting the Site shall be at the bidder's own expense. The location of work is Amingaon, Guwahati. For details of location bidders may refer the tower schedule.

1.8.0 QUANTUM OF WORK:

The quantum of work is stated in the PRICE SCHEDULE at the end of section 2 – bidding forms.

1.9.0 QUERY ON THE BIDDING DOCUMENT:

Prospective bidder may submit queries, if felt necessary, requesting clarification of any bid clause. Such queries must be submitted in the e-tendering portal latest by the **Tender clarification end date and time** mentioned in the Bid Data Sheet. Purchaser shall clarify to the extent felt necessary or issue corrigendum for any amendment required in the bidding document. Such corrigendum/clarification shall be made available in the e-tendering portal and official website of AEGCL, www.aegcl.co.in . Any query submitted outside the e-tender portal viz. email, or in physical letters, shall not be entertained.

1.10.0 CLARIFICATION OF BIDS

To assist in the examination, evaluation, and comparison of the Technical and Price Bids, and qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its bid. Any clarification submitted by a Bidder that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change in the substance of the Technical Bid or prices in the Price Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the evaluation of the bids. If a Bidder does not provide clarifications of its bid by the date and time set in the Purchaser's request for clarification, its bid may be rejected.

1.11.0 DEADLINE FOR SUBMISSION OF BIDS

Bids shall be received ONLINE only on or before the date and time indicated in the **Bid Data Sheet**. The Purchaser may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

1.12.0 SUBMISSION OF BID:

The bidder shall submit the techno commercial & price bid through e-tendering portal <https://assamtenders.gov.in>. All documents as required by this bidding document shall be scanned and uploaded in the portal. Price schedule should be submitted in the format provided in the online portal. Bidder must go through the document checklist provided in this bidding document and submit all required document. Bidders are also requested to submit the informations in the format provided in this bidding document where applicable.

In addition to the online bid submission, (i) Original copy of **EMD/Online EMD payment receipt**, (ii) Duly filled and signed **tender submission form** and (iii) **Authorization letter of bid signatory** must be submitted in a sealed envelope superscribed with the name of bidder, full address, IFB reference, name of work etc. at the office of the Managing Director, Assam Electricity Grid Corporation Ltd, Bijulee Bhawan, Paltan Bazar Guwahati-781001 **one hour prior to bid submission end date and time. In case these documents are not received, the bid shall be summarily rejected.**

1.13.0 BID VALIDITY

The validity of bid shall be for **180(One Hundred Eighty) days** from the date of bid submission end date.

1.14.0 OPENING OF TECHNO-COMMERCIAL BIDS

The Purchaser shall conduct the opening of Technical Bids through online process at the address, date and time specified in the BDS. Bidders at their discretion may attend the techno-commercial bid opening.

Price bid of those bidders shall only be opened whose techno-commercial bids are found to be responsive to the requirement of the bidding document.

1.15.0 EARNEST MONEY DEPOSIT (EMD):

EMD amount mentioned in BDS must be submitted online through e-tendering portal. Copy of the EMD payment receipt should be submitted along with Techno-Commercial bid. Alternatively, if allowed, bidders may submit EMD BG from schedule banks in favour of Managing Director, AEGCL. The earnest money will be released to the unsuccessful bidders on finalization of the tenders. The EMD to the successful bidder will be released on submission of Security Deposit after execution of the contract agreement.

1.16.0 PRICE BASIS:

Cost quoted by the bidder shall be inclusive of all scope of work as specified in this bidding document including any related services that is implicit to carry out the work successfully. Price will be firm and no price variation will be allowed within the completion period given in the work order.

1.17.0 DEVIATIONS, RESERVATIONS, AND OMISSIONS:

During the evaluation of bids, the following definitions apply:

- a) "Deviation" is a departure from the requirements specified in the Bidding Document;

- b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
- c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.

1.18.0 PRELIMINARY EXAMINATION OF TECHNICAL BIDS:

The Purchaser shall examine the Techno-commercial Bid to confirm that all documents and technical documentation requested in this bidding document have been provided, and to determine the completeness of each document submitted. If any of these documents or information is missing, **the Bid may be rejected**. The Purchaser shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer **shall be rejected**.

- (a) Original copy of **EMD BG or Online EMD payment receipt**,
- (b) Duly filled and signed **tender submission form** and
- (c) **Authorization letter of bid signatory**

Bidder should submit hard copies of the documents mentioned above in (a), (b) and (c) in a physical envelope prior to deadline for technical bid submission. Techno-commercial bids shall be summarily rejected if these three documents are not submitted in hard copy deadline for technical bid submission.

1.19.0 RESPONSIVENESS OF TECHNO-COMMERCIAL BID:

The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself. A substantially responsive Techno-commercial Bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

- a) If accepted, would:
 - (i). Affect in any substantial way the scope, quality, or performance of the plant and services specified in the Contract; or
 - (ii). Limit in any substantial way, inconsistent with the Bidding Document, the Purchaser's rights or the Bidder's obligations under the proposed Contract; or
- b) If rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.

The Purchaser shall examine the Techno-commercial Proposal, to confirm that the requirement of the bidding document have been met without any material deviation or reservation.

If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

1.20.0 EVALUATION OF PRICE BIDS:

The Purchaser shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be used.

To evaluate a Price Bid, the Purchaser shall consider the following:

- a) The bid price excluding taxes as quoted in the Price Schedules;
- b) Price adjustment for correction of arithmetical errors.

1.21.0 AWARD CRITERIA:

Purchaser shall in general award the contract to the lowest substantially responsive bidder. However, the purchaser reserves the right to not award contract to the lowest substantially responsive bidder without thereby incurring any liability to Bidders.

1.22.0 PURCHASER'S RIGHT TO ACCEPT ANY BID, AND TO REJECT ANY OR ALL BIDS:

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

1.23.0 NOTIFICATION OF AWARD:

Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its bid has been partially or fully accepted quoting acceptance of the bid. The notification letter (hereinafter called the "Notification of Award") shall specify the sum that the Purchaser will pay the Contractor (hereinafter called "Contract Price") in consideration of the execution and completion of the services. Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

1.24.0 PERFORMANCE SECURITY:

Within 15 (five) days of receipt of the Notification of Award from AEGCL, the successful bidder shall furnish to AEGCL a performance security in an amount of **10 (Ten) percent** of the Contract Price in accordance with the Conditions of Contract. The form of performance security provided in Section 3 of the bidding documents may be used or some other form acceptable to AEGCL. The performance guarantee BG shall be valid through 60 days beyond the warranty period.

1.25.0 SIGNING OF CONTRACT AGREEMENT:

Within **15 (Fifteen) days** of receipt of the Notification of Award, the successful Bidder shall be required to sign the Contract Agreement with AEGCL using for that purpose, the contract form provided with this bidding document failing which AEGCL at its discretion may cancel the award.

**Annexure to SECTION 1
BID DATA SHEET**

Name of Work	Shifting/Raising of height of 132 KV D/C Kahilipara-Rangia TL and 132 KV S/C Sishugram-PBSL TL
Location of Work	Amingaon, North Guwahati
NIT No.	AEGCL/MD/CGM(O&M)/Shifting/NG Bridge/2021/NIT dtd. 22.06.2021
Bid Identification No.	AEGCL/MD/CGM(O&M)/Shifting/NG Bridge/2021/BID
Estimate(In Indian Rupees)	Rs. 2,31,23,256.00 (Rupees Two Crore Thirty One Lakh Twenty Three Thousand Two Hundred and Fifty Six) Only
Earnest Money Deposit (EMD)	Rs. 4,60,000.00 (Rupees Four Lakh Sixty Thousand) Only
Purchase's Address for correspondence	The Chief General Manager(O&M), LAR AEGCL 1st Floor, Bijulee Bhawan, Paltanbazar Guwahati(Assam) 781001 Telephone: +91 361 2739520 Facsimile number: +91 361 2739513 Electronic mail address: cgmom.lar@aegcl.co.in
Pre-bid date	Shall be notified, if any, in due course.
Bid submission mode	E-tenders shall be accepted through online portal https://assamtenders.gov.in only)
Address for bid opening	The Chief General Manager(O&M), LAR, AEGCL Floor/Room number: First Floor Street Address: Bijulee Bhawan, Paltanbazar City: Guwahati (Assam) PIN Code: 781001 Country: India
Key dates	Tender publishing date: 10:00 Hrs. 29.06.2021 Tender submission start date: 10:00 Hrs. 15.07.2021 Tender clarification end date: 17:00 Hrs. 13.07.2021 Tender submission end date and time: 12:00 Hrs. 26.07.2021 Techno-commercial bid opening date: 14:00 Hrs. 27.07.2021

SECTION -2 BIDDING FORMS

(This Section contains the forms which are to be completed by the Bidder and submitted as part of his Bid)

Form – 1 : Document checklist

SL. No.	Document to be submitted	Submitted(Yes/No)	Name of uploaded pdf
1.	Letter of technical bid(Form-2)		
2.	JV agreement/Deed of consortium(applicable only if bidder is participating as a JV/consortium)		
3.	Notarised Power of attorney for the person signing the tender		
4.	Bank Gurantee for EMD (Form-3)(Applicable if offline BG submission is allowed)		
5.	Manufacturer's authorisation		
6.	Bidders company/firm registration certificate/certificate of incorporation		
7.	GST registration		
8.	Electrical license for working on 132 KV(or above) line		
9.	Filled up Form ELI-1		
10.	Filled up Form LIT		
11.	Filled up Form FIN-1		
12.	Filled up Form FIN-2		
13.	Filled up Form FIN-3		
14.	Filled up Form FIN-4		
15.	Audited Balance sheet for last three years		
16.	Bank solvency certificate/other supporting document		
17.	Filled up Form EXP-1		
18.	Order/Contract copies establishing past experience		
19.	Completion certificate of work executed		
20.	Type test reports/Undertaking for insulator and hardware fittings		
21.	Completion schedule bar chart		
22.	Additional documents if any		

Note: Bidders are requested to submit all required documents in e-tender portal and **physical copies of i) Letter of technical bid, ii) EMD and iii) Power of Attorney(notarized) for bid signatory to Tender inviting authority.**

(In bidders letterhead)

Form-2
Letter of technical bid

Date:

To

The Chief General Manager (O&M), LAR
AEGCL, 1st Floor, Bijulee Bhawan,
Paltan Bazar, Guwahati-01

Bid Identification No: AEGCL/MD/CGM(O&M)/Shifting/NG Bridge/2021/BID

Sir,

I/We the undersigned, declare that, we, [insert name of the bidder] having registered office at [insert address of the registered office] having experience in construction/stringing of EHV transmission line, have read the bid document and do not have any reservation to any of the clause therein. We offer to execute the work of:

Shifting/Raising of height of 132 KV D/C Kahilipara-Rangia TL and 132 KV S/C Sishugram-PBSL TL

in conformity with the bid specification. Our Bid shall be valid for a period of **180(One Hundred Eighty)** days from the date fixed for the bid submission deadline and it shall remain binding upon us at any time before the expiration of that period.

Common Seal and Signature of the authorised person:

Name:

Designation:

Form – 3

Format for Bank Guarantee (Earnest money deposit)

Bank Guarantee
(To be stamped in accordance with Stamp Act)
(The non-Judicial Stamp Paper should be in the name of issuing Bank)

Bank's Name:
Address of Issuing Branch or Office:
Email id and phone no for correspondence:

Beneficiary: The Managing Director, AEGCL
Name and Address of Purchaser

Bid Security No.:

We have been informed that *name of the Bidder*. (Hereinafter called "the Bidder") intends to submit to you its bid against *Bid ref* for Supply installation, testing & commissioning of solar street light system.

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee. At the request of the Bidder, we *name of Bank with address*. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *amount in figures* (. *amount in words*) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy your notification to the Bidder of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

BG expiry date:
BG clam date:

Bank's seal and authorized signature(s)

NOTE

1. *All italicized text is for use in preparing this form and shall be deleted from the final document. An amount is to be inserted by the Guarantor, representing the EMD amount as per bid.*
2. *This guarantee shall be valid upto 30 days beyond the bid validity.*
3. *For BG amount equal to or more than 50,000.00, BG should be signed by two bank officers to be valid.*
4. *Address of the banker with email and phone number for correspondence with banker should be clearly mentioned. Any correspondence related to the BG with the banker shall be made to the address mentioned in the BG.*

Form 4
Manufacturer's Authorization
(To be submitted in Manufacturer's Letterhead)

Bid No.: AEGCL/MD/CGM(O&M)/Shifting/NG Bridge/2021/BID

To

The Chief General Manager (O&M), LAR
AEGCL, 1st Floor, Bijulee Bhawan,
Paltan Bazar, Guwahati-01

WE *[insert: name of Manufacturer]* who are established and reputable manufacturers of *[insert: name and/or description of the Goods]* having production facilities at *[insert: address of factory]* do hereby authorize *[insert: name & address of Bidder]* (hereinafter, the "Bidder") to submit a bid the purpose of which is to provide the following goods, manufactured by us, and to subsequently negotiate and sign the Contract:

1. -----
2. -----

We hereby extend our full guarantee and warranty in accordance with **Clause 5.11.0** of the Special Conditions of Contract, for the above specified Goods supporting the Supply of specified Goods and fulfilling the Related Services by the Bidder against this Bidding Documents, and duly authorize said Bidder to act on our behalf in fulfilling these guarantee and warranty obligations.

Further, we also hereby declare that we and *[insert: name of the Bidder]* have entered into a formal relationship in which, during the duration of the Contract (**including related services and warranty / defects liability**) we, the Manufacturer or Producer, will make our technical and engineering staff fully available to the technical and engineering staff of the successful Bidder to assist that Bidder, on a reasonable and best effort basis, in the performance of all its obligations to the Purchaser under the Contract.

For and on behalf of the Manufacturer

Common Seal and Signature of the authorised person:

Name:

Designation:

NOTE:

This MA should be signed by a person having either of the following-

- 1) Valid Power of attorney
- 2) Authorised by Managing Director
- 3) Member of Board of Directors

Form-ELI-1
Bidder's information Sheet

Sl. No.	Particulars	Bidders response
1	Bidder's name and registered address	
2	Bidder's authorised representative, designation and contacts	
3	GST registration no.	
4	Bid validity	180(One Hundred Eighty) Days

(Signature and common seal)

Name:

Designation:

Date:

**Form – LIT
Pending Litigation**

Year	Matter in Dispute	Value of Pending Claim in Rupees	Value of Pending Claim as a Percentage of Net Worth

(Signature and common seal)

Name:

Designation:

Date:

Form FIN – 1
Financial Situation

Information from Balance Sheet

Financial Data for Previous 3 Years [Rupees]	Year 1 [Mention Financial Year]	Year 2 [Mention Financial Year]	Year 3 [Mention Financial Year]
Total Assets			
Total Liabilities			
Net Worth			
Current Assets			
Current Liabilities			

Information from Income Statement

Total Revenues			
Profits Before Taxes			
Profits After Taxes			

Note: To be supported by audited financial documents

(Signature and common seal)

Name:

Designation:

Date:

Form FIN – 2
Average Annual Turnover

Annual Turnover Data for the Last 3 Years	
Year	Amount (Rupees)
Average Annual Turnover	

The information supplied should be the Annual Turnover of the Bidder in terms of the amounts billed to clients for each year for contracts in progress or completed.

(Signature and common seal)

Name:

Designation:

Date:

Form FIN – 3
Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total cash flow demands of the subject contract or contracts with necessary supporting documents.

Financial Resources		
No.	Source of financing	Amount (Rupees)
1		
2		
3		

(Signature and common seal)

Name:

Designation:

Date:

Form FIN- 4

Current Contract Commitments

Bidders should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

No.	Contract No., Customer and name of work	Contract value(Rs.)	Estimated Completion Date	Value of Outstanding Work (Rs.)
1				
2				
3				
4				
5				

(Signature and common seal)

Name:

Designation:

Date:

**Form – EXP-1
EXPERIENCE**

Each Bidder must fill in this form

Sl. No.	Customer name	Contract No. and date	Work order value	Brief description of work	Completion date

Note: Order/contract copies are to be submitted as supporting document. Performance/completion certificate to be submitted wherever applicable.

(Signature and common seal)

Name:

Designation:

Date:

Price schedule – 1(A)

Construction of 5 (five) nos. Tower at loc. no. 35, 36, 36(A), 37 & 38 for raising the height of 132 KV D/C Kahilipara-Rangia Transmission Line (Supply schedule)

Sl. No.	Item Description	Quantity	Units	BASIC RATE in Rs.	TOTAL AMOUNT in Rs.
1	Tower Superstructure				
1.1	Galvanised Lattice steel tower super structure,[including hangers,gussets,strain plate (Approximate HT Steel =28%, MS=72%) B+6=3 Nos B+9= 2 Nos	32.75	MT		
2	Stub Sets				
2.1	Partially galvanised Stub angle with cleat (Approximate HT Steel =95%, MS=5%)	1.45	MT		
3	Stub setting template				
3.1	Stub setting template	1.05	MT		
4	Nuts and bolts				
4.1	Galvanised Nuts and Bolts	1.6	MT		
5	Power Conductor				
5.1	ACSR Panther Conductor	9.50	KM		
6	OPGW				
6.1	OPGW 24 Fibre Overhead Cable	1.6	RKm		
6.2	Downlead Clamp	20	Nos		
6.3	OPGW Vibration Damper c/w preform armoure rod	60	Nos		
6.4	OPGW optical spice kit including junction box	2	Nos		
6.5	OPGW tension double dead end set with and without splice location (Tension Tower Arrangement)	9	Nos		
6.6	OPGW Suspension Assembly with twisted link c/w preform armour rods & tower bond clamp	6	Nos		
7	Insulators				
7.1	90 KN porcelein Insulator	720	Nos		
8	Power Conductor Accessories				
8.1	Single Tension Hardware fittings suitable for ACSR Panther Conductor	48	Nos		
8.2	Double Tension Hardware fittings suitable for ACSR Panther Conductor	12	Nos		
8.3	Vibration Damper suitable for ACSR panther conductor	60	Nos		
9	Tower Accessories				
9.1	Supply of Danger Plate	5	Nos		
9.2	Supply of Phase Plate	5	Set		

9.3	Supply of Number Plate	5	Nos		
9.4	Supply of Anti-Climbing Device	5	Nos		
Total in Figures – Schedule 1(A)					

Price schedule – 1(C)

Construction of 5 (five) nos. Tower at loc. no. 35, 36, 36(A), 37 & 38 for raising the height of 132 KV D/C Kahilipara-Rangia Transmission Line (F&I schedule)

Sl. No.	Item Description	Quantity	Units	BASIC RATE in Rs.	TOTAL AMOUNT in Rs.
1	F&I - Tower Superstructure				
1.1	Galvanised Lattice steel tower super structure,[including hangers,gussets,strain plate (Approximate HT Steel =28%, MS=72%) B+6=3 Nos B+9= 2 Nos	32.75	MT		
2	F&I - Stub Sets				
2.1	Partially galvanised Stub angle with cleat (Approximate HT Steel =95%, MS=5%)	1.45	MT		
3	F&I - Stub setting template				
3.1	Stub setting template	1.05	MT		
4	F&I - Nuts and bolts				
4.1	Galvanised Nuts and Bolts	1.6	MT		
5	F&I - Power Conductor				
5.1	ACSR Panther Conductor	9.50	KM		
6	F&I - OPGW				
6.1	OPGW 24 Fibre Overhead Cable	1.6	RKm		
6.2	Downlead Clamp	20	Nos		
6.3	OPGW Vibration Damper c/w preform armoure rod	60	Nos		
6.4	OPGW optical spice kit including junction box	2	Nos		
6.5	OPGW tension double dead end set with and without splice location (Tension Tower Arrangement)	9	Nos		
6.6	OPGW Suspension Assembly with twisted link c/w preform armour rods & tower bond clamp	6	Nos		
7	F&I - Insulators				
7.1	90 KN Porcelain Insulator	720	Nos		
8	F&I - Power Conductor Accessories				
8.1	Single Tension Hardware fittings suitable for ACSR panther conductor	48	Nos		
8.2	Double Tension Hardware	12	Nos		

Sl. No.	Item Description	Quantity	Units	BASIC RATE in Rs.	TOTAL AMOUNT in Rs.
	fittings suitable for ACSR panther conductor				
8.3	Vibration Damper suitable for ACSR panther conductor	60	Nos		
9	F&I - Tower Accessories				
9.1	Danger Plate	5	Nos		
9.2	Phase Plate	5	Set		
9.3	Number Plate	5	Nos		
9.4	Anti-Climbing Device	5	Nos		
Total in Figures					

Price schedule – 1(C)

Construction of 5 (five) nos. Tower at loc. no. 35, 36, 36(A), 37 & 38 for raising the height of 132 KV D/C Kahilipara-Rangia Transmission Line (Erection schedule)

Sl. No.	Item Description	Quantity	Units	BASIC RATE in Rs.	TOTAL AMOUNT in Rs.
1	Survey				
1.1	Detail & Check survey as per specification	1.53	Km		
2	Construction of RCC foundation including all labour, material, equipment, excavation, shuttering, head loading, back filling etc. complete for handling, transportation, batching, mixing, placing, levelling, curing etc complete inclusive of cost of cement and reinforcement steel.				
2.1	(a) Concreting	140.7	CUM		
2.2	(b) Reinforcement	7.75	MT		
3	Stub setting				
3.1	Setting of stubs (Sets of four) including transportation & distribution of stub and accessories from store to site excluding cost of excavation, concreting & back filling.	5	Set		
4	Erection of superstructure				
4.1	Superstructure erection including transportation of structures by any means and distribution of structure and accessories from store to site	34.35	MT		
4.2	Welding of all nuts & bolts up to the bottom cross arm level including all charges of transportation, materials etc.	5	Nos		
5	Stringing				
5.1	Stringing of power conductors including transportation from Stores and distribution of conductors and accessories to sites and laying, stringing, tensioning, clamping, jointing, jumpering and hoisting of insulators complete including cost of all	0.891	RKM		

Sl. No.	Item Description	Quantity	Units	BASIC RATE in Rs.	TOTAL AMOUNT in Rs.
	fittings and accessories not specifically mentioned elsewhere per route Km (6 conductors) of line.				
5.2	Stringing of Optical Ground wire including transportation and distribution of ground wire and accessories to site and laying, stringing, tensioning , clamping, jointing , complete including all fittings and accessories not specifically mentioned elsewhere per route Km of line	0.9	RKM		
6	Grounding and other works				
6.1	Grounding of towers with 3 metre long 25 mm dia G I pipe, including cost of all materials, such as GI pipes, GI bolts & nuts and washer, salt, cock etc as per Specification	5	Nos		
6.2	Painting of towers with bituminous paints of approved quality up to 3 metres from ground level including the cost of paints.	5	Nos		
6.3	Welding of all nuts & bolts up to the bottom cross arm level including all charges of transportation, materials etc.	5	Nos		
6.4	Erection of Danger plates. (1 no per tower)	5	Nos		
6.5	Erection of Phase plates (1 set per tower)	5	SET		
6.6	Erection of Number plates. (1 no per tower)	5	Nos		
6.7	Erection of anti-climbing device (1 set per tower)	5	SET		
Total in Figures					

Price schedule – 1(D)

Construction of 5 (five) nos. Tower at loc. no. 35, 36, 36(A), 37 & 38 for raising the height of 132 KV D/C Kahilipara-Rangia Transmission Line (Dismantling schedule)

Sl. No.	Item Description	Quantity	Units	Basic rate in Rs.	Total price in Rs.
1.1	Opening and lowering of Optical Fibre Ground Wire along with accessories from the portion of the line to be dismantled and transportation to the AEGCL store	5.346	KM		
1.2	Opening and lowering of the Power Conductor from the portion of the line to be dismantled and transportation to AEGCL store	5.346	KM		
1.3	Dismantling of tower without damaging the members, transportation of tower materials and accessories to AEGCL store and proper staking	5	Nos		

Price schedule – 2(A)

Construction of 2 (Two) no. B+9 & 2 (Two) no. B+6 F.S Tower at loc. no. 9, 10, 11 & 12 for raising the height of 132 KV S/C Sisugram-PBSL Transmission(Supply Schedule)

Sl. No.	Item Description	Quantity	Units	Basic rate in Rs.	Total amount in rs.
1	Tower Superstructure				
1.1	Galvanised Lattice steel tower super structure,[including hangers,gussets,strain plate (Approximate HT Steel =28%, MS=72%) B+6=2 Nos & B+9=2 Nos	26.60	MT		
2	Stub Sets				
2.1	Partially galvanised Stub angle with cleat (Approximate HT Steel =95%, MS=5%)	1.14	MT		
3	Stub setting template				
3.1	Stub setting template	1.04	MT		
4	Nuts and bolts				
4.1	Galvanised Nuts and Bolts	1.50	MT		
5	Power Conductor				
5.1	ACSR Panther Conductor	5.35	KM		
6	Ground Wire & Accessories				
6.1	G.I. Ground Wire	1.80	Km		
6.2	Strain Clamp	8	Nos		
6.3	Copper Earth Bond	8	Nos		
7	Insulators				
7.1	Porcelain Disc Insulator, 90 KN	300	Nos		
8	Power Conductor Accessories				
8.1	Single Tension Hardware fittings for Panther Conductor	6	Nos		
8.2	Double Tension Hardware fittings for Panther Conductor	18	Nos		
8.3	Stock Bridge type Vibration Damper for ACSR Panther conductor	24	Nos		
9	Tower Accessories				
9.1	Supply of Danger Plate	4	Nos		
9.2	Supply of Phase Plate	4	Set		
9.3	Supply of Number Plate	4	Nos		
9.4	Supply of Anti-Climbing Device	4	Nos		
Total in Figures					

Price schedule – 2(B)

Construction of 2 (Two) no. B+9 & 2 (Two) no. B+6 F.S Tower at loc. no.9, 10, 11 & 12 for raising the height of 132 KV S/C Sisugram-PBSL Transmission(F&I schedule)

Sl. No.	Item Description	Quantity	Units	Basic rate	Total amount
1	F&I - Tower Superstructure				
1.1	Galvanised Lattice steel tower super structure,[including hangers,gussets,strain plate (Approximate	26.60	MT		

Sl. No.	Item Description	Quantity	Units	Basic rate	Total amount
	HT Steel =28%, MS=72%) B+6=2 Nos & B+9=2 Nos				
2	F&I - Stub Sets				
2.1	Partially galvanised Stub angle with cleat (Approximate HT Steel =95%, MS=5%)	1.14	MT		
3	F&I - Stub setting template				
3.1	Stub setting template	1.04	MT		
4	F&I - Nuts and bolts				
4.1	Galvanised Nuts and Bolts	1.50	MT		
5	F&I - Power Conductor				
5.1	ACSR Panther Conductor	5.35	KM		
6	F&I - Ground Wire & Accessories				
6.1	G.I. Ground Wire	1.80	Km		
6.2	Strain Clamp	8	Nos		
6.3	Copper Earth Bond	8	Nos		
7	F&I - Insulators				
7.1	Porcelain Disc Insulator, 90 KN	300	Nos		
9	F&I - Power Conductor Accessories				
9.1	Single Tension Hardware fittings for Panther Conductor	6	Nos		
9.2	Double Tension Hardware fittings for Panther Conductor	18	Nos		
9.3	Stock Bridge type Vibration Damper for Panther Conductor	24	Nos		
10	F&I - Tower Accessories				
11.1	Danger Plate	4	Nos		
11.2	Phase Plate	4	Set		
11.3	Number Plate	4	Nos		
11.4	Anti-Climbing Device	4	Nos		
Total in Figures					

Price schedule – 2(C)

Construction of 2 (Two) no. B+9 & 2 (Two) no. B+6 F.S Tower at loc. no.9, 10, 11 & 12 for raising the height of 132 KV S/C Sisugram-PBSL Transmission(Erection schedule)

Sl. No.	Item Description	Quantity	Units	Basic rate in Rs.	Total amount in Rs.
1	Survey				
1.1	Detail & Check survey as per specification	1.742	Km		
2	Construction of RCC foundation including all labour, material, equipment, excavation, shuttering, head loading, back filling etc. complete for handling, transportation, batching, mixing, placing, levelling, curing etc complete inclusive of cost of cement and reinforcement steel.				
2.1	(a) Concreting	113.50	CUM		
2.2	(b) Reinforcement	6.25	MT		
3	Stub setting				
3.1	Setting of stubs (Sets of four) including	4	Set		

Sl. No.	Item Description	Quantity	Units	Basic rate in Rs.	Total amount in Rs.
	transportation & distribution of stub and accessories from store to site excluding cost of excavation, concreting & back filling.				
4	Erection of superstructure				
4.1	Superstructure erection including transportation of structures by any means and distribution of structure and accessories from store to site	28.10	MT		
4.2	Welding of all nuts & bolts up to the bottom cross arm level including all charges of transportation, materials etc.	4	Nos		
5	Stringing				
5.1	Stringing of power conductors including transportation from Stores and distribution of conductors and accessories to sites and laying, stringing, tensioning , clamping, jointing , jumpering and hoisting of insulators complete including cost of all fittings and accessories not specifically mentioned elsewhere per route Km (3 conductors) of line.	1.742	RKM		
5.2	Stringing of G.I. Ground wire including transportation and distribution of ground wire and accessories to site and laying, stringing, tensioning , clamping, jointing , complete including all fittings and accessories not specifically mentioned elsewhere per route Km of line	1.742	RKM		
6	Grounding and other works				
6.1	Grounding of towers with 3 metre long 25 mm dia G I pipe, including cost of all materials, such as GI pipes, GI bolts & nuts and washer, salt, cock etc as per Specification	4	Nos		
6.2	Painting of towers with bituminous paints of approved quality up to 3 metres from ground level including the cost of paints.	4	Nos		
6.3	Danger plates. (1 no per tower)	4	Nos		
6.4	Erection of Phase plates.	4	SET		
6.5	Erection of Number plates. (1 no per tower)	4	Nos		
6.6	Erection of anti-climbing device (1 set per tower)	4	SET		
Total in Figures					

Price schedule – 2(D)

Construction of 2 (Two) no. B+9 & 2 (Two) no. B+6 F.S Tower at loc. no.9, 10 , 11 & 12 for raising the height of 132 KV S/C Sisugram-PBSL Transmission(Dismantling schedule)

Sl. No.	Item Description	Quantity	Units	Basic Rate in Rs.	Total amount in Rs.
1.1	Opening and lowering of ground wire from the portion of the line to be dismantled and transportation to AEGCL store(Route KM)	1.742	RKM		
1.2	Opening and lowering of the conductor from the portion of the line to be dismantled and transportation to the store (6 Conductors)	5.226	KM		
1.3	Dismantling of tower without damaging the members, transportation to the store and proper staking	4	Nos		
Total in Figures					

Note:

- 1) Price quoted should be without GST.
- 2) The price schedules presented here is for reference only. Bidders must submit the price using the price schedule available in e-tendring portal. **These are not to be submitted in the techno-commercial envelope.**
- 3) If any item is not specifically mentioned in the price schedule but required to complete the job successfully, same shall be deemed to be included in any of the items of the price schedule.

Section - 3 Purchaser's Requirements

3.1.0 SCOPE

The brief description of scope covered under this Bidding Document is furnished below. Bidders must read the bid document particularly the bid specifications thoroughly to understand the scope of work.

- a) Supply of Tower superstructure including nuts and bolts, stubs, ACSR panther conductors as per Bill of Quantity and bid specification.
- b) Supply of insulators, conductor accessories, hangers, vibration dampers, clamps & connectors and hardware fittings as per BoQ and bid specification.
- c) Construction of foundation as per BoQ and bid specification.
- d) Dismantling of existing TL Towers and Erection of new towers, hoisting of insulators, conductor accessories, hardwares, clamps and connectors etc. including installation of danger plates etc as per BoQ and bid specification.
- e) Lowering of existing line conductors and Stringing of new ACSR conductor. ERS shall be utilised in the period from lowering of conductor and till charging of the Transmission lines. Arrangement of ERS, erection and dismantling of ERS towers shall not be in the scope of the Contractor. However Contractor shall be responsible for stringing and lowering of conductor on ERS towers.
- f) Storage of dismantled Tower structures and TL materials and accessories to AEGCL store including transportation to store and material handling.
- g) Freight and Transit Insurance, storage at site and site insurance of all material at site shall be in the scope of the contractor.
- h) Any permits required for supply of materials shall be arranged by the contractor. However, AEGCL shall assist the contractor in arranging permits if any to the extent possible.
- i) Arrangement of RoW clearances shall not be in the scope of the contractor.

3.2.0 SERVICE CONDITIONS

Bidder should note the following climatic and other conditions prevailing in the location of work:

- | | |
|--|-------------------------------|
| a) Peak ambient day temperature in still air | : 45°C |
| b) Minimum night temperatures | : 0°C |
| c) Ground temperatures | : 40°C |
| c) Reference ambient day temperature | : 45°C |
| d) Relative Humidity | a) Maximum : 100 % |
| | b) Minimum : 10 % |
| e) Altitude | : Below 1000 M above MSL |
| f) Maximum wind pressure | : As per IS: 802 latest code. |
| g) Seismic Intensity | : ZONE-V as per IS 1893. |

3.3.0 Technical Standards

The tension string assemblies, insulator discs and hardware offered, material and processes adopted in the manufacture of insulator discs and hardware shall conform to the provision of the following standards or equivalent other international standards:

- | | |
|--------------|---|
| (1) IS: 731 | Specification of porcelain insulators for overhead power lines. |
| (2) IS: 2486 | Specification of insulator fittings for overhead power lines. |
| (3) IS: 2026 | Specification for recommended practice for hot dip galvanizing of steel |
| (4) IS: 2633 | Specification for method for testing uniformity of coating on zinc coated articles. |

- (5) IS: 2107 Specification for white hearth malleable iron castings.
- (6) IS: 2108 Specification for black hearth malleable iron castings.

3.4.0 TECHNICAL SPECIFICATION

3.4.1. TOWER SUPERSTRUCTURE AND ACCESORIES

3.4.1.1. GENERAL

The AEGCL shall provide drawings for G.I. towers to the successful bidder at the time of award of contract. The Contractor has to regenerate three copies of drawings for approval.

3.4.1.2. DRAWING TO BE PREPARED BY CONTRACTOR

The contractor shall prepare fresh drawings of the tower structures based on the drawings furnished by AEGCL and shall submit the same along with the detailed bill of materials for AEGCL's approval/reference. The fabrication work shall be started only after the approval of detail bill of materials and shall strictly conform to the approved drawings supplied by AEGCL. It is the responsibility of the Contractor to reproduce the drawings and The Site Engineer reserves the right to make changes to drawings supplied to the contractor for revisions to reflect more updated requirements. Revisions to drawings and any new drawings made to include additional works by the contractors shall be considered as a part of this specification and AEGCL shall entertain no extra claim on this account.

In the case of variations in drawings and specifications the decisions of the site Engineer shall be final. If the contractor found discrepancies in the execution of his work he shall refer such discrepancies to the site Engineer before proceedings with such works.

3.4.1.3. MATERIALS

Materials for steel structure including bolts, anchor bolts, washers etc shall be of tested quality and shall conform to IS: 226 and IS: 2062 (for plates over 20mm thick) Dimensions of all bolts and nuts shall conform to IS 6639 and their mechanical properties shall conform to property class 4.6 and class 4 of IS: 1367 for bolts and nuts respectively. Dimensions and mechanical properties of all washers shall conform to IS: 6610 and IS: 3063 respectively. Other materials used in the construction of steel structure shall conform to appropriate IS specification for the materials wherever they exist. All members of the steel structures, bolts, nuts and washers shall be galvanized.

3.4.1.4. FABRICATION

The workmanship shall conform to the best practice in modern structural shops and to the provisions of IS: 802 (Part-II) and IS: 800 as applicable.

3.4.1.5. CONNECTIONS

All connections shall be designed for the full strength and properties of the members. The fabrication, in general shall be bolted type. Bolts shall also be used for field connections unless otherwise specified in the drawings or permitted by the site engineer for any special circumstances. Bolting shall be conforming to IS: 802 (Part-I & II) and IS: 800 as applicable.

Welding where required shall be generally done in accordance with the relevant IS standards. Selection of electrodes shall conform to IS: 815. MS electrodes for welding shall conform to IS 814. Welding procedure shall conform to IS: 816 and IS 823.

3.4.1.6. TOLERANCES.

Fabrications tolerances shall conform to IS: 802 (Part-II) and IS: 800 as applicable.

3.4.1.7. MARKING

The marking procedure shall conform to IS: 802 and IS: 800 as applicable.

3.4.1.8. SHOP ASSEMBLY

All steelworks (one in each type) shall be temporarily shop assembled complete or as directed by the site engineer before commencing mass fabrication to ensure proper field erections. Reaming of untrue holes will not be allowed. A reasonable amount of drifting will be allowed in assembling. Shop assembled parts shall be dismantled for shipment.

3.4.1.9. GALVANIZING

Bolts and other fasteners shall be galvanized in accordance with IS: 5358. Galvanizing members of structures shall conform to IS: 4759 and spring washers shall be galvanized in accordance IS; 1573.

The recommendation given in IS: 2629 and IS: 6159 shall be complied with in respect of surface preparations, safety and applications of coating.

3.4.1.10. INSPECTION AND PACKING

The recommendation given in IS: 802 (Part-II) and IS 800 for inspection and packing shall be complied with.

3.4.1.11. TESTING

The material used for fabrication of towers shall be tested for quality.

3.4.1.12. FIELD ERECTION

Erection work shall be done strictly according to the provisions of IS: 802.

3.4.2. CONDUCTOR(ACSR Panther)

3.4.2.1. GENERAL

The Power Conductor shall conform to IS: 398 Part-IV.

3.4.2.2. CONDUCTOR PARTICULARS:

The Power Conductor properties shall conform to IS: 398 Part-IV.

3.4.3. HANGER

3.4.3.1. Hanger material shall be of forged steel conforming to IS:2004:1993 class-4. Galvanising shall be hot dip conforming to IS:2629. Ultimate tensile strength shall be 120 KN or above.

3.4.4. INSULATOR DISCS AND STRINGS

3.4.4.1. TYPE OF INSULATORS:

All suspension and tension strings shall consist of standard centre ball and socket type porcelain insulators with all the exposed porcelain parts fully glazed, unless otherwise specified.

3.4.4.2. QUALITY AND STRENGTH OF THE INSULATORS:

The insulators and their hardware used in the lines shall comply with requirement of relevant IS or other equivalent international standards.

3.4.4.3. MATERIALS USED:

The porcelain used in the manufacture of the insulators shall be of the best quality and shall be manufactured by the wet process. It shall be homogeneous, free from lamination; flaws etc. and well

finished making it impervious to moisture. The glaze shall be brown color and shall cover all the porcelain parts of the insulator except those areas necessarily left unglazed for the purpose of assembly. The cement used in the construction of the insulators shall not cause fracture by expansion or loosening and shall not give rise to any chemical reaction with the metal fittings.

3.4.5. HARDWARE FITTINGS FOR INSULATOR

3.4.5.1. HARDWARE:

Each insulator string assembly shall generally include the following hardware:

Anchor shackle for attachment of suspension string assembly to the tower hanger and tension string assembly to the tower strain plate. Suitable top and bottom yoke assemblies with the arrangement of fixing a set of arcing horns.

- Set of arcing horns
- Suspension or tension clamp
- Bolts, nuts, washers, split pins etc.
- Other fittings necessary to make the strings complete such as ball clevis, socket clevis, chain links etc.

The bidder shall be responsible and satisfy himself that all the hardware included in strings are entirely suitable for the conductor offered.

3.4.5.2. STRAIN CLAMP:

The bolted strain clamps shall also be made of malleable iron or aluminum alloy; hot dip galvanized, lined with sheet aluminum liners and shall be suitable to accommodate the conductor with necessary binding tapes etc. The lips shall be rounded off carefully and conductor seating and the ball mouth shall be smooth to avoid corona and radio interference noises. Suitable attachment for receiving one side of arcing horns and for connecting to the insulator strings shall be provided.

The strain clamps shall be such that the conductor should not slip at a load of 90% of the breaking load of the conductor. The ultimate strength of the clamp for horizontal load shall not be less than the ultimate strength of the conductor.

3.4.5.3. OTHER INSULATOR STRING HARDWARE:

The strength of other string hardware namely anchor shackle, yoke plates, socket-clevis etc. shall be coordinated with insulator disc strength.

3.4.5.4. INTERCHANGEABILITY:

The hardware together with ball and socket fittings shall be of standard design, so that this hardware are interchangeable with each other and suitable for use with disc insulators of any make conforming to relevant Indian/International Standard

3.4.5.5. BALL AND SOCKET DESIGNATION:

The dimensions of the ball and socket shall be of 20 mm designation for 70 KN , 90 KN and 120 KN discs, in accordance with the standard dimensions stated in IS: 2486-(Part-II) /IEC: 120. The dimensions shall be checked by the appropriate gauge after galvanizing only.

3.4.5.6. SECURITY CLIPS AND SPLIT PINS:

Security clips for use with ball and socket coupling shall be R-shaped, hump type which provides positive locking of the coupling as per IS: 2486-(Part-III)/IEC: 372. The legs of the security clips shall be spread after assembly in the works to prevent complete withdrawal from the socket. The locking device

should be resilient, corrosion resistant and of suitable mechanical strength. There shall be no risk of the locking device being displaced accidentally or being rotated when in position. Under no circumstances shall the locking devices allow separation of fittings.

The hole for the security clip shall be countersunk and the clip should be of such design that the eye of clip may be engaged by a hot line clip puller to provide for disengagement under energized conditions. The force required to pull the security clip into its unlocked position shall neither be less than 50 N (5 kg) nor more than 500 N (50 kg).

Split pins shall be used with bolts & nuts.

3.4.5.7. ARCING HORN FOR EHV STRINGS:

The arcing horn shall be provided on tower side of the hardware fittings. The same shall be either ball ended rod type or tubular type.

The spark gap shall be so adjusted to ensure effective operation under actual field conditions.

3.4.5.8. DEAD END ASSEMBLY:

The dead end assembly shall be suitable for Conductor as detailed in the document.

The dead end assembly shall be compression type with provision for comprising the jumper terminal at one end. The angle of the jumper terminal to be mounted should be 300 with respect to the vertical line. The area of bearing surface on all the connections shall be sufficient to ensure positive electrical and mechanical contact. The resistance of the clamp when compressed on Conductor shall not be more than 75% of the resistance of equivalent length of Conductor.

The assembly shall not permit slipping of, damage to, or failure of the complete conductor or any part thereof at a load less than 95% of the ultimate tensile strength of the conductor.

3.4.6. TOWER FOUNDATION

This section covers the specifications for design of foundations for various types of towers and special structures under different soil condition described hereinafter.

Design of foundations is not in the scope of Bidders for this package. The foundations shall be constructed on the basis of drawings supplied by the Employer. However, in case any special type of foundation is required but is not covered in the bidding document, the Employer may ask the Contractor to design and construct such foundation.

3.4.6.1. STANDARDS

For design of foundations reference shall be made to **IS 4099**.

3.4.6.2. TYPE OF FOUNDATION

3.4.6.2.1. Most of the paddy fields of Assam remain under water for about 3 months in a year. During the remaining period of the year sub-soil water is normally found about 1.5 meters below the ground level. The Contractor shall note this factor while designing the foundation of towers.

3.4.6.2.2. It is expected that the type of foundations defined in **Clause 4.3.4** below shall be suitable for use at various locations of all the Transmission Lines covered in this Bid Document. *The Contractor shall examine the suitability of foundation type assigned for each location depending on the soil investigation reports.*

3.4.6.2.3. In case a defined type of foundations cannot be used at certain location(s), the Contractor may be asked to design foundations for such locations and payments shall be made at unit rates of other type of foundations.

3.4.6.2.4. The Contractor shall design and quote for the following four types of foundations and all the foundations shall be RCC type.

- (i) **Dry type foundation:** Design of this type of foundation shall be normally for dry / rocky / hard soil for which, (a) weight of earth shall be assumed to be 1600 kg/cum. (b) The Limit Bearing Capacity of the soil shall be 22000 kg/square meter. (c) The angle of repose shall be 30°.
- (ii) **Wet type foundation (Suitable for paddy field location):** Design of this type of foundation shall be for locations where sub-soil water level is found below 1.5 meters from the ground level. This design shall also be suitable for paddy fields in Assam, as described in the first Para 4.3.1 above. The weight, the limit bearing capacity, the angle of repose and the ultimate bearing capacity of soil up to depth of 1.5 meter shall be taken as mentioned in (i) above and same for earth beyond 1.5 meter depth shall be taken as per (iv) below.
- (iii) **Semi sub-merged type foundation:** Design of this type of foundations shall be for locations where sub-soil water level is found below 0.75 meter from the ground level. The weight, the limit bearing capacity, the angle of repose and the ultimate bearing capacity of soil up to depth of 0.75 meter shall be taken as mentioned in (i) above and same for earth beyond 0.75 meter depth shall be taken as per (iv) below.
- (iv) **Sub-merged type foundation:** Design of this type of foundations shall be for locations where sub-soil water level is found at less than 0.75 meter from the ground level including completely sub-merged locations. (a) The weight of earth shall be assumed to be 850 kg/cum. (b) The limit bearing capacity of the soil shall be 11000 kg/sq. meter. (c) The angle of repose shall be 15°.

3.4.6.3. SEISMIC CONDITION:

Each foundation shall be provided with the tie beam for each type of tower to take care of seismic conditions. Force due to earthquake shall be assumed to be vertical 0.1g and horizontal 0.2g.

3.4.6.4. OVER LOAD FACTOR

The magnitude of limit loads for foundation should be taken as 10% higher than those for the corresponding towers.

3.4.6.5. FOUNDATION DEPTH

The total depth of foundations below the ground level shall not be less than 1.5 meter. To maintain interchangeability of stubs for all type foundations of each type of towers almost the same depths of foundations will be used. However, the maximum depth of foundations for all types of towers shall not be more than 3.0 meters below the ground level.

3.4.6.6. LOADS ON FOUNDATIONS

The foundation shall be designed to withstand the loads of the superstructure (as specified under Section - 3) for the full footing reactions obtained from the structure as per analysis in conformity with the relevant factors of safety. The reactions on the footings shall be composed of the following types of loads for which they shall be required to be checked.

1. Maximum tension or uplift
2. Maximum compression or down thrust
3. Maximum horizontal shear or side thrust

The additional weight of concrete in the footing below ground level over the earth weight and the full weight of concrete above the ground level in the footing and the embedded steel parts will also be taken into account adding to the down thrust.

3.4.6.7. CONCRETING

The concrete foundation for transmission line towers shall consists of two portions viz. (i) pyramid & (ii) chimney. In chimney portion, the thickness of the concrete cover should be such that it provides minimum cover of not less than 10 cm from any part of the stub angle to the nearest outer surface of the concrete in

respect of all dry locations, limiting the minimum section of chimney to 30.5 cm. Sq. In respect of all wet locations, the section of chimney should be 45.72 cm. Sq. uniformly for all sizes of stub angle.

The chimney top or muffing must be 23 cm above ground level in dry locations, 38 cm in irrigated field and 15.24 cm above maximum water level in tank beds.

The size of the bottom portion of the foundation viz. Pyramid should be designed according to the nature of the sub soil met with at the design depth for the stub angles.

The maximum base thickness in the pyramid portion in case of sub-merged foundation may be taken as 200 mm.

3.4.6.8. VOLUME OF FOUNDATIONS

The volume of foundation of a tower shall mean the total volume of the foundation including chimney, tie beams and the PCC soling. The volumes indicated for various types of tower foundations in Annexure-II of Sections 1 are provisional only and for bidding purpose. Measurements and payments shall be made only on the basis drawings released for construction.

Similarly for reinforcement steel, the weight for payment shall be as indicated in the drawings released for construction and no extra shall be paid for lap joints, hooks, etc. and wastages.

3.4.7. ERECTION

3.4.7.1. GENERAL:

The details specifications given below are intended for general description of quality, workmanship etc for the items given under clause 3.1.0 above but do not cover minutes details of the work. In the absence of relevance details in the specifications the work shall be executed according to the prevailing practices and to the discretion of the site engineer.

3.4.7.2. TYPE OF FOUNDATION:

Construction of foundation is not in the scope of this work.

3.4.7.3. TOWER ERECTION:

Erection of towers is not in the scope of this work.

3.4.7.4. STRINGING OF CONDUCTOR:

The Hotline stringing of the conductors shall be done in a most standard method used for such lines, which shall be indicated in the tender. The tenderer shall give complete details of the stringing method they propose to follow and indicate its adaptability and advantages. They shall also indicate the tools and equipment required for stringing by the method proposed by them. The contractor shall use his own stringing and erection tools and other equipment.

The contractor shall be entirely responsible for any damage to the towers or the conductors during stringing.

3.4.7.5. PULLING OPERATION:

The earth wire shall be strung and securely clamped to the towers before the conductors are drawn up in order of the top conductor first.

The pulling of the conductor into the travellers (comprising of aerial and ground rollers) shall be carried out in such a manner that the conductor is not damaged or contaminated with any foreign substance and that it may not be rubbed with rough ground surface. The traveler surface in contact with aluminium surface of conductor is not damaged. These shall be equipped with high quality ball and roller bearings for minimum friction.

During pulling out operation the tension in each conductor and earth wire shall not exceed the design working tension of the conductor at the actual prevailing temperature. After being pulled the conductor

and the earth wire shall not be allowed to hang in the stringing blocks for more than 96 hours, before being pulled to the specified sag. It shall be ensured that the conductors and earth wire are not damaged due to wind, vibration or other cause.

3.4.7.6. SAGGING IN OPERATION:

The conductors shall be pulled up to desired sag and left in travellers for at least one hour after which the sag shall be rechecked and adjusted. The conductors shall be clamped within 36 hours for sagging in. The sags shall also be checked when the conductors have been drawn up and transferred to the insulator clamps.

At sharp vertical angles the sags and tensions shall be checked on both sides of the angle. Sagging operations shall not be carried out under wind, extremely low temperature or other adverse weather conditions, which prevent satisfactory sagging.

3.4.7.7. JOINTING:

All the joints of the conductor or the earth wire shall be compression type in accordance with the recommendations of the manufacturers, for which the necessary tools and equipment like compressors and dies, grease guns, presses shall have to be arranged by the contractor.

All joints and splices shall be made at least 30 meters away from the structures. No joint or splices shall be made in span crossing over main roads, railways, small rivers or in tension spans. Not more than one joint shall be allowed in one span.

After pressing the joint the aluminum sleeve shall have all corners rounded, burrs and sharp edges removed and smoothened.

3.4.7.8. INSULATOR HOISTING:

Suspension insulator strings shall be used up to deviation of 2 degrees on all 'A' type towers in the line and strain insulators on all 'B', C and D' type towers. Except on approaching towers, all suspension strings will consist of the specified number of insulator discs per string with arching horns on line side only and tension string of specified number of insulator discs per string with arching horns on both line and tower sides.

Insulator strings shall be assembled on the ground. These shall be cleaned and examined before hoisting. Insulators with hair cracks or clips or those having glazing defects exceeding half centimeter square will not be used. No separate rates shall be quoted for insulator hoisting. The charges shall be included in the rates of string of conductors.

3.4.7.9. ACCESSORIES:

Accessories like vibration dampers; armour rods etc. for the conductor shall also be fitted on the line. Armour rods shall be provided at all suspension support of the conductors and vibration dampers shall be provided at both ends of each span at suitable distances from the supporting points for each phase conductor. All accessories shall be clean, smooth and in perfect condition before fitting.

3.4.7.10. GROUNDING:

The Contractor shall measure the tower footing resistance (TFR) of each tower in the diverted section of the line after it has been erected and before the stringing of the earth wire during dry weather. Each tower shall be earthed and the tower footing resistance shall not exceed 10 ohms. Generally pipe type earthing shall be done in accordance with the latest additions and revisions of:

IS: 3043 : Code of practice for Earthing.

IS: 5613 : Code of practice for Design, Installation and maintenance (Part-II/Section-2) of

overhead power lines.

The earthing will be effected by burying 3 meters long GI pipe in a 300 mm diameter and 3750 mm deep pit at a distance of not less than 3650 mm diagonally away from the stubs and filling in the pit with finely broken coke having the granule sizes not less than 25 mm and salt in such a way that a minimum cover of 125 mm thick salt mixed coke shall be maintained from the pipe on all sides and that the top edge of the pipe shall be at least 600 mm below the ground level. A 45 X 6 mm-galvanized steel flat shall be used to connect the tower with the pipe. The galvanizing steel strip shall be buried not less than 600 mm deep from the ground level. The tenderer will quote the erection charges for each earthing inclusive of the cost of coke and salt, excavation and back filling etc.

3.4.8. FINAL CHECKING, TESTING & COMMISSIONING

(a) After completion of the works, final checking of the line shall be done by the contractor to ensure that all the foundation work; tower erection and stringing have been done strictly according to the specifications and as approved by the Employer. All the works shall be thoroughly inspected keeping in view the following main points:

1. All the tower members are correctly used strictly according to final approved drawings are free of any defect or damage whatsoever.
2. All the bolts are fully tightened and they are properly punched.
3. The stringing of the conductors and earth wire done to maintain proper sag.

The contractor shall submit a report to the above effect. After final checking the line shall be tested for insulation and any defect found shall be rectified by the contractor.

(b) After satisfactory tests on the line and on approval by the Employer the line shall be energized at full operating voltage before handing over.

Section - 4
General Conditions of Supply and Erection of AEGCL

This Section 'General Conditions of Supply and Erection of AEGCL' supplementary to Section -5 'Special Conditions of Contract' of this document and [can be downloaded from www.aegcl.co.in](http://www.aegcl.co.in). Whenever there is a conflict, the provisions in SCC or the other Sections of this bid document shall prevail over those in the 'General Conditions of Supply and Erection of AEGCL'.

Section - 5

Special Conditions of Contract

5.1.0 DEFINITION OF TERMS

“Contract” means the Contract Agreement entered into between the Purchaser and the Contractor, together with the Contract Documents referred to therein; they shall constitute the Contract, and the term “the Contract” shall in all such documents be construed accordingly.

“Contract Documents” means the documents listed in Article 1.1 (Contract Document) of the Contract Agreement (including any amendments thereto).

“Contract Price” means the price payable to the Contractor as specified in the Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.

“Day” means calendar day

“Year” means 365 days.

“Month” means calendar month.

“Party” means the “Purchaser” or the “Contractor”, as the context requires.

“Purchaser” means the Assam Electricity Grid Corporation Limited (in short AEGCL) and its assignees.

The “Contractor” shall mean the tenderer / bidder whose tender/ bid has been accepted by the “Purchaser” and shall include the bidder’s legal representatives, successors and assignees.

“Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Contractor is required to supply to the Purchaser under the Contract.

“Delivery” means the transfer of the Goods from the Contractor to the Purchaser in accordance with the terms and conditions set forth in the Contract.

“Completion” means the fulfilment of the Related Services by the Contractor in accordance with the terms and conditions set forth in the Contract.

“Related Services” means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other similar obligations of the Contractor under the Contract.

The “Specification” shall mean the “Purchaser’s Requirements”.

“Contractor” means the natural person, a company/firm, or a combination of these, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Agreement, and includes the legal successors or permitted assigns of the Contractor.

5.2.0 CONTRACT DOCUMENTS

- 5.2.1. Subject to Article 1.2 (Order of Precedence) of the Contract Agreement, all documents forming part of the Contract (and all parts thereof) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.

5.3.0 LEGAL JURISDITCTION

- 5.3.1. For any litigation arising out of the contract which cannot be resolve through mutual agreement or through Arbitration the honorable Guwahati High Court will have sole jurisdiction of all settlement.

5.4.0 LANGUAGE

- 5.4.1. The ruling language of the Contract shall be English.

5.5.0 SCOPE OF WORK

- 5.5.1. The Goods and Related Services to be supplied shall be as specified in section 3- Purchaser’s requirement and quantity as stated in Schedule No. 1 of Section -2, Bidding Forms.

5.5.2. Unless otherwise stipulated in expressly limited in the Purchaser's Requirements, the Scope of Supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Delivery and Completion of the Goods and Related Services as if such items were expressly mentioned in the Contract.

5.6.0 DELIVERY SCHEDULE

- 5.6.1. Contract completion period shall be counted from contract commencement date. Completion of the work shall be within **6(Six) months** from Contract commencement.
- 5.6.2. The Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Article 3 of the Contract Agreement (Contract Forms) or within such extended time to which the Contractor shall be entitled under SCC **Clause 5.16.0** hereof.

5.7.0 CONTRACT PRICE

- 5.7.1. The Contract Price shall be as specified in **Article 2 (Contract Price)** of the Contract Agreement.
- 5.7.2. Unless an escalation clause is provided for in the **Article 2 (Contract Price)**, the Contract Price shall be a firm shall not subject to any alteration, except in the event of a Change in the scope or changes in applicable tax rates or as otherwise provided in the Contract.

5.8.0 TERMS OF PAYMENT

- 5.8.1. The contract price shall be paid as specified in subsequent sub-clauses, if not provided in Contract Forms, Section-6.

A. Progressive payments for supply items within the country:

1. Within 60 (sixty) days from the date of submission of the invoice against supply, 60% (sixty percent) payment of the total supply amount would be made along with 100% GST on receipt and acceptance of materials in full and good condition.
2. In total, 10 (ten) Nos. of progressive supply invoice would be entertained.
3. For payment of 60% (sixty percent) of total supply amount, maximum 6 (six) Nos. of progressive supply invoice would be entertained.
4. Remaining 4 (four) Nos. of supply invoice would be entertained on fulfilment of the following conditions –
 - (a) 50% of balance supply amount would be paid on completion of 50% of the total erection works or on proportionate basis, of the project.
 - (b) Remaining 50% of the supply amount would be paid on completion of 100% erection, testing and commissioning activities of the project.

B. Progressive payments for erection works :

1. Within 60 (sixty) days from the date of submission of invoice against erection, 30% (thirty percent) payment against foundation & erection of total erection cost would be paid along with 100% GST
2. In total 8 (eight) Nos. of progressive erection invoice/ bill would be entertained.
3. The 1st progressive erection invoice/ bill would be entertained on completion of 30% of total erection cost of the project.
4. Thereafter, erection invoice/ bill can be submitted on completion of 10% of the subsequent erection work
5. 6 (six) Nos. of progressive erection invoice/ bill would be entertained in 6 (six) equal instalments @10% or proportionate progressive erection works as deemed fit by the AEGCL.

6. Remaining 10% of the erection value would be paid on completion of 100% erection, testing and commissioning activities of the project.
- 5.8.2. Documents required along with invoice: Following documents need to be submitted along with invoice – Payment of invoice would be entertained subject to submission of the following documents with the invoice –
- (a) Unconditional acceptance of the Letter of Award and signed Contract Agreement, by the contractor for supply.
 - (b) Detailed Supply Plan /Project Execution Plan/ PERT chart approved by AEGCL.
 - (c) Documentary evidence of dispatch (R/R or receipt of L/R)-(for Supply only.)
 - (d) Contractor's detailed invoice & packing list identifying contents of each shipment/supply. -(for Supply only.)
 - (e) Copy of certificate in respect of payments of State/ Central taxes, duties, levies, etc. have been made against supply of equipment/ materials through contractors/ sub-vendors under the contract, if applicable.
 - (f) Certified copy of Insurance Policy/ Insurance Certificate.
 - (g) Manufacturer's/ Contractor's Guarantee Certificate of Quality.
 - (h) Material Dispatch Clearance Certificate (MDCC)/ Dispatch Instructions (DI) for dispatch of materials from the manufacturer's works. MDCC/DI shall be issued by authorised Officer of the AEGCL. -(for Supply only.)
 - (i) Manufacturer's/ Supplier's copy of challan.-(for Supply only.)
 - (j) Copy of testing/ inspection of equipment/ material clearance certificate issued by AEGCL. -(for Supply only.)
 - (k) Copy of Goods Receipt Sheet (GRS)/ Materials Received Voucher (MRV)/ Materials Handing Over Voucher (MHOV). - (for Supply only.)
 - (l) Joint Measurement Sheet. - (for erection only.)
 - (m) Labour Licence, Insurance, etc. - (for erection only.)
- 5.8.3. Payments would be made subject to fulfilment of the following conditions -
- (i) Advance copy of invoices in duplicate with documents/ information as stated under clause (a) to (m), Whichever is applicable, are to be furnished sufficiently in advance.
 - (ii) Any demurrage charges on account of late intimation and/or delivery of documents by the Bank is to be borne by the supplier.
 - (iii) The supplier should intimate the dispatch of each and every consignment to the Purchaser and the Consignee.
 - (iv) All Bank charges are to be borne by the supplier.
 - (v) Payment through Bank for supply of equipment/ materials, dispatched by Rail would be allowed if required, however the equipment/ materials have to reach at destination/ project site in full and good condition and additional expenditure in any form for this is to be borne by the supplier. A prior approval from appropriate authority of the AEGCL is to be taken in this respect.
 - (vi) Payment through Bank for supply of equipment/ materials, dispatched by road transport would be allowed if required, provided that, the transport agency is approved by the Banking Association and prior approval thereof is given by the AEGCL's appropriate authority.
- 5.8.4. **ADVANCE PAYMENT**
No advance payment is applicable for this contract.

5.9.0 **PERFORMANCE SECURITY DEPOSIT**

- 5.9.1. The successful bidder shall have to deposit to the extent of **10% (Ten percent) of the Contract price** as performance security (Bank Guarantee), within fifteen (15) days of receipt of notification of award, duly pledged in favor of the Managing Director, AEGCL and such security deposits shall be valid up to 60(sixty) days beyond the warranty period as per **clause 5.11.3**.
- 5.9.2. If the Contractor fails or neglects to observe, perform any of his obligations under the contract, it will be lawful for the "Purchaser" to forfeit either in full or in part at his absolute discretion, the security deposit furnished by the Contractor.
- 5.9.3. No interest shall be payable on such deposits.

5.10.0 RETENTION MONEY

- 5.10.1. Deduction shall be as per payment terms clause no. 5.8.2.
- 5.10.2. No interest shall be payable on such deductions/retentions.

5.11.0 WARRANTY

- 5.11.1. The Contractor/Manufacturer warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 5.11.2. The Contractor/Manufacturer further warrants that the Goods shall be free from defects arising from any act or omission of the Contractor or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.
- 5.11.3. The warranty shall remain valid for **36 (Thirty Six) months** from the date of successful commissioning after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Purchaser's Requirement. Bidder may at its discretion offer extra warranty which shall be evaluated in the mark based evaluation system
- 5.11.4. If during the Period Warranty any defect should be found, the Purchaser shall give Notice to the Contractor/Manufacture stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Contractor/Manufacturer to inspect such defects.
- 5.11.5. If having been notified, the Contractor/Manufacturer fails to remedy the defect within a period of 15 (fifteen) days, the Purchaser may, following notice to the Contractor/Manufacturer, proceed to do such work, and the reasonable costs incurred by the Purchaser in connection therewith shall be paid to the Purchaser by the Contractor or may be deducted by the Purchaser from any amount due the Contractor or claimed under the Performance Security.

5.12.0 QUANTITY VARIATION

- 5.12.1. "Purchaser" shall have the right to increase/decrease the ordered quantity by 35% within 50 days of the period of completion and the same shall be carried out at the same rates /prices and terms and conditions stipulated in the contract except in regard to completion schedule, which shall be mutually agreed upon in case of enhancement of the ordered quantity.

5.13.0 INSPECTION AND TESTING

- 5.13.1. The Contractor shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in Sections 3, Purchaser's Requirements.
- 5.13.2. The inspections and tests shall generally be conducted on the premises of the Contractor/Manufacture. Subject to Sub-Clause 5.13.3, The Contractor shall furnish, all reasonable facilities and assistance, including access to drawings/process chart and production data to the inspectors at no charge to the Purchaser.

- 5.13.3. The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in SCC Sub-Clause 5.13.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.
- 5.13.4. Whenever the Contractor is ready to carry out any such test and/or inspection, the Contractor shall give a reasonable advance notice (not less than 21 days) of such test and/or inspection and of the place and time thereof to the Purchaser. The Contractor shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- 5.13.5. The Contractor/manufacture shall provide the Purchaser with a certified report of the results of any such test and/or inspection.
- 5.13.6. The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Contractor shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to SCC Sub-Clause 5.13.4
- 5.13.7. If it is agreed between the Purchaser and the Contractor that the Purchaser shall not attend the test and/or inspection, then the Contractor may proceed with the test and/or inspection, and should provide the Purchaser with a certified report of the results thereof.
- 5.13.8. The Contractor agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to SCC Sub-Clause 5.13.5 & 5.13.7, shall release the Contractor from any warranties or other obligations under the Contract.

5.14.0 INSURANCE

- 5.14.1. The "Contractor" shall, have, unless, otherwise specified by the Purchaser, insure the materials through their underwrites at their cost and shall keep it insured against any loss/ damaged/ pilferage in transit, destruction or damage by fire/ flood, without exposure to vagaries of weather or through riot, civil commotion, war or rebellion, for the full value of the materials until the materials are received at the purchaser's destination store.
- 5.14.2. The "Contractor" shall be responsible for safe arrival at destination, unloading and receipt of the materials by the consignee. The Purchaser will discharge consignee's responsibilities only and shall not be responsible for any damage/ loss/ pilferage/ non-delivery by the carriers.
- 5.14.3. In case of any loss/ damage/ pilferage/ non-delivery/ short delivery by carriers etc.; the Contractor shall replace free of cost missing / damaged / lost materials within 30(thirty) days from the receipt of report thereof from the consignee(s) without waiting for settlement of their claims with their carriers / under-writers. Normally, such reports from the consignee(s) to the Contractor shall be initiated within a period of 30(thirty) days from the date of receipt of each consignment by him /them.
- 5.14.4. If it is considered necessary that the damaged equipment either in part or in full to be sent back to the manufacturer's works for repair, the manufacturers/ Contractors will furnish the Bank Guarantee for the full value of equipment needing repairs and such Bank Guarantee shall remain valid till such time, the equipment are repaired and returned to the consignee in good condition. The to and fro freight, handling and insurance charges in such cases will be borne by the Contractor.
- 5.14.5. Unless, otherwise mutually agreed upon, in case of failure by the Contractor to replenish /make good of the loss /damage /short supplied quantities, within the stipulated period, the Purchaser reserves the right to forfeit the security deposit and/ or adjust any outstanding payment to the "Contractor" with the Purchaser or take any other appropriate action.

5.15.0 FORCE MAJEURE

- 5.15.1. "Force Majeure" shall mean any event beyond the reasonable control of the Purchaser or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:
- (a) war, hostilities or warlike operations whether a state of war be declared or not, invasion, act of foreign enemy and civil war
 - (b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts
 - (c) confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government or de jure or de facto authority or ruler or any other act or failure to act of any local state or national government authority
 - (d) strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine and plague
 - (e) earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster
 - (f) shortage of labor, materials or utilities where caused by circumstances that are themselves Force Majeure.
- 5.15.2. If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.
- 5.15.3. The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with **SCC Clause 5.16.0**.

5.16.0 EXTENSION OF TIME FOR COMPLETION

- 5.16.1. The Time(s) for Completion specified in the Article 3 of the Contract Agreement (Contract Forms) shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:
- (a) any Change in the scope of works by the Purchaser; which justifies extension of completion time as provided in **SCC Clause 5.12.0**; and
 - (b) any occurrence of Force Majeure as provided in **SCC Clause 5.15.0**.
- 5.16.2. Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Purchaser's Representative a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Purchaser and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Purchaser's estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter to a Dispute Board, pursuant to **SCC Sub-Clause 5.19.0**.

5.17.0 LIQUIDATED DAMAGE

- 5.17.1. The Contractor guarantees that it shall attain Completion of the Works within the Time for Completion specified in the Contract Agreement pursuant to **SCC Sub-Clause 5.6.2**, or within such extended time to which the Contractor shall be entitled under **SCC Clause 5.16.0** hereof.

- 5.17.2. If the Contractor fails to attain Completion of the Works within the Time for Completion or any extension thereof under **SCC Clause 5.16.0**, the Contractor shall pay to the Purchaser liquidated damages at the rate of **1% (one percent)** of the total Contract Price per week or part thereof delay. The aggregate amount of such liquidated damages shall in no event exceed **10% (ten percent)** of the total contract price. However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the Works or from any other obligations and liabilities of the Contractor under the Contract.
- 5.17.3. Once the aggregated "Liquidated damage" reaches 10% of the total contract price, the Purchaser may consider following actions:
- (a) Procure the undelivered material/ equipment and/or complete the balance works from elsewhere giving notice to the Contractor and to recover any extra expenditure incurred thereby for having to procure these materials and works at higher price, at the risk and responsibility of the Contractor; or
 - (b) Cancel the contract wholly or in part and to complete the works at the full risk and cost of the Contractor and forfeit the security deposit.
 - (c) Declare it as a "Contractual Failure" and act in accordance with **SCC Clause 5.18.0**.

5.18.0 CONTRACTUAL FAILURE

- 5.18.1. In the event of contractual failure of any respect on the part of the Contractor, the Purchaser shall be entitled to operate security deposit or any deposit or any payment due to Contractor irrespective of whether his default relates to the particular orders or not towards the Purchaser's claim for damages arising out of the failure. In addition, the Purchaser may black-list or bans the "Contractor" or pending enquiry, suspend him or take any other steps considered suitable.

5.19.0 ARBITRATION

- 5.19.1. If at any time, any question, disputes or differences whatsoever shall rise between the Purchaser and the Contractor, upon or in relation to or in connection with the contract, either party may forthwith give notice to the other in writing of the existence of such question of dispute or difference and the same shall be referred to the adjudication of three Arbitrators, one to be nominated by the Purchaser the other by the Contractor and the third by the President of the Institution of Engineers, India/ Retired or Sitting Judge not below the status of a retired Judge of High Court of India. If either of the parties fail to appoint its arbitrators within 60(sixty) days after receipt of notice of the appointment of arbitrators then the President of the Institution of Engineers /retired or sitting Judge of India, as the case may be, shall have the power at request of either of the parties, to appoint an Arbitrator. A certified copy of the "President" making such an appointment shall be furnished to both parties
- 5.19.2. The arbitration shall be conducted as per provisions of the Indian Arbitration Act, shall be held at Guwahati or any other place as may be decided by the Purchaser. The decision of the majority of Arbitrators shall be final & binding upon the parties and the expenses of the arbitration shall be paid as may be determined by the Arbitrator. However, any dispute arising out of this contract will first be discussed and settled bilaterally between Purchaser and the Contractor.

Section 6 - Contract Forms

This Section contains the format for Notification of Award, the Contract Agreement and Appendices to the Contract Agreement which, once completed, will form the Contract along with the Section 4 and Section 5. The Bidder should note that this Section shall be completed fully at the time of Contract signing.

[AEGCL's letter head]

Notification of Award

[date]

To: [Name and address of the Contractor]

This is to notify you that your Bid dated [date] for execution of the [name of the work] against [Bid identification number] for the Contract Price in the aggregate of Rupees [amounts in numbers and words] (as per Price Schedule-1), as corrected and modified in accordance with the Instructions to Bidders is hereby accepted, and it is decided to award on you the ('_____ **Name of work** _____') covering inter-alia supply of all equipment and services specified in bidding document.

You are requested to furnish the Performance Security within fifteen (15) days in accordance with the Conditions of Contract, using for that purpose one of the Performance Security Forms included in Section 6 (Contract Forms) of the Bidding Document.

[Authorized Signature]

[Name and Title of Signatory]

Assam Electricity Grid Corporation Limited

Attachment: 1) Price schedule (with arithmetic correction if any)
2) Draft Contract agreement

STAMP(Rs. 100, Non Judicial)

1. Contract Agreement

(Supply and related services Contract)

THIS AGREEMENT made the _____ day of _____, _____,
BETWEEN

Assam Electricity Grid Corporation Limited (herein after referred to as AEGCL), a corporation incorporated under the laws of Company Act, 1956 and having its registered office at First Floor, Bijuli Bhawan, Paltanbazar, Guwahati-781001, Assam and [**name of Contractor**], a firm/company incorporated under the laws of Company Act, 1956 and having its principal place of business at [**address of Contractor**] (hereinafter called "the Contractor"). [~~**in case of JV insert name and address of the Lead Partner as well as other Partners**~~]

WHEREAS AEGCL desires to engage the Contractor to the 'Ex-works Supply Contract' (also referred to as the 'First Contract') covering inter-alia supply of all equipment and materials for the complete execution of '**Construction of Towers for height raising/realignment of 132 KV D/C Kahilipara-Rangia TL and 132 KV S/C Sishugram-PBSL TL**' as detailed in the Contract Document ("the Facilities"), and the Contractor has agreed to such engagement upon and subject to the terms and conditions hereinafter appearing.

NOW IT IS HEREBY AGREED as follows:

Article 1

Contract Documents

1.1 **Contract Documents** (Reference SCC Clause 5.2.0)

The following documents shall constitute the Contract between the Purchaser and the Contractor, and each shall be read and construed as an integral part of the Contract:

- (a) This Contract Agreement and the Appendices hereto
- (b) Letter of Price Bid and Price Schedules submitted by the Contractor
- (c) Letter of Technical Bid and Technical Proposal submitted by the Contractor
- (d) Special Conditions of Contract
- (e) General Conditions of Supply and Erection.
- (f) Specification(Purchaser's Requirements)
- (g) Drawings (Purchaser's Requirements)
- (h) Other completed Bidding Forms submitted with the Letters of Technical and Price Bids
- (i) Guaranteed and other Technical Particulars (as submitted with the Bid).
- (j) Any other documents shall be added here

1.2 **Order of Precedence** (Reference SCC Clause 5.2.0)

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.

1.3 **Definitions** (Reference SCC Clause 5.1.0)

Capitalized words and phrases used herein shall have the same meanings as are ascribed to them in the SCC.

**Article 2
Contract Price and
Terms of Payment**

- 2.1 **Contract Price** (Reference SCC Clause 5.7.0)
The Purchaser hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The Contract Price shall [. . . **amounts in rupees in words** . . .], [. . . **amounts in figures** . . .] as specified in Price Schedule No. 3 (Grand Summary).
The Contract Price is fixed.
- 2.2 **Terms of Payment** (Reference SCC Clause 5.8.0)
The terms and procedures of payment according to which the Purchaser will pay the Contractor are given in the Appendix (Terms and Procedures of Payment) hereto.

**Article 3
Commencement Date
and Completion Time**

- 3.1 **Commencement Date** (Reference SCC Clause 5.6.1)
The Commencement Date upon which the period until the Time for Completion of the Works shall be counted from is the date when this Contract Document is signed.
- 3.2 **Completion Time** (Reference SCC Clause 5.6.2)
The whole works under the scope of this Contract shall be completed within **6 (Six)** months from Contract Commencement Date with following schedule:

Article 4. Appendices

- 4.1 The Appendices listed in the attached List of Appendices shall be deemed to form an integral part of this Contract Agreement.
- 4.2 Reference in the Contract to any Appendix shall mean the Appendices attached hereto, and the Contract shall be read and construed accordingly.

IN WITNESS WHEREOF the Purchaser and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

Signed by, for and on behalf of the Purchaser

Signed by, for and on behalf of the Contractor

[**Signature**]

[**Signature**]

[**Title**]

[**Title**]

in the presence of

in the presence of

[**Signature**]

[**Signature**]

[**Title**]

[**Title**]

APPENDICES

- Appendix 1 - Special Conditions of Contract
- Appendix 2 - Completion schedule (bar chart)
- Appendix 3 - Performance Security.
- Appendix 4 - Price Schedule.
- Appendix 5 - Guaranteed Technical Particulars
(Other documents if required shall be added here)

**Appendix 3 - Form of Performance Security
Bank Guarantee**

(To be stamped in accordance with Stamp Act)
(The non-Judicial Stamp Paper should be in the name of issuing Bank)

Bank's Name:
Address of Issuing Branch or Office:
Email id and phone no for correspondence:

Beneficiary: Managing Director, AEGCL
Name and Address of Purchaser

Bid Security No.:

WHEREAS _____ [*name and address of Contractor*] (hereinafter called "the Contractor") has undertaken, in pursuance of LoA No. _____ dated _____ to execute _____ [*name of Contract and brief description of Works*] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized/scheduled bank for the sum specified therein as security for compliance with its obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ [*amount of Guarantee*] _____ [*in words*], such sum being payable in the currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [*amount of Guarantee*] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

BG expiry date:
BG clam date:

Bank's seal and authorized signature(s)

NOTE

1. *All italicized text is for use in preparing this form and shall be deleted from the final document. An amount is to be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract.*
2. *This guarantee shall be valid upto 30 days beyond the Warranty Period as per the Contract.*
3. *For BG amount equal to or more than 50,000.00, BG should be signed by two bank officers to be valid.*

4. ***Address of the banker with email and phone number for correspondence with banker should be clearly mentioned. Any correspondence related to the BG with the banker shall be made to the address mentioned in the BG.***