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NIT No: AEGCL/DGM/BONG/T&TC/T-1/2026/177; Dated:13.10.2026

**Bidding Document
For**

Supply of 33kV Vacuum Circuit Breaker for GSS under Bongaigaon T&T Circle.

**DEPUTY GENERAL MANAGER
BONGAIGAON T&T CIRCLE
AEGCL, DHALIGAON**

**Tender Fee: ₹500/-
EMD: ₹33,000/-**

SECTION 1
INSTRUCTION TO BIDDERS

For and on behalf of the **Managing Director, Assam Electricity Grid Corporation Limited (AEGCL), the Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon-783385** invites tender from eligible firms/companies/contractors/manufacturers with sound technical and financial capabilities for the above work. A single stage two envelope procedure (Techno-Commercial and Price Bid) will be adopted for this tender.

1.1.0 INFORMATION TO BIDDER:

- a) NAME OF WORK: **Supply of 33kV Vacuum Circuit Breaker for GSS under Bongaigaon T&T Circle.**
- b) TENDER ADDRESS: **O/o the Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon 783385.**
- c) TENDER PAPER FEE: **₹500.00 in favor of the Managing Director, AEGCL payable at Guwahati.**
- d) BID SECURITY: **₹33,000.00 in favor of the DGM, Bongaigaon T&T Circle, AEGCL payable at Bongaigaon.**
- e) TIME OF COMPLETION: **180 days from the date of issue of work order.**

1.2.0 BIDDING PROCEDURE:

- a) All tenders shall have to be submitted in prescribed forms attached herewith eventually to be drawn up in the rules of AEGCL.
- b) Two different envelopes to be used as follows.
Envelope-1: Bid document signed by bidder on all pages, Earnest Money, Techno-commercial data of the Bidder, GTP and other necessary documents must be enclosed.
Envelope-2: Price Bid
- c) All tenders shall have to be submitted under sealed & signed covers super-scribing the Tender Notice No and name of the work completely and clearly on the top of the cover.
- d) All tenders shall have to be submitted on or before the last date and time of submission of tenders either by post or in person.
- e) If Bidders desire to submit their Bid by post, at their own expenses, it should be posted well in advance so as to ensure that their tenders reach the office of the tendering address on or before the specified date and time of submission of tender. AEGCL will not take any responsibility for loss, damage, tempering or delay of tenders sent by post.
- f) Bidder submitting Bid in person should submit their Bid in the tender box during the working hours on the last date and time of submission of tender.
- g) Tender will be rejected if submitted beyond the aforesaid time and date.
- h) Tenders or their authorized representatives may remain present during the opening of the tenders.
- i) Only Price Bid of responsive Techno-Commercial Bidders will be opened.
- j) AEGCL has the right to cancel the tender at any moment, without assigning any reason thereof. Bidder will not be entitled to claim any expenses and AEGCL will not be responsible for any costs or expenses incurred on the preparation and submission of the Bids.
- k) Bidders may obtain further information from the office of the Deputy General Manager, Bongaigaon T&T Circle, AEGCL, Dhaligaon-783385 For the purpose of preparation of their bid.

1.3.0 Key Dates:

Tender Start Date	12.00 Hrs. of	14.10.2026
Submission Start Date	12.00 Hrs. of	15.10.2026
Tender End Date	12.00 Hrs. of	05.11.2026
Tender Opening Date	14.00 Hrs. of	06.11.2026

1.4.0 Validity of Bids

- 1.4.1. Bids shall remain valid for the period of 180 days after the bid submission deadline date prescribed by AEGCL. In exceptional circumstances, prior to the expiration of the bid validity period, AEGCL may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing.

1.5.0 Bid Security:

- 1.5.1. All bids must be accompanied by a bid security amounting to **₹33,000.00 only** in the form of Fixed Deposit/Demand Draft/Banker Cheque from any Nationalized Bank payable at Guwahati in favour of the **DGM, Bongaigaon T&T Circle, AEGCL.**
- 1.5.2. Any bid not complying with the terms and conditions shall be rejected by the employer as non-responsive.
- 1.5.3. The bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.
- 1.5.4. The bid security of unsuccessful Bidders shall be returned as promptly as possible after the successful bidder has been allotted the work.
- 1.5.5. The bid security may be forfeited:
 - a) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder.

- b) If the successful Bidder fails to sign the Contract agreement within 10 (ten) days from issue of the letter of intent/detailed orders and furnishing performance security.

1.6.0 Eligibility Criteria

- 1.6.1. A Bidder may be a private entity or a government-owned entity.
- 1.6.2. No JV (Joint Venture) is allowed for this bid.
- 1.6.3. A Bidder, and all partners constituting the Bidder, shall have Indian nationality. A Bidder shall be deemed to have the nationality of a country if the Bidder is a national or is constituted, incorporated, or registered and operates in conformity with the provisions of the laws of Republic Of India. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related services.
- 1.6.4. **Bidder may be manufacturer of the offered products or a firm/company having authorization from a manufacturer. In case the bidder is not a manufacturer of the offered product(s), bidder must submit manufacturer's authorization using for that purpose Form-MA provided in Section-2 Bidding forms.**
- 1.6.5. A person, Firm or any other prospective bidder who is involved in fraud, unethical practices or barred from submitting bids by AEGCL or any sister concerns of AEGCL i.e. APDCL & APGCL will not be allowed to participate in the bids. If such cases are detected after submission of the bids, in later stages of the bidding process, then such bids will be rejected outright.
- 1.6.6. To be qualified for the bid the bidder must compulsorily meet the following minimum criteria specified in (i), (ii) and (iii) below.
- Bidder OR if the bidder is not a manufacturer, offered product's manufacturer must have least 10 (ten) years of experience in design, manufacture and supply of 33kV or above rating Vacuum Circuit Breaker. Bidder shall submit filled up form EXP-1 along with copy of past orders to establish its eligibility.
 - The Bidder or if the Bidder is not a manufacturer, his supplier must have designed, manufactured, type tested, supplied 33kV or above rating Vacuum Circuit Breaker which are in successful operation for at least 05 (Five) years. The Bidder shall submit filled up form EXP-2 to furnish a list of such works executed along with Client's Recent Performance Certificates to substantiate the requirement. Performance certificates should not be older than three (03) years as on the date of opening of the technical bid.
 - Bidder must have experience of executing a supply order of electrical items in a Transmission/Generation/Distribution utility in past five years. Bidder shall submit filled up form EXP-3 along with copy of past orders and completion certificate/delivery Challan with customer signature to establish its eligibility.

1.7.0 Financial Capability:

- 1.7.1. **Bidder will require to submit along with the bid the audited balance sheets, IT return and other legal financial statements acceptable to AEGCL, for the last 3 (three) years to demonstrate the current soundness of the Bidders financial position and its prospective long-term profitability. As a minimum, an Applicant's net worth calculated as the difference between total assets and total liabilities should be positive.**
- 1.7.2. **Average Annual Turnover:** Minimum average annual turnover required are as follows and will be calculated as total certified payments received for contracts in progress or completed within the last 3 (Three) Years.

(a) INR 6,00,000.00

1.8.0 Experience:

- 8.1.1.1.1. Three completed similar works** costing not less than an amount equal to **40% of the estimated cost, or**
- 8.1.1.1.2. Two completed similar works** costing not less than an amount equal to **50% of the estimated cost, or**
- 8.1.1.1.3. One completed similar works** costing not less than an amount equal to **80% of the estimated cost**
- 1.8.2. The bidders who have already been awarded works from this end but not completed in time and also applied for time extension for several times, they are not eligible for participating in this tender process.
- 1.8.3. **List of contracts for similar Works and services executed in the past two years with copies of LoAs and execution status of each contract supported by client's certificate.**
- 1.8.4. **Audited Annual Accounts certified by CA of the company for the last three (3) years (in case of companies) or IT Return duly acknowledged by the tax department for the last three (3) years (in case of bidders other than companies)**
- 1.8.5. **Copies of Professional Tax Clearance Certificate, PAN and/or TAN Card, Registration Certificate (Form GST REG - 06) issued under Goods and Services Tax Laws.**
- 1.8.6. **Performance Certificates of the manufacturers of supply of similar nature needs to be submitted along with the techno-commercial bid.**
- 1.9.0 Evaluation Criteria:**
- 1.9.1. Techno-Commercial Evaluation will be done on the basis of Work experience and Financial Capability submitted by the bidder.
- 1.9.2. Price Bid of only **Responsive Techno-Commercial Bidders** will be opened.

- 1.9.3. **Arithmetical Error**, if observed while in Price Bid evaluation, same will only be corrected.
- 1.9.4. Arithmetic Errors, in the Price Bid will be rectified on the following basis:
- If there is any discrepancy between the unit rate and the total cost that is obtained by multiplying the unit rate and quantity, the unit rate shall prevail and the total cost will be corrected unless in the opinion of AEGCL there is an obvious misplacement of the decimal point in the unit rate, in which case the total cost as quoted will govern and the unit rate corrected. If there is discrepancy between the total bid amount and the sum of total costs, the sum of total costs shall prevail and the total bid amount will be corrected.
 - The amount stated in the Price Bid shall be adjusted by AEGCL in accordance with the above procedure for the correctness of errors and shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, its bid will be rejected, and the bid security may be forfeited.

1.10.0 Clarification

- 1.10.1. A prospective Bidder requiring any clarification of the Bidding Document shall contact the AEGCL in writing at the AEGCL's address indicated in the BDS or raise his enquiries prior to 3 (three) days of closing of the bid. The Employer will respond to any request for clarification, provided that such request is received no later than three (3) days prior to the deadline for submission of bids. The AEGCL's response shall be in writing with copies to all Bidders who have acquired the Bidding Document including a description of the inquiry but without identifying its source. Should AEGCL deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so.
- 1.10.2. The Bidder is advised to visit and examine the site where the work is to be Carried out and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for the provision of plant and services. The costs of visiting the site shall be at the Bidder's own expense.
- 1.10.3. The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

1.11.0 Amendment of Bidding Document

- 1.11.1. At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing addenda.
- 1.11.2. Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from AEGCL.
- 1.11.3. To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, AEGCL may, at its discretion, extend the deadline for the submission of bids.

1.12.0 Preparation of Bids by the Bidders:

1.12.1. Cost of Bidding

The Bidder shall bear all costs associated with the preparation and submission of its Bid, and AEGCL shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

1.12.2. Language of Bid

The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and AEGCL, shall be written in the English language.

1.12.3. Bid Prices and Discounts

- 12.3.1. **Bidders shall quote price inclusive of GST and all other applicable taxes. No extra calculation for discounts or other taxes will be done during evaluation.**
- 12.3.2. Unless otherwise specified in the Bid Document and/or AEGCL's Requirements, bidders shall quote for the entire plant and services on a —single responsibility basis such that the total bid price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the bidding document in respect of the including procurement and subcontracting (if any), delivery, construction, installation and completion of the Work. This includes all requirements under the Contractor's responsibilities for completing the work and where so required by the bidding document, the acquisition of all permits, approvals and licenses, etc.; the operation, maintenance and training services and such other items and services as may be specified in the Bidding Document, all in accordance with the requirements of the General Conditions. Items against which no price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed to be covered by the prices for other items.
- 12.3.3. Bidders are required to quote the price for the commercial, contractual and technical obligations outlined in the bidding document.
- 12.3.4. GST, Royalty and all other taxes (as applicable) payable on the work should be shown separately.
- 12.3.5. Taxes like income tax etc. which need to be deducted at source as per the prevailing law of the land, will be deducted at source.

12.3.6. The prices shall be FIXED & FIRM.

The Bided Price should on Fixed Price basis, prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.

1.13.0 Bid Evaluation Process:

1.13.1 AEGCL will carry out a detailed evaluation of the bids in order to determine whether the bidders are qualified and whether the technical aspects are substantially responsive to the requirements set forth in the bidding documents. In order to reach such a determination, AEGCL will examine the information supplied by the Bidders and other requirements in the bidding documents, taking into account the following factors:

(a) Qualification

- i. the determination will take into account the Bidder's financial and technical capabilities and past performance; it will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to relevant Clauses as well as such other information as AEGCL deems necessary and appropriate; and
- ii. an affirmative determination will be a prerequisite for AEGCL to continue with the evaluation of the proposal; a negative determination will result in rejection of the Bidder's bid.

(b) Technical

- i. overall completeness and compliance with AEGCL's Requirements; the technical merits of materials and equipments offered and deviations from AEGCL's Requirements; suitability of the facilities offered in relation to the environmental and climatic conditions prevailing at the site; quality, function and operation of any process control concept included in the bid;

(c) Commercial

- ii. Deviations and omissions from the contractual and commercial conditions as identified in the Bid.
- iii. compliance with the time schedule called for in the Bidding Document and evidenced as needed in a milestone schedule provided in the bid; and
- iv. the functional guarantees of the facilities offered against the specified performance criteria of the plant and equipment.

1.13.2 The following methodology will be practiced for identification and treatment of the **Abnormally Low Bids (ALB)** in this tender process of AEGCL:

(a) Identification: For the identification of the Abnormally Low Bids, two approaches as applicable shall be adopted:

(i) Absolute Approach when there are fewer than five substantially responsive bidders and if the bid price is 20% or more below AEGCL's cost estimate then AEGCL's tender evaluation committee should clarify the Bid price with the bidder to determine whether the Bid is abnormally low.

(ii) Relative Approach is a statistical comparison method which will be applied when there are more than five nos. of substantially responsive bids. A potential ALB is identified where the low Bid is more than one standard deviation below the average of substantially responsive bids received.

In this approach first the Average bid price is determined and then by deducting the standard deviation from the average bid price, potentially ALB may be determined.

(b) In case of ALB, the tender evaluation committee of the respective tenders shall undertake the following three stage review which are as follows:

(i) Identify ALB as per the step mentioned in Clause No.1.13.2.(a).(i) and 1.13.2.(a).(ii) whichever is applicable.

(ii) Clarify and analyse the bidders resource inputs and pricing, including overheads, contingencies and profit margins. In that respect committee may seek the reference of the guidelines of World Bank, AIIB, ADB etc.

(iii) Decide whether to accept or reject the tender.

Additional Performance Security in case of acceptance of ALB:

If any abnormally low bid is accepted under point no. (b) (iii), after taking of additional performance security as per the

assessment of the committee, however the total performance security should not have to exceed 20% of the total contract value. The additional performance security shall be treated as part of the original performance security and shall be valid for a period coextensive with the applicable defect liability period of the contract.

Non submission of the additional performance security shall constitute sufficient ground to rejection of the bid and similar assessment shall be initiated for the next ranked bidder identified as ALB.

1.14.0 Preliminary examination of bids and determination of responsiveness:

- i. Prior to the detailed evaluation of bids, AEGCL will examine the bids to determine whether they are complete and all documents as per relevant Clauses are provided or not, whether the documents have been properly signed, whether the required bid security is included, and whether the bids are generally in order and provides any clarifications and/or substantiation that AEGCL may require.
- ii. A substantially responsive bid is one which conforms to all the terms, conditions and requirements of the bidding documents deviation or reservation and includes the amendments and changes, if any. AEGCL may waive any minor non-conformity or irregularity in a Bid which does not constitute a material deviation or reservation, provided such deviation or reservation does not (i) affect in any substantial way the scope, quality or performance of the Works; (ii) limit in any substantial way, inconsistent with the bidding document, AEGCL's rights or bidder's obligations under the contract; or (iii) whose rectification would affect unfairly the competitive position of other bidder's presenting substantially responsive bids.
- iii. Any bids found to be non-responsive for any reason or not meeting the minimum levels of the performance or other criteria specified in the bidding documents will be rejected by AEGCL and not included for further consideration.

1.15.0 Corrupt or Fraudulent practices

It is required that bidders/suppliers/contractors observe the highest standard of ethics during the procurement and execution of the contracts. In Pursuance of this Clause AEGCL;

defines, for the purposes of this provision, the terms set forth below as follows:

- i. "corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and
- ii. "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;
 - a) will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
 - b) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract by AEGCL if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

1.16.0 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.

1.17.0 Late Bid:

- i. Any bid submitted after the due date and time will be rejected without any prejudice.
- ii. AEGCL will not be responsible for any Postal and/or Courier delay in delivering the bid. The same received after the scheduled closing date and time will be rejected without any prejudice.
- iii. Bidding through EMAIL will not be accepted.

1.18.0 Payment Terms:

- i. No advance payment shall be made in this contract.

- ii. No claim for interest shall be entertained by AEGCL.
- iii. The price is firm and no price variation shall be applicable.
- iv. First & Final bill for the supply will be entertained only after 100% completion of the work.
- v. Payment will be made by the DGM, Bongaigaon T&T Circle, AEGCL, Dhaligaon.

1.19.0 Performance Security Deposit:

Further, Performance Guarantee of 10% of total contract value for of the project in the form of Bank Guarantee (BG) from a nationalized or scheduled Bank of RBI for a period of 60 (sixty) months from the date of supply is to be submitted with acceptance of LOI and before signing of the Contract Agreement. Moreover, before one month (i.e. 30 days) of expiry of the BG, renewal is to be done by the contractor if required, otherwise revocation would be done by AEGCL within claim period. BG is to be submitted strictly as per prescribed format of the AEGCL. BG should remain valid up to 60 (sixty) days beyond warranty/ Performance Guarantee Period. Duly pledged in favour of the **MD AEGCL**, and such security deposit shall be valid up to 30 days beyond the warranty period of 12 (twelve) months.

Please note that, if the selected Bidder / Firm fails to furnish the requisite performance security as stated above and sign the contract within the stipulated period, LOI/work order issued in favour of the Bidder/ Firm will automatically be Null & void.

1.19.1. If the bidder / firm fails or neglects to observe and perform any of his obligations under the contract, Purchaser (AEGCL) shall have the right to forfeit either in full or in part at his absolute discretion, the security deposit furnished by the Contractor/Firm.

1.19.2. No interest shall be payable on such deposits.

1.20.0 Liquidated Damage:

The date of completion of work shall be deemed to be the essence of the contract and shall not be completed no later than the date specified in the contract. In case of failure to complete the work within the stipulated period AEGCL shall be entitled to:

I. Recover and amount at the rate of 1% (One Percent) of the Contract Price per week or part thereof of delay, subject to maximum of 10% (Ten Percent) of the contract price as liquidated damage to AEGCL. 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.

II. To complete the balance work giving notice to the contractor/firm and to recover any extra expenditure incurred thereby for having to complete the work at a higher price at the risk and responsibility of the contractor/firm.

1.21.0 Warranty:

- The supplier warrants that all 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.
- The supplier further warrants that the goods shall be free from defects arising from any act or omission of the supplier arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination. The supplier will provide warranty for the works executed by them.
- If during the period of warranty any defect is found, the purchaser shall give notice to the supplier stating the nature of defect together with all available evidence thereof, promptly following the discovery thereof. The purchaser shall afford all reasonable opportunity for the supplier to inspect such defects.
- If having been notified, the supplier fails to remedy the defect within a period of 15 (Fifteen) days, the purchaser may, following notice to the supplier, proceed to do such work, and the reasonable costs incurred by the purchaser in connection therewith shall be paid to the purchaser by the supplier or may be deducted by the purchaser from any amount due to the supplier or claimed under the Performance Security.
- The term period of warranty shall mean the period of **12 (Twelve) months from the date of supply**. The successful bidder should warrant the free replacement of any damaged/malfunctioning equipment and its accessories during the warranty period.

1.22.0 Performance Guarantee / Defect Liability Period

The materials and entire construction/work is to be guaranteed against defective design, materials and workmanship and for satisfactory performance for a period of 365 days from the date of final acceptance of the completed work.

1.23.0 Defect after completion of work

- i. The contractor shall make good at his own cost and to the satisfaction of AEGCL all defects, or other faults which may appear during the defect liability period / warranty period.
- ii. In default, AEGCL may employ and pay other agency or persons to amend and make good such damages. Losses and expenses consequent thereon or incidental thereto shall be made good and borne by the contractor, failing which the same shall be recoverable from the payment due to the contractor and performance guarantee. In the event of amount due and performance guarantee being insufficient, the balance amount will be recovered from the contractor from the amount due or retained for other works executed in AEGCL.

1.24.0 Variation and Deviation of Quantity

The Tendered rates shall hold good for any variations in the Tendered quantities for completion of work on account of any modification in the bill of quantities or design or specification.

1.25.0 Deletion of work

AEGCL and its representative have the right to delete or decrease any item or quantity from schedule of quantity at its discretion if deemed necessary. No claim by the contractor will be admissible for this deletion or deduction of Item/quantity from schedule of quantity.

1.26.0 Use of materials arranged by the Board

If any materials supplied by AEGCL are found to be misused or wasted due to negligence by the contractor comes to the notice of the Board then the contractor shall be liable to pay compensation to the Board as may be decided by the Board.

1.27.0 Labour Legislation

- i. The contractor shall comply with the provisions of the Apprentices Act 1961, payment of Wages Act 1936, Minimum Wages Act 1948, Employees Liability Act 1938, Workmen's Compensation Act 1923, Industrial Disputes Act 1947, Maternity Benefits Act 1961, and the Contract Labour (Regulation and Abolition) Act 1970, Provident Fund Act or the modifications there of or any other laws relating thereto and the rules made there under from time to time.
- ii. The contractor shall indemnify and keep indemnified AEGCL against payments to be made under and for the observance of the laws aforesaid and the Contractors' Labour Regulations without prejudice to his right to claim. The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.
- iii. The contractor shall not employ persons below the age of 18 years as labours for the erection work.
- iv. The contractor shall at his own expense arrange for all the safety provisions for the safety of all workers and employees directly or indirectly employed on the work by the contractor. The contractor shall provide adequate safety devices like head protective gears, belt etc, to his labours while executing the erection work.
- v. The contractor shall be fully responsible at his own expenses for compliance all the labour regulations and rules to be observed by them. The contractor shall fully indemnify AEGCL against any action by the state and/or Central Government for any default or alleged default by the contractor for violation of any of such rules and regulations. If, due to any default of the contractor, AEGCL has to incur any expenditure for compliance of contractor the rules and regulations or for any other reason connected with such default, AEGCL shall be entitled to recover from the Bidder all such expenditure in full from any payment due to the contractor.

1.28.0 Eligibility of Contractor employees

The Contractor shall employ in and about the Execution of the works only such persons as are skilled and experienced in their several trades. A list of such personal should be submitted in corresponding Appendix.

1.29.0 Insurance

The Contractor shall arrange for any pay/cost of personnel accident insurance, medical treatment etc. in respect of their employees assigned to the works for all time and shall govern by Law of the land.

1.30.0 Damage to person and property

- i. The Contractor shall be responsible for all injury to the work or to workmen, to persons, animals or things and for all damages to the structural and/or decorative part of property which may arise from the operations or neglect of contractor or its employees, against whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this Contract. The Contractor shall at his cost effect the

insurance necessary and indemnify AEGCL entirely from all responsibility in this respect. The scope of insurance is to include loss or damage to the work and workmen due to carelessness, accident including fire, earthquake, floods, all medical expenses, compensation to be borne in the event of accident etc., damage or loss to the Contract itself till this is made over a complete state. Insurance is compulsory and must be affected from the very initial stage and should cover the entire contract period till handing over of complete works. The Contractor shall also be responsible for anything which may be excluded from damage to any property arising out of incidents, negligence or defective carrying out of this Contract.

- ii. AEGCL shall be at liberty and is hereby empowered to deduct the amount of any damages, compensations, costs, charges and expenses arising or occurring from or in respect of any such claim or damages from any sums due or to become due to the Contractor.

1.31.0 Force Majeure Condition:

Force Majeure condition shall be considered as any circumstances beyond reasonable control of the party claiming relief, including but not limited to strikes, lockout, civil commotion, riot insurrection, hostilities, mobilization, war, fire, flood, earthquake, malicious damage or accidents could entitle contractor to extension time. Any such delay should be intimated within 10 (ten) days from the beginning of such delay to consider/approved, any claim without prior information may not be considered under force Majeure.

1.32.0 Settlement of Dispute and Arbitration:

Any dispute arising out of the contract will be first settled bilaterally between AEGCL and Contractor. In case, dispute cannot be settled bilaterally, it will be referred to arbitration to be by an arbitrator appointed by AEGCL. The contractor shall not stop the work during settlement of any dispute. All disputes shall be subjected to the jurisdiction of District Court of Kamrup District.

1.33.0 Scope of Work:

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

- a) Design, Manufacture, Supply, delivery of reputed make gang operated outdoor Vacuum Circuit Breaker for GSS under Bongaigaon T&T Circle.
- b) Loading at manufacturer's works, transportation and delivery at the GSS site, including unloading at destination site.
- c) Arrangements of any permits required for transportation and movement of supplied materials. However, AEGCL shall assist as far as practicable in the process.
- d) Freight & Transit insurance and insurance during storage at site shall be in the scope of the contractor.

1.34.0 Plea of Custom:

The plea of "Custom" prevailing will not on any account be permitted as an excuse for infringement of any of the conditions of contract or specifications.

The contract shall not be vitiated by any inadvertent omissions of any kind in the surveys, information, specifications, drawings or schedule of quantities.

1.35.0 Final Acceptance and Taking Over:

When the term of contract shall be fully complied with completing all works as per approved drawing and technical specifications to the satisfaction of the Department for a period as applicable, the Contractor/Firm shall have to submit completion certificate to the office of the undersigned after the satisfactory completion of the work through the executing authority for finalization of the work/payment as well as for the final acceptance and taking over the completed work and to issue the necessary certificate thereof.

1.36.0 Right to Reject:

AEGCL reserves the right to reject any or all the bids without assigning any reason thereof and the AEGCL further reserves the right to split up the work order in favour of more than one Contractor. The AEGCL also reserves the right to reject the lowest or any other price without assigning any reason. The clauses which are not appearing in this document (bid) will be as per The General Condition of Supply and Erection 2009 of AEGCL. The General Condition of Supply and Erection 2009 of AEGCL is available in the AEGCL's website www.aegcl.co.in under Acts, Rules and Policies.

SECTION 2
BIDDING FORMS

Form-1

Letter of Technical bid (On Bidders letterhead)

To,

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

Sub: Submission of Tender.

Ref:

1. NIT No:
2. Name of work:

Sir,

Having examined the terms & conditions, technical specifications, detailed items of work etc. as well as acquainting myself/ourselves with site of work, surroundings to get the required materials etc. I am/we are to submit herewith my/our tender for the above-mentioned work. My/our rates are quoted as per the specification laid down in the schedule of items of work.

I/We clearly understand that all materials, tools and plants, machineries, labours, testing of material, storage haulage etc. required in the work shall have to be arranged by me/us from my/our own resources in the events of allotment of the work to me/us.

I/We also clearly understand that in the event of acceptance/approved of my/our tender, the work shall have to be executed strictly as per specifications and the same shall have to be completed in all respects within the stipulated time failing which I, am/we are liable to be penalized as per rules laid down in tender document as well as agreement thereof.

Form-2

PROFILE OF THE BIDDER (Document checklist)

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

SL. No.	Document to be submitted	Submitted (Yes/No)
1.	Letter of technical bid (Form-1)	
2.	Notarised Power of attorney for the person signing the tender	
3.	EMD payment receipt	
4.	Bidders company/firm registration certificate/certificate of incorporation	
5.	Manufacturer's authorization for Battery Bank and Battery Charger (Form MA) (Applicable for bidder who is not manufacturer of offered product)	
6.	GST registration	
7.	Filled up Form ELI-1	
8.	Filled up Form LIT	
9.	Filled up Form FIN-1	
10.	Audited Balance sheet for last three years	
11.	Bank solvency certificate/ other supporting document	
12.	Filled up Form EXP-1	
13.	Filled up Form EXP-2	
14.	Filled up Form EXP-3	
15.	Order/Contract copies establishing supplying offered product in past 6.6	
16.	Performance certificate of offered product as per clause 6.6 (ii)	
17.	Order/Contract copies establishing bidders experience in State/Central Utilities	
18.	GTP and drawings as per the BoQ	
19.	Type test reports	
20.	Completion schedule bar chart	
21.	Additional documents if any	

Form-3

Manufacturer's Authorization

(To be submitted in Manufacturer's Letterhead)

Bid No.:

To

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

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 1.21.0** of the bidding document, 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. We also hereby declare that, we will furnish the Performance Guarantee in accordance with **Clause 1.19.0**.

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	Bidders name and registered address	
2	Bidders authorised representative, designation and contacts	
3	GST registration no.	
4	MSME/SSI registration Udyog Adhaar/NSIC registration available?	Yes/No
5	EMD exemption claimed	Yes/No

(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 – 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 – EXP-1

Bidder must fill this form to establish eligibility as per clause 1.6.6(i)

Sl. No.	Customer name	Contract No. and date	Work order value	Contractor/supplier	Brief description of work

Note: Order/contract copies are to be submitted as supporting document.

(Signature and common seal)

Name:

Designation:

Date:

Form – EXP-2

Bidder must fill this form to establish eligibility as per clause 1.6.6(ii)

Fill up one (1) form per contract.

Contract of Similar Size and Nature			
Contract No. of.	Contract Identification		
Award Date		Completion Date	
Role in Contract	☐ Contractor		☐ Subcontractor
Total Contract Amount	(Rupees)		
Purchaser's Name Address Telephone/Fax Number E-mail			
1. Brief Specification of Goods supplied			
2. Date of commissioning.			
Attached are copies of the following original documents.			
☐ 1. Type Test Certificates.			
☐ 2. Recent performance certificates (as per clause 1.6.6 (ii))			
☐ 3. Copy of the Contract Document/ Work order			

(Signature and common seal)

Name:

Designation:

Date:

Form – EXP-3

Bidder must fill this form to establish eligibility as per clause 1.6.6(iii)

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

Note: Following documents are to be submitted as supporting document:

- i) Relevant order/contract copies.
- ii) Completion certificate or Delivery Challan with customer signature.

(Signature and common seal)

Name:

Designation:

Date:

Section - 3

Purchaser's Requirements

3.1.0 SCOPE

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

- a) Design, Manufacture, Supply, delivery of reputed make gang operated outdoor Vacuum Circuit Breaker for GSS under Bongaigaon T&T Circle.
- b) Loading at manufacturer's works, transporation and delivery at the GSS site, including unloading at destination site.
- c) Arrangements of any permits required for transportation and movement of supplied materials. However, AEGCL shall assist as far as practicable in the process.
- d) Freight & Transit insurance and insurance during storage at site shall 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: TECHNICAL PARTICULARS OF 33KV OUTDOORTYPE PORCELAIN CLAD VACUUM CIRCUIT BREAKER (PCVCB)

3.3.1. INTRODUCTION:

The circuit breakers should be complete in all respects with insulators, bimetallic connectors, interrupting chamber, operating mechanism control cabinet, interlocks, auxiliary switches indicating devices, supporting structures, accessories, etc., described herein and briefly listed in the schedule of requirements. The scope of supply shall also include necessary special tools and plants required for erection as indicated, if any.

3.3.2. STANDARDS:

The circuit breaker shall conform in all respects to the requirements of latest issue of IS/IEC specifications except for modifications specified herein. The equipment manufactured according to any other authoritative standards which ensure an equal or better quality than the provision of IS/IEC specifications shall also be acceptable. The salient point of difference between the proposed standard and provision of this specification shall be clearly brought out in the tender. A copy of English version of such specifications shall be enclosed with the tender.

The list of standards mentioned in this specification and to which the circuit conform is given below:

1.	IEC-62271-100	High Voltage A.C. Circuit Breakers
2.	IEC-60137	Bushing for alternating Voltages above 1000 volts
3.	IEC-60071	Insulation Co-ordination
4.	IEC-60694	Common clauses for high voltages switchgear and control gear standards
5.	IEC-60815	Specification for Creepage distances
6.	IS-13118	Specifications for high voltage alternating current circuit breakers

7.	IS-2099	High voltages porcelain bushings
8.	IS-4379	Identification of the contents of industrial gas cylinders
9.	IS-3072	Installation and maintenance of switchgear
10.	IEC-60267	Guide for testing of circuit breakers with respect to out of phase switching
11.	IS-802	Code of practice for use of structural steel in overhead transmission lines
12.	IEC-17A Study Group Dec.1981	Sealing of interrupters / breakers
13.	IS-1554	PVC insulated cables upto and including 1000 volts
14.	IS-5	Colors for ready mixed paints and channels
15.	Ref.Standard IES	Internal Electro-Technical Commission Bureau Central Data Commission, Electro Technique International, 1, Ruede Verembe, Geneva, Switzerland
16.	IS	Indian Standard Bureau of India Standard, Manak Bhawan 9, Bahadurshah Zafar Marg, New Delhi – 110 002, India

3.3.3. SERVICE CONDITIONS

CLIMATIC CONDITONS

The breakers and accessories to be supplied against this specification shall be suitable for satisfactory continuous operation as per section-I.

AUXILIARY POWER SUPPLY

Auxiliary electrical equipment shall be suitable for operation on the following supply system.

- a) Power Devices (like motors) : 415 V, 3 phase 4 wire 50 hz, neutral grounded AC supply
- b) DC Alarm, Control and Protective Devices : 110V DC, ungrounded 2 wire
- c) Lighting : 240 V, single phase 50 Hz AC supply

Bidder's scope includes supply of interconnecting cables, terminal boxes, etc. The above supply voltage may vary as indicated below and all devices shall be suitable for continuous operation over the entire range of voltages

- i) AC Supply Voltage + 10% -15%
Frequency $\pm$ 5%
- ii) DC Supply -15% to + 10%

3.3.4. GENERAL REQUIREMENT OF 36 KV OUTDOOR VACUUM CIRCUIT BREAKERS

3.3.4.1. The vacuum type circuit breaker shall have vacuum interrupters, designed to provide a long contact life at all currents upto rated making and breaking current during switching operation. The vacuum interrupters sealed for life shall be encapsulated by porcelain insulators for outdoor installation requirement of the circuit breakers. The offered breakers shall be suitable for outdoor operation under climatic conditions specified without any protection from sun, rain and dust storm.

3.3.4.2. The vacuum interrupters of each phase shall be housed in a separate porcelain insulator. The three identical poles shall be mounted on a common base frame and the contact system of three poles should be mechanically linked to provide three pole gang opening/closing for all type of faults.

3.3.4.3. The offered equipment shall be practically maintenance free over a long period. All mechanical parts and linkages shall be robust in construction and maintenance free, over at least 10,000 switching operations, except for lubrication of pins/articulated joints at interval of 5 years or 5000 operations. Similar parts shall be strictly interchangeable without special adjustment of individual fittings. Parts requiring maintenance shall be easily accessible, without requiring extensive dismantling of adjacent parts.

3.3.4.4. The operating mechanism will be self-maintained and of proper operation endurance not less than the Mechanical life of circuit breaking unit. It shall be spring operated type described hereinafter.

3.3.4.5. The circuit breaker shall be supplied complete with all auxiliary equipment, meant necessary for the safe operation, routine and periodic maintenance. All internal wiring including those of spare auxiliary contacts shall be complete and wired upto terminal blocks.

3.3.4.6. The breaker shall be totally re-strike free under all duty conditions. The details of any device incorporated to limit or control the rate of rise of re-striking voltage across the circuit breaker contacts shall be stated.

3.3.4.7. The breaker shall be reasonably quiet in operation and the noise level shall not exceed 140 decibels.

3.3.4.8. The breaker shall be suitable for three phase re-closing operation.

3.3.4.9. An operation counter, visible from the ground level even with the mechanism housing closed shall be provided.

3.3.5. FIXED AND MOVING CONTACT:

The fixed and moving contacts of the breaker have to ensure permanent full contact during closing. All making and breaking contacts shall be hermetically sealed and free from atmospheric effects.

The main contacts should have low contact resistance.

3.3.6. RECOVERY VOLTAGE AND POWER FACTOR:

The circuit breaker shall be capable of interrupting rated power with recovery voltage equal to the rated maximum line to line service voltage at rated frequency and at a power factor equal to or exceeding 0.15. In case of multiple break circuit breaker, devices/method adopted for ensuring uniform voltage distribution across all the breaks shall be indicated and actual voltage distribution recorded during interruption tests shall be furnished with the bid.

3.3.7. RESTRIKING RECOVERY:

The complete data for the phase factor, amplitude factor, etc., for rate of rise of re-striking voltage shall be furnished in the tender.

3.3.8. LINE CHARGING INTERRUPTING CAPACITY:

The circuit breaker shall be designed so as to be capable of interrupting line charging currents without undue rise in the voltage on the supply side without re-strike and without showing sign of undue strains.

The maximum permissible switching over voltage shall not exceed 2.5 p.u. The guaranteed over voltage, which will not be exceeded while interrupting the rated line charging current for which the breaker is designed to interrupt shall also be stated. The results of the tests conducted along with the copies of the oscillographs to prove ability of the breakers to interrupt the rated as well as lower values of the line charging current shall be furnished with the tender.

3.3.9. TRANSFORMER CHARGING CURRENT BREAKING CAPACITY:

The breaker shall be capable of interrupting inductive currents, such as those occurring while switching off unloaded transformers, without giving rise to undue over voltage and without re-strikes. The maximum over voltage value, which will not be exceeded under such conditions shall be stated in the tender.

3.3.10. AUTOMATIC RAPID RECLOSING:

36 kV circuit breaker shall be suitable for 3 pole rapid re-closing.

3.3.11. BREAKING CAPACITY FOR SHORTLINE FAULTS:

The interrupting capacity of the breaker for short line faults shall be stated in the tender. The details of the test conducted for proving the capability of the breaker under a short line fault occurring from one phase to earth conditions shall also be stated in the tender. The rated characteristics for short line faults shall be in accordance with stipulation contained in clause 4.105 of IEC 62271-100.

3.3.12. TEMPERATURE RISE

The maximum temperature attained by any part of the equipment when in service at side and under continuous full load conditions and exposed to the direct rays of the sun shall not exceed the permissible limits fixed by IEC. When the standards specify the limits of temperature rise these shall not be exceeded when corrected for the difference between ambient temperature specified in the approved specification.

The limits of temperature rise shall also be corrected for altitude as per IEC and stated in the bid.

3.3.13. INSULATOR SUPPORTS AND HOUSING:

The porcelain used shall be homogenous, free from cavities and other flaws. The insulators shall be designed to have ample insulation, mechanical strength and rigidity for satisfactory operation under conditions specified above.. The puncture strength of bushing shall be greater than the flash over value. The design of bushing shall be such that the complete bushing in a self-contained unit and no audible discharge shall be detected at a voltage upto a working voltage (Phase Voltage) plus 10%. The support insulator shall conform to IEC-60137.

Minimum clearance between phases, between live parts and grounded objects shall be as per IS-3072-1975 and should conform to Indian Electricity Rules-1956. The minimum creepage distance for severely polluted atmosphere shall be 25 mm/KV as per IEC-815-1985.

The details for atmospheric pollution of the sub-stations where these breakers are to be installed shall be as per Clause 2.14.0 of this specification. The air clearance of bushing should be such that if the bushings were tested at an altitude of less than 1000 meters, air clearance would withstand the application of higher voltages (IS-2099- 1973 para 6.1). In order to avoid breakdown at extremely low pressures the support insulators should not be covered by moisture and conducting dust. Insulators should therefore be extremely clean and should have antitracking properties. Sharp contours in conducting parts should be avoided for breakdown of insulation. The insulators shall be capable to withstand the seismic acceleration of 0.3 g in horizontal direction.

3.3.14. OPERATING MECHANISM GENERAL REQUIREMENTS:

The operating mechanism shall be stored energy type and capable of giving specified duty of the breaker (sequence of opening and closing) as specified under O-0.3 sec-CO-3 min-CO. The breaker shall also pass the operational test which ascertains the capabilities of operating mechanism. The operating mechanism shall be capable to perform the following functions efficiently.

To provide means where the circuit breaker can be closed rapidly, at all currents from zero to rated making current capacity.

To hold the circuit breaker in closed position by toggles or latches till the tripping signal is received. To allow the circuit breaker to open without delay immediately on receiving tripping signal.

To perform auto re-closure duty cycle.

To perform the related functions such as indication, contacts, etc.

Operating mechanism should also be suitable for three phase auto re-close duty. The closing spring shall be automatically charged by motor immediately after closing operation. In case of failure of supply to the spring charging motor, the spring shall be chargeable by hand-crank.

TRIPPING/CLOSING COILS

The circuit breakers shall be provided with two trip coils and one closing coil per breaker. First trip coil shall be utilized for tripping the breaker on main protection fault detection. Whereas second trip coil shall be used to trip the breaker when first trip coil fails to trip the breaker and backup protection comes into operation and shall also be used to trip the breaker on command. Provision shall be given for trip circuit supervision both in pre close and post close condition of the breaker. All the breakers shall have provision for independent electrical operation of trip coils from local as well as remote through local/remote selector switch.

TRIP FREE FEATURES

When the breaker has been instructed to close by manual instructions using push button, the operating mechanism will start operating for closing operations. If in the mean time a fault has taken place, the relay provision shall be such that it should close the trip circuit simultaneously interrupting the live circuit of closing coil which has been instructed for close command.

The trip free mechanism shall permit the circuit breaker to be tripped by the protective relay even if it is under the process of closing. An anti-pumping device to prevent the circuit breaker from reclosing after an automatic opening

shall be provided to avoid the breaker from pumping i.e., anti pumping relay should interrupt the closing coil circuit.

CONTROLS

The circuit breaker shall be controlled by a control switch located in the control cabinet . The control arrangement shall be such as to disconnect the remote control circuits of the breaker, when it is under test. Local control devices, selector switch and position indicator shall be located in weather and vermin-proof cabinet with degree of protection not less than IP-55. The circuit breaker control scheme shall incorporate trip circuit supervision arrangement. Local/remote selector switch shall be provided for all breakers for selection of "Local" control/remote control.

Provision shall be made for local manual, electrical and spring controls. Necessary equipment's for local controls shall be housed in the circuit breaker cabinet of weather-proof construction. In addition to this, a hand closing device for facilitating maintenance shall also be provided.

Each circuit breaker shall have a mechanical open/closed and spring charge indicator in addition to facilities for provisions for semaphore indicators for breakers which are required for the mimic diagram in the control room. Lamps for indicating, 'close/open' position of the breaker shall also be provided.

The contact pressure spring and tripping spring shall be chargeable during closing operation to ensure the breaker is ready to open. Mechanically ON/OFF indicator, spring charged indicator and operation counter shall be provided on the front of the control cubicle. For tripping, the spring provided shall ensure the trippings

Mechanical indicator, to show the 'open' and 'close' position of the breaker shall be provided in a position where it will be visible to a man standing on ground with mechanism housing open. An operation counter, visible from the ground even with the mechanism housing closed, shall be provided. Electrical tripping of the breaker shall be performed by shunt trip coils.

Closing coil shall operate correctly at all value of voltage between 85% and 110% of the rated voltage. Shunt trip coils shall operate correctly under all operating conditions of the circuit breaker upto the rated breaking capacity and at all values of supply voltage between 85% and 110% of rated voltage. The variation in A.C. supply voltage shall be – 15%to +10% while variation in frequency shall be ± 3 . Working parts of the mechanism shall be non- corrosive material. Bearings which require grease shall be equipped with pressure type fillings.

Bearing pins, bolts, nuts and other parts shall be adequately pinned or locked to prevent loosening or changing adjustment with repeated operation of the circuit breaker. It shall be possible to trip the circuit breaker even in the event of failure of power supply.

Operating mechanism and all accessories shall be enclosed in control cabinet. A common marshalling box for the three poles of the breaker shall be provided, along with supply of tubing, cables from individual pole operating boxes to the common marshalling box, local.

3.3.15. SPRING OPERATED MECHANISM:

The motor compressed spring mechanism shall consists of a closing spring which is wound or compressed by an electric motor immediately after the breaker closes.

After the breaker has tripped, the tripping spring shall remain in the released position as long as the breaker is open, but the closing spring shall remain wound and ready for closing operation. The operating mechanism shall have all the necessary auxiliaries, apparatus for operation and supervision, like motor starter with thermal overload release, one closing coil, two trip coils, push button for local electrical operation, local/remote control selector switch, push button for direct mechanical tripping, auxiliary switches, anti puming contactors, operation counter, socket for inspection, lamp and heater with switch. Spring charging motor shall be standard single phase universal motor suitable for 220 volts supply.

Operating voltages for closing/tripping coils shall be 220/110/48/24 Volts DC or as per actual DC voltage available at existing substations which is to be verified by supplier after award of contract.

Operating voltages for heater elements shall be 220V AC 50 HZ. Other features of the spring operated mechanism shall be as follows.

- a) The spring operating mechanism shall have adequate energy stored in the operating to close and latch the circuit breaker against the rated making current and also to provide the required energy for tripping mechanism in case the tripping energy is derived from the operating mechanism.
- b) The mechanism shall be capable of performing the rated operating duty cycle of O-0.3Sec-CO-3 Min- CO...

- c) The spring charging motor shall be AC or DC operated and shall not take more than 30 sec., to fully charge the closing spring made for automatic charging. Charging of spring by the motor should not interfere with the operation of the breakers.
- d) The motor shall be adequately rated to carry out a minimum of one duty cycle. Also provision shall be made to protect the motor against overloads.
- e) In case of failure of power supply to spring charging motor, the mechanism shall be capable of performing one open-close-open operation.
- f) Mechanical interlocks shall be provided in the operating mechanism to prevent discharging of the closing springs when the breaker is already in closed position. Provision shall be made to prevent a closing operation to be carried out with the spring partially charged.
- g) Facility shall be provided for manual charging of closing springs.

3.3.16. CONTROL CABINET:

The switchgear operating mechanism, the control equipment such switch for closing and tripping the breakers, various control relays, antipumping device, a set of terminal blocks for wiring connections, MCB's for disconnecting the control auxiliary power supplies including relays, etc., shall be enclosed in a cabinet to be mounted on a suitable structure at a convenient working height at the end of the breaker in the outdoor switchyard. The supporting structure and the enclosure shall be capable of withstanding the typical tropical climatic conditions, change of ambient temperature, severe dust-storms, very high relative humidity those are prevailing at the site of location of switchgear.

3.3.17. ENCLOSURE:

The enclosure shall be made out of stretched level steel plates not less than 3 mm thick and of light section structural steel. It should be weather proof as well as vermin proof.

The enclosure shall provide protection against dust and foreign objects. Each cabinet section shall have full width and full-length hinged doors mounted on the front that swing fully open. The doors shall be provided with latches to securely hold it with the cabinet. Doors shall be of sturdy construction, with resilient material covering, fully perimetrically contacting the cabinet frame to provide dust protection and prevent metal to metal contact except at the latch points. Filtered ventilation shall be provided along with the rigid supports for control and other equipment, measuring instruments, mounting cabinet members and equipment shall not restrict easy access to terminal blocks for terminating and testing external connection or to equipment for maintenance.

All screws and bolts used for assembling and mounting wire and cable termination, supports, devices and other equipment shall be provided with lock washers or other locking devices. All metal parts shall be clean and free of weld splatter, rust and mill scale prior to application of double coat of zinc chromate primer which should be followed by an under coat to serve as base and binder for the finishing coat. The shade of exterior and interior shall be as per GTR. The mounting structure shall be galvanized and shall be as per IS-802-II-1978.

HEATERS

Suitable heaters shall be mounted in the cabinet to prevent condensation. Heaters shall be controlled by thermostat and shall be provided with ON/OFF switches and fuses. Heaters shall be suitable for 240 V AC supply voltage.

LIGHTING

At least one 13-watt CFL fixture and lamp working on 240 V 50 c/s AC supply shall be provided in each switchgear control cubicle section and shall be located suitably to provide adequate interior lighting of the cubicle. A single-pole 6 Amp. lighting switch shall be provided for each cubicle alongwith 5/15 amp.

The lighting and convenient outlet circuits shall be completely wired in conduit and terminated on cubicle terminal blocks.

WIRING AND CABLING

Unless otherwise specified control wire shall be stranded tinned copper switchboard wire with 1.1 kV PVC insulation conforming to the requirements of IS-1554.

All the control circuit and secondary wiring shall be wired completely and brought out to terminal block ready for external connections in the control cabinet. The cross-section of control wire shall not be less than 2.5 mm² copper (14 SWG).

All spare auxiliary contacts of the circuit breaker shall be supplied wired upto terminal block. Each terminal in terminal block shall be suitable for at least 2 x 2.5 mm² copper conductor.

All wiring termination on terminal blocks shall be made through lugs.

All wires shall be identified with non-metallic sleeve or tube type markers at each terminations.

Terminal blocks shall be made up of moulded non-inflammable plastic material with blocks and barriers moulded

integrally have white marking strips for circuit identification and moulded plastic covers. Disconnecting type terminal blocks will be provided.

GROUNDING

A ground bus of copper bar not less than 6 mm by 25 mm shall be provided for grounding the cabinet.

3.3.18. ACCESSORIES:

- a. Each circuit breaker assembly shall be supplied with the following accessories.
- b. Line and earthing terminals and terminal connectors.
- c. Control housing with:
One auxiliary switch with adequate number of auxiliary contacts, but not less than 20 nos. (10 NO + 10 NC) for each breaker. These shall be over and above the No. of contacts used for closing, tripping and re-closing and interlocking circuit of the circuit breaker. All auxiliary contacts shall be capable of use as "Normally closed" or "Normally open" contacts. Special auxiliary contacts required for the re-closing circuit if any, shall also be provided. There shall be provision, to add more auxiliary contacts at a later date, if required.
- d. Operation counter
- e. Position indicator (Close/Open)
- f. Necessary cable glands
- g. Fuses
- h. Manual trip device and local test push buttons
- i. Terminal blocks and wiring for all control equipment and
- j. Adequate number of heaters for continuous operation to prevent moisture condensation in the housing of operating mechanism
- k. Selector switch for local/remote control.

3.3.19 SURFACE FINISH

All interiors and exteriors of tanks, control cubicles and other metal parts shall be thoroughly cleaned to remove all rust, scales, corrosion, greases or other adhering foreign matter. All steel surfaces in contact with insulation oil, as far as accessible, shall be painted with not less than two coats of heat resistant, oil insoluble, insulating paint.

All metal surfaces exposed to atmosphere shall be given two primer coats of zinc chromate and two coats of epoxy paint with epoxy base thinner. All metal parts not accessible for painting shall be made of corrosion resisting material. All machine finished or bright surfaces shall be coated with a suitable preventive compound and suitably wrapped otherwise protected. All paints shall be carefully selected to withstand tropical heat and extremes of weather within the limits specified. The paint shall not scale off or wrinkle or be removed by abrasion due to normal handling.

All ferrous hardware, exposed to atmosphere, shall be hot dip galvanized.

3.3.20 GALVANISING

All ferrous parts including all sizes of nuts, bolts, plain and spring washers, support channels, structures, shall be hot dip galvanized conforming to latest version of IS:2629 or any other equivalent authoritative standard.

3.3.21 CABLE TERMINATION:

Suitable cable glands for terminating the multicore cable, shall be provided wherever required.

3.3.22 TERMINAL CONNECTIONS AND EARTH TERMINALS:

Each circuit breaker connected with incoming and outgoing feeders shall be provided with solderless clamp type connectors suitable for ACSR conductor.

Each circuit breaker pole and control cabinet shall be provided with appropriate number of grounding terminals and clamps for receiving ground connections.

Each circuit breaker pole and control cabinet shall be provided with appropriate number of grounding terminals and clamps for receiving ground connections.

3.3.23 INTERLOCKS

Necessary interlocks to prevent closing or opening of the breaker under low pressure of the contact spring and devices for initiating alarm shall be provided. The detailed interlocking scheme based upon single line diagram as applicable for the substation shall be provided by the contractor

Requirement of interlock shall be as given below:

Isolator should not be operated unless the associated breaker is in open position.

The circuit breaker shall close only after all isolators associated with it have been in closed position.

In case of double bus bar arrangement following additional requirement for interlocking shall be provided.

One bus bar selector isolator of any bay excepting the bus coupler bay shall close only when, The circuit breaker of corresponding bay is open and locked.

The other bus isolator of that bay is open.

When one bus isolator of any bay excepting the bus coupler bay is closed. The other shall close only when the bus coupler circuit breaker and both the bus isolators are closed.

Bus isolator of bus coupler bay shall operate only when the bus coupler breaker is open.

The bypass isolator of feeder shall close when the feeder circuit breaker and its adjoining isolators are closed.

3.3.24 EARTHING SYSTEM:

All switchgear enclosures should be bolted metal to metal and should carry the full earth return current. Connection between phases at the earthing points shall be dimensioned for carrying full earth return current i.e., actual service current not rated current.

3.3.25 VACUUM INTERRUPTER ASSEMBLY:

Each pole of the circuit breaker shall be provided with vacuum interrupter, one for each phase, hermetically sealed for life and encapsulated by ceramic insulators. The interrupter shall be provided with steel chromium arc chamber to prevent vaporized contact material being deposited on the insulating body. A further shield giving protection to the metal bellows shall also follow the travel of the moving contacts to seal the interrupter against the surroundings atmosphere.

It shall have high and consistent dielectric strength of vacuum unaffected by environment and switching operations. Bronzed joints should ensure retention of vacuum for life time. It shall have low and stable contact resistance due to absence of oxidation effects and shall ensure low power loss. The arcing voltage shall be low and minimum contact erosion.

3.3.26 GUARANTEED TECHNICAL PARTICULARS:

Guaranteed and technical particulars as called for in Section-II shall be furnished along with the tender.

Particulars which are subject to guarantee shall be clearly marked.

3.3.27 TESTS

TYPE TESTS

Each circuit breaker shall comply with requirements of type tests prescribed in IEC publication No. 62271-100 Short time and peak withstand current test .

Short circuit breaking capacity and making capacity.

Capacitive current switching test : Cable charging current breaking test (Up to less than or equal to 52 kV).

Dielectric test i.e., power frequency withstand and impulse withstand test

Temperature rise test.

Mechanical Endurance Test at ambient temperature. Measurement of resistance of the main circuit.

ROUTINE TESTS

Routine Tests as per IEC- 62271-100 shall be carried out on each breaker in presence of purchaser's representative at the manufacturer's expenses at his works except, where agreed to otherwise. All test reports should be submitted and should be got approved from the purchaser before despatch of the equipment.

SITE TESTS ON CONTROL AND AUXILIARY CIRCUIT

The following tests shall be conducted at site. Voltage tests on control and auxiliary circuit. Measurements of resistance of the main circuit. Mechanical Operation Tests.

3.3.28 NAME PLATE:

Equipment should be provided with name plate giving full details of manufacture, capacities and other details as specified in the relevant ISS or other specification stipulated.

3.3.29 TECHNICAL PARAMETERS OF 36KV CIRCUIT BREAKERS:

SL. NO.	DESCRIPTION	VALUES
1)	Rate voltage (KV rms)	36 KV
2)	Rated frequency (Hz)	50
3)	System neutral earthing	Solidly grounded system
4)	Type of arc quenching medium	Vacuum
5)	Rated normal current at site conditions (Amps)	1250 Amps
6)	Number of poles	3
7)	Installation	Outdoor type
8)	Temperature rise	As per IEC 56 (Table-4) Page-19
9)	Rated short circuit	
	a) Interrupting capacity at 36 KV	31.5 KA
	b) The percentage DC components	As per IEC-62271-100
	c) Duration of short circuit	3 Sec.
10)	Rated short circuit making	82 KA
11)	First pole to clear factor	1.5
12)	Rated short time current	25 KA
13)	Rated duration of short circuit	3 Seconds
14)	Total break time for any current upto the rated breaking current with limiting condition of operating and quenching media pressure (ms)	< 80 ms
15)	Closing time (ms)	< 150 ms
16)	Mounting	Hot dip galvanized lattices steel support structured bolted type
17)	Phase to phase spacing in the switch yard i.e, interpole spacing for breaker (min) in mm	470±10
18)	Required ground clearance from the lowest line terminal if both the terminals are not in same horizontal plane (mm)	3700
19)	Height of concrete plinth (mm)	150
20)	Minimum height of the lowest part of the support insulator from ground liner (mm)	3194
21)	Minimum creepage distance of support insulator (mm)	1116 mm (31 mm/kV)
22)	Minimum corona extinction voltage (kv rms)	92
23)	Standard value of rated transient recovery voltage for terminal fault	As per IEC-56
24)	Standard value of rated line Characteristics for short line faults	
25)	RRRV	KV/ms=0.214
26)	Surge Peak Factor	K=1.6 A
27)	Impedance	450 Ohm
28)	Rated operating duty cycle	O-0.3 Second - CO-3 Minutes-CO
	b) Auto reclosing	Suitable for three phase Auto reclosing duty
29)	Rated insulation level under heavy pollution condition 1.2/50 micro second lightening Impulse withstand voltage (KV peak) to earth	170 KV
30)	Power frequency withstand voltage KV (rms) to earth (KV rms)	70 KV
31)	Rated characteristic for out of Phase breaking	
	a) Out of phase breaking capacity	25% of rated breaking capacity

	b) Standard values of transient recovery	As per IEC-56
	c) Operating mechanism	Spring operated, Anti pumping and Trip free mechanism
	d) Power available for operating mechanism	Three phase 415 Volts 50 C/S or single phase 50 C/S 240 volts
	a) Rated supply voltage of closing and operating devices and auxiliary circuits	220 VDC/110 VDC 240 Volts AC 50 C/S single phase 415 volts 50 Hz three phase
	b) Permissible voltage variation	In case of DC Power supply voltage variation shall be between 85% to 110% of normal voltage. In case of AC power supply voltage variation shall be of the normal voltage as per IS-15% to +10%.
	c) Permissible frequency	□ 3% from normal 50 Hz as per IS 2026 part-I 1977 para 4.4
	d) Combined variation of frequency and voltage	□ 10%
32)	Auxiliary contacts (number & rating)	12 NO and 12 NC on each pole having continuous current rating of 10 Amps. DC breaking rating capacity shall be 2 Amps with circuit time constant less than 20 ms at 220/30 volts DC
33)	Number of trip coils	Two trip coils and 1 close coil with anti-pumping arrangement
34)	Rated terminal load	100 kg. Static. The breaker shall be designed to withstand the rated terminal load, wind, load, earthquake load and short circuit forces
35)	Noise level of the equipment	Not exceeding 140 db
36)	ladder	Necessary platform with ladder shall be provided for local operation/maintenance to ease out accessible reach
37)	Galvanisation Thickness of Supporting structure	125 microns

3.3.30 DRAWINGS AND INSTRUCTION MANUALS:

Following drawings for each item are to be supplied as part of the contract.

- General outline drawings, showing dimensions, front and side elevations and plan of the circuit breaker and its local control panel.
- Outline drawing of bushings showing dimensions and number of sheds and creepage distance.
- Assembly and sub-assembly drawings with numbered parts.
- Sectional views showing the general constructional features, operating mechanism and arc extinguishing chamber, etc.
- Dimension and assembly of important auxiliaries.
- Detailed drawings of operating mechanism. And inter-phase mechanism.
- Test certificates.
- Detailed drawings of mounting structure.
- Spare parts and catalogue
- Wiring diagram showing the local and remote control scheme of breaker including alarms indication devices instruments relay and timer wiring.
- Write up on working of control schematic of breaker.
- Foundation plan including weights of various components and impact loadings for working foundation design. Three copies for each pkg. of the above drawings and instruction manuals covering instructions for installations, operation and maintenance shall be supplied by the contractor(s) without any extra cost.

Section 4 - 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. 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 '**Supply, erection, testing and commissioning of battery bank and battery charger for GSS under Bongaigaon T&T Circle**' covering inter-alia supply of all 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

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 '**Supply, erection, testing and commissioning of battery bank and battery charger for GSS under Bongaigaon T&T Circle**' 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

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

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

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

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**

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**

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**

The whole works under the scope of this Contract shall be completed within **180 (One Hundred and Eighty Days)** months from Contract Commencement Date.

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 - List of delivery destinations
- Appendix 4 - Performance Security.
- Appendix 5 - Price Schedule.
- Appendix 6 - Guaranteed Technical Particulars

**Appendix 4 - 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.**